

Protective Element for Feet

The present invention relates to a protective element to be worn inside footwear to reduce damage/pain to the feet. More particularly the present invention relates to an element to be worn inside sandal style shoes, namely those in which the lower and upper parts are
5 connected by a strap, thong or suchlike, which is designed to pass in between the toes of the wearer.

At present, the trend for sandal style shoes is increasing, with an ever wider variety on offer. Whereas historically this style of shoe was predominantly flat/heelless, recently there has been a move towards high heeled versions, with an increase in fashion/leisure wear to
10 supplement the more traditional holiday/beach wear. This has lead to ever greater numbers of women wearing this style of shoe for longer periods of time.

A large proportion of women find this style of shoe very uncomfortable to wear, as the thong element can rub between the toes and also (particularly with high heeled varieties) cause pain through pressure on the web of skin between the toes, as this area is being pushed into
15 the thong element. As a result of this pain and discomfort, a large number of women who would like to wear this style of shoe are prevented from doing so, and others simply put up with the pain for the sake of fashion.

Furthermore, whilst with a lot of shoe styles a simple adhesive plaster could be used to provide additional padding and foot protection, due to the open nature of this style of shoe
20 such a precaution would be most unsightly and the majority of women would not like to go down this route.

Whilst no-one has specifically addressed this issue, there have been a wide variety of attempts to produce inserts and other similar devices to improve shoe comfort and reduce damage to the feet, the most pertinent are discussed below.

25 **WO 94/01496 (SCHERING-PLOUGH)** discloses a wide range of foot-comfort pads ranging from full insoles to heel pads and toe crest pads. The invention disclosed is directed to the specific polysiloxane elastomer used in the construction of these pads and no disclosure specific to toe post footwear is made.

US 2003/0230312 (DUMITRASCU) discloses an adhesive skin protective patch fore the
30 forefoot, which is specifically designed to be a low visibility device, i.e. one that can be worn with "dressy" footwear. The invention disclosed is essentially a specifically shaped sticking plaster, which is preferably transparent. There is no disclosure which refers to any

form of protection for the inter-toe web where the greatest discomfort is found with toe post style shoes. However, this document does represent the single most relevant piece of background art.

US 5,683,354 (LEVY) discloses an adhesive bandage for a digit of a human hand or foot.

5 The disclosed bandage (sticking plaster) is ostensibly star shaped in configuration, the disclosure claiming that the plurality of radially extending points aids with adhesion around "flexible parts of the body" such as fingers and toes, where traditional plasters are prone to slippage and poor adhesion. This disclosure has no material effect on the toe-post protector concept.

10 US 2002/0095107 (MARTIN) discloses a sleeve for the protection of fingers or toes and is included herein to demonstrate the current state of the art, having no specific bearing on the toe-post protector project.

Of the prior art documents above, only DUMITRESCU really addresses the issue of foot comfort and fashion, however, the disclosure in said document would not be any use with a
15 sandal style shoe, since it has portions wrapped around each toe, some of which would be revealed when worn in conjunction with this type of shoe. It is also worth noting that the "patch" disclosed is adhered to the foot itself, which brings problems both in terms of application and also in the longevity of adhesion, since sweat will tend to weaken the adhesive.

20 It is an intention of the present invention to provide an insert, for use in the aforementioned style for footwear, which will enable more women to wear sandal style shoes without suffering the pain described and will also decrease the levels of discomfort suffered by those who already wear them.

The term "half-pipe" shaped is not intended to be restricted to a full half pipe shape, but to
25 encompass any partial hollow cylinder shape which would fulfil the purpose as defined herein.

An insert according to the present invention comprises a flexible cushion suitable for location around the toe post/thong element of a sandal style shoe, said cushion being largely concealed by the shoe and the foot of the wearer when in use.

30 The insert is preferably transparent, such that if any portion of it is visible in use, it does not stand out from the foot.

The insert may be of a substantially planar construction, said planar form being deformed around the thong element, by the user, prior to use.

The central portion of the insert is preferably thicker than the edge portions.

5 The insert may have an adhesive layer provided on one side, such that it can be releasably adhered to the thong element of the shoe.

The insert may be a formed/moulded component, comprising a "half-pipe" shaped element for location about the thong element.

10 The insert may further comprise a substantially planar element for location along a portion of the insole of a shoe, such that in use the ball of the foot of a wearer is located on the planar element, with the "half-pipe" shaped element passing between two toes and providing a cushion between said toes and the thong element of the shoe.

15 The insert may also have a relieved surface (not the adhesive surface, where applicable), said relief preferably comprising a plurality of pimples/protrusions, said protrusions providing additional comfort for the wearer by virtue of increased air circulation, reduced sweat retention and reduced friction. The protrusions may also improve the flexibility/bending characteristics of the insert.

The insert is preferably formed from a silicone gel or like compound, providing both flexibility and cushioning.

20 The present invention will be better understood with reference to the foregoing embodiments, which are given by way of example only.

In a first embodiment 1 there is provided a substantially planar cushion, the central portion 2 of which is thicker than the edges 3. The underside 4 is provided with an adhesive layer for attachment to a shoe. The other side comprising a plurality of protrusions 5, the central protrusions being larger than the outer protrusions.

25 In use, a consumer first cuts the cushion to the appropriate length for their footwear, removes the backing paper (not shown) and then applies the adhesive side 4 of the cushion to the thong element 6 of the shoe (as can be seen, the cushion works for both solid thongs 7 and those made up of two adjacent straps 8). When the shoe is worn, the cushion provides additional soft padding between the toes, the inter-toe web and the shoe, the protrusions 5
30 reduce the contact area, thereby reducing rubbing and also allow air to flow around the contact area thereby reducing the tendency for sweating. The protrusions allow a greater

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thickness of cushion than a solid pad since there is a reduction in the recoil tendency of the folded/bent cushion than would otherwise be the case.

The adhesive holds the cushion in place for as long as is necessary, after which time the cushion can be removed.

- 5 In a second embodiment there is provided a unitarily moulded cushion 9, comprising a substantially upright, half pipe shaped element 10 and a substantially planar element 11. In use the upright element 10 is placed around the thong element of the shoe, the user than placing their foot on top of the planar element 11. In this embodiment the cushion is held in place by both the interaction of the upright element with the thong element of the shoe and
- 10 also the weight of the user trapping the planar element between their foot and the insole.

Claims

1. An insert comprising a flexible cushion comprising a substantially planar element for location along an insole
5 of a sandal style shoe and an at least partial hollow cylindrical element oriented upwardly relative to the planar element and for location around a toe post of the shoe, the cushion being holdable in place by interaction of the partial hollow cylindrical element with the toe
10 post and by a wearer's foot acting on the planar element.
2. An insert according to claim 1, wherein said insert is transparent, such that if any portion of it is visible in use, it does not visually stand out from the foot.
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3. An insert according to claims 1 or 2, wherein the flexible cushion comprises a unitary moulding.
4. An insert according to any proceeding claim, wherein
20 there is provided an adhesive layer for releasable connection of the cushion to the shoe.
5. An insert according to any proceeding claim, wherein said insert also has a relieved surface.
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6. An insert according to claim 5, wherein said relief comprises a plurality of pimples/protrusions.
7. An insert according to any preceding claim, wherein
30 said insert is formed from a silicone gel or like compound.
8. An insert according to any preceding claim fitted to a sandal style shoe.
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9. An insert according to claim 8, wherein the planar element is positioned on the shoe such that, in use, a

ball of the foot of a wearer is located on the element.