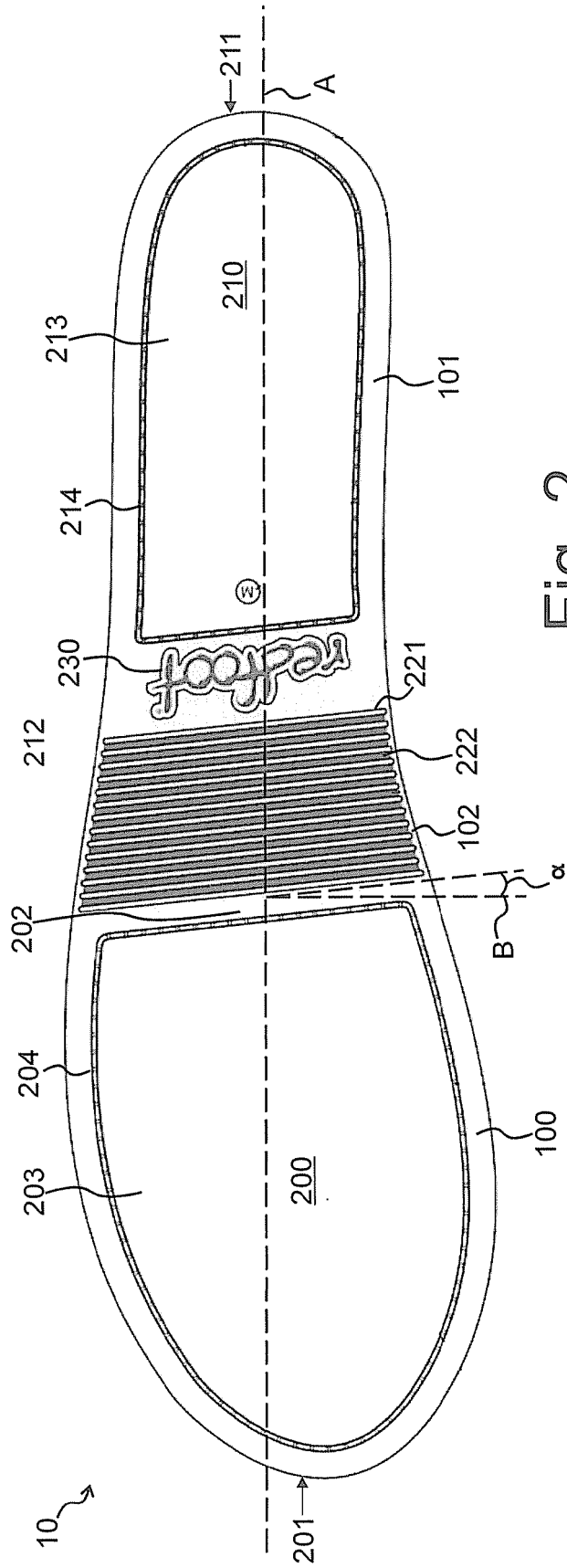
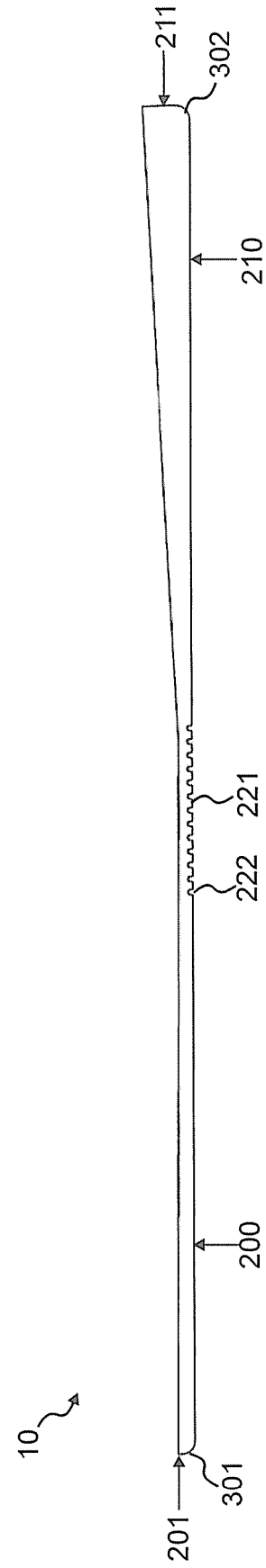


Fig. 1



29.



3
9
L

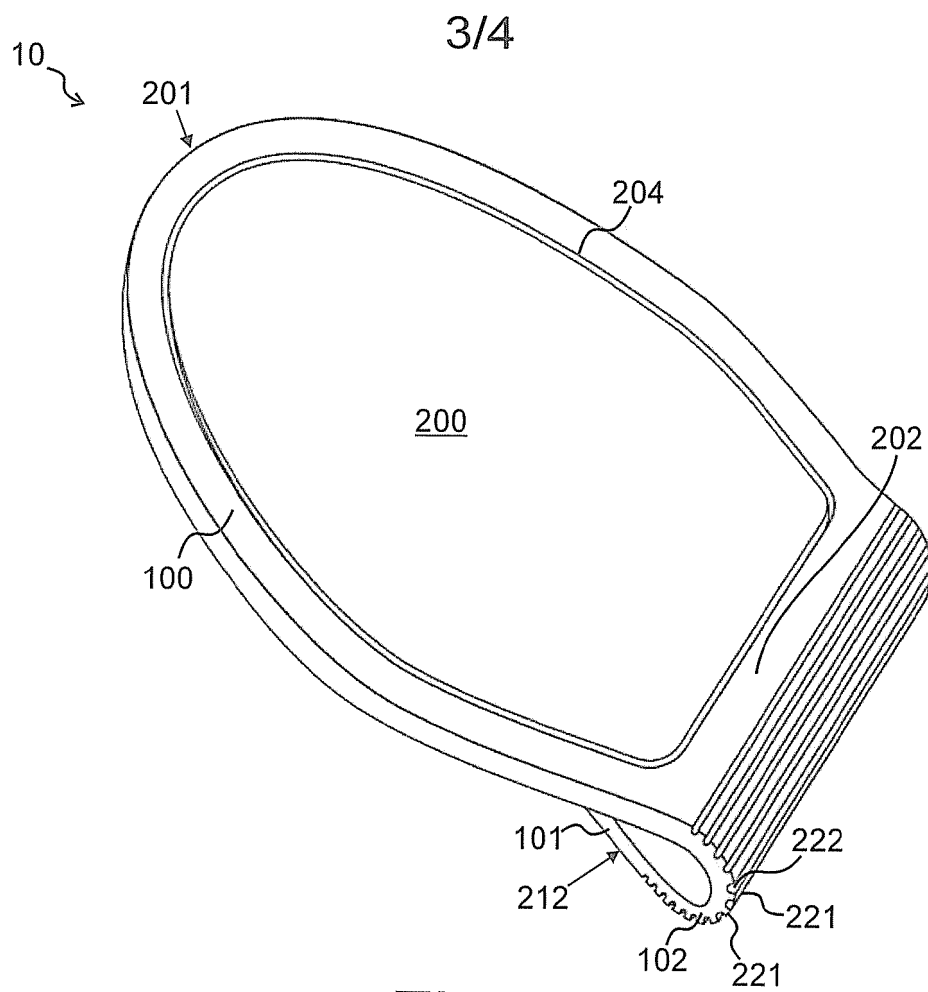


Fig. 4

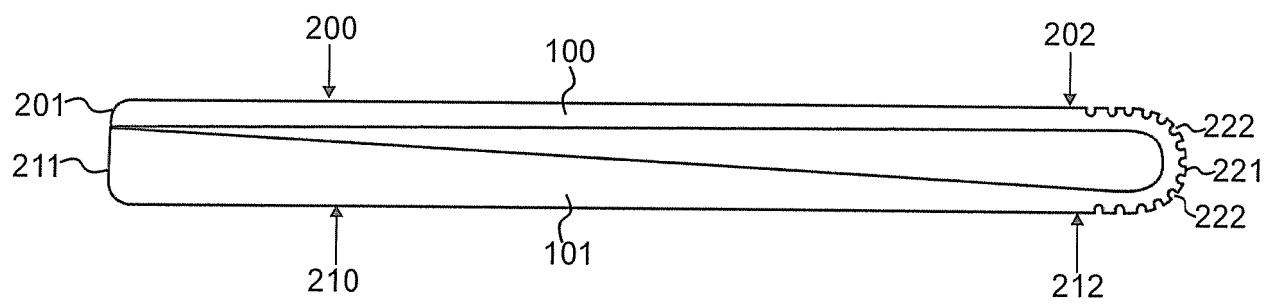


Fig. 5

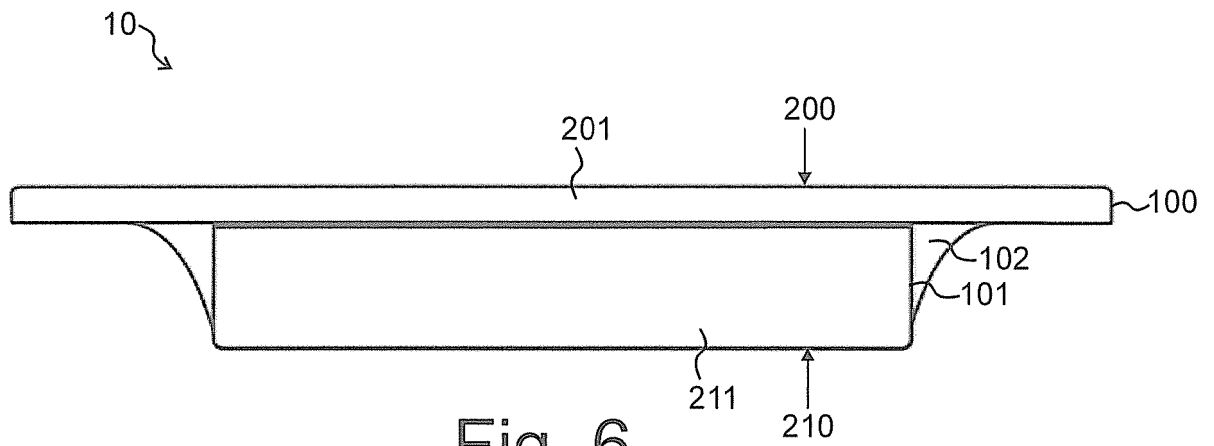


Fig. 6

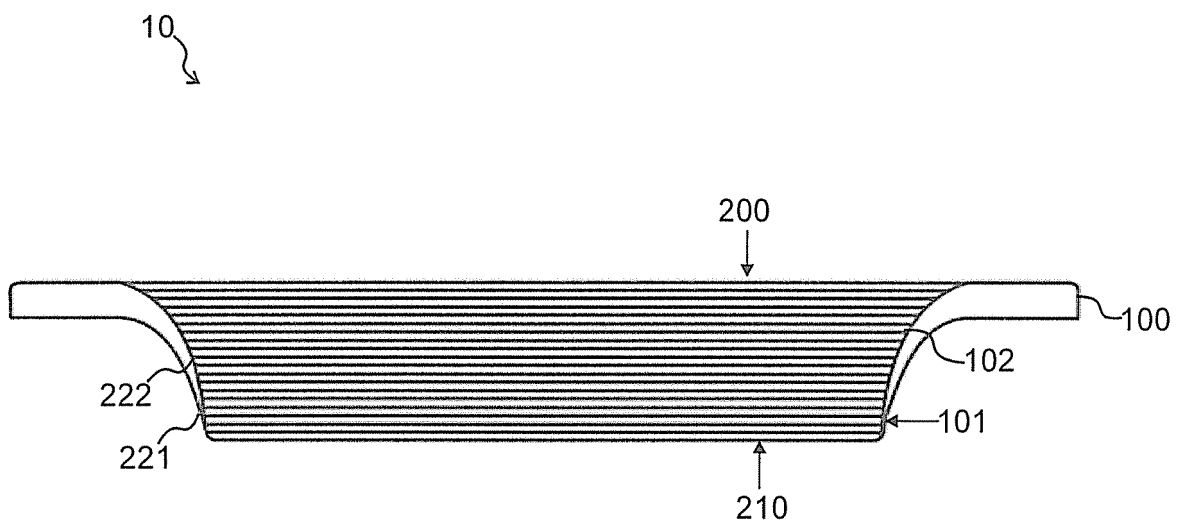


Fig. 7

FLEXIBLE FOLDABLE FOOTWEAR

Field of the Invention

[0001] The present invention relates to flexible footwear. More particularly,
5 the present invention relates to flexible footwear that is foldable.

Background to the Invention

[0002] It is known to provide a relatively light weight foldable shoe, which
can be folded over so that the heel and toe lay adjacent each other for compact
10 storage, for example in a beach bag, hand bag, garment pocket or the like for
carrying the shoe, but which can be extended into a normal shoe or sandal shape
when the footwear is worn.

[0003] For instance, international patent application WO 2004/098335
15 discloses a flexible shoe, which can be folded over so as to occupy a small
storage space. The shoe sole comprises independent parts which are made from
a rigid or semi rigid material. A rigid forward sole portion is provided underneath
the toe area and the ball of the foot, and a rigid rear sole portion is provided
underneath the heel of the foot. The forward and rear portions are permanently
20 positioned away from each other and are connected by a flexible upper sole
connecting portion, which extends from a forward tip of the shoe to the rearward
extent of the shoe, and overlies both the forward and the rear sole portions. The
shoe is foldable, in that the sole folds over on itself with a bend occurring
primarily at an instep portion, wherein the bend is provided by the inherent
25 flexibility of the upper sole connecting portion.

[0004] British patent GB 2,425,454 discloses another example of a flexible
shoe, as a sandal having a flexible sole which can be folded over at an instep
portion, with tougher, more durable toe and heel portions, spaced apart from and
30 connected to each other by the instep portion. The toe portion, which also covers
the ball of the foot, and the heel portion are spaced apart from each other, so that
the toe and ball of the sole portion and the heel portion each occupy

approximately one third of the total area of the sole. The remaining third of the sole comprises the instep portion, which is flexible and is not covered on the underside with any more durable material. The sandal is attached to the foot by means of a toe strap which extends over the bridge of the foot immediately
5 behind the toes, a further strap extending from under the instep and immediately forward of the ankle, and a heel strap which fits around the heel.

Summary of the Invention

[0005] Specific embodiments according to the present invention aim to
10 provide a temporary shoe which is easily foldable into a compact space and can be carried in a ladies handbag, or a small carrying bag. The shoes can be carried for use as an alternative to uncomfortable shoes, such as high heeled shoes or dress shoes, and are therefore particularly suitable for use by ladies. Specific embodiments according to the present invention also aim to provide a sole for a
15 temporary shoe, which is repeatedly foldable without breaking or showing signs of fracture, as an essential component of such a temporary shoe.

[0006] For example, for ladies having a night out in nightclubs, pubs, the theatre or at dinners or other social events, where it is normal to dress in
20 relatively high heeled shoes having heels of 4cm height or more, such shoes can become uncomfortable after prolonged wear and are impracticable for walking medium distances, for example a few hundred meters to a taxi rank, or for walking on rough surfaces such as cobble stones, gravel etc. The footwear is therefore likely to be particularly suitable for use as an emergency shoe, or a
25 shoe which can be taken to parties as a backup shoe for when more formal of fashionable high heeled shoes become uncomfortable.

[0007] According to a first aspect, there is therefore provided a sole for a foldable shoe made from an elastomeric material, which comprises styrene,
30 polystyrene, calcium carbonate, silicon dioxide, naphthenic oil and zinc stearate. Advantageously, this combination has been found to provide the elastomeric material with the required degree of mechanical resistance to breaking or

fracturing, in view of tests exceeding 167,000 folding operations of a sole according to the invention.

5 **[0008]** In an embodiment of the sole, the sole comprises a flexible forward sole portion extending from a front toe part of the shoe to a flexible in-step portion, a flexible rear sole portion extending from a rearmost part of the shoe to the flexible in-step portion, the forward, rear and in-step sole portions co-operating to form a substantially continuous sole when the shoe is worn by a user, wherein an underside of the flexible in-step portion comprises a foldable
10 region configured with a plurality of ridges and channels, each extending across at least part of the width of the sole and disposed transverse to a main front - rear axis of the sole, the channels increasing the flexibility of the foldable region relative to the front and rear sole portions.

15 **[0009]** In an embodiment of the sole, each ridge preferably comprises a respective portion of the sole and a substantially flat, ground-engaging surface. Each ridge may optionally extend across the full width of the sole.

20 **[0010]** In an embodiment of the sole, each channel is preferably a slot within the height of the sole and is separated from its neighbouring channel by a ridge.

25 **[0011]** Preferably, the ridges and channels are substantially parallel to one another. The ridges and channels may be disposed transversally to the main front - rear axis of the sole, at an angle offset relative to a perpendicular transverse axis.

30 **[0012]** In an embodiment, the flexible forward sole portion and the flexible in-step portion have respective heights of substantially 3 mm, and the flexible rear sole portion has a height tapering from substantially 3 mm adjacent the in-step portion to substantially 10 mm at the rearmost part of the shoe. In a variant of this embodiment, each ridge has a height of substantially 3 mm. Each channel may have a depth of at least 1 mm, and may be at least 1 mm wide.

[0013] In an embodiment of the sole, an upper side of the flexible forward sole portion comprises a forward edge, an upper side of the flexible rear sole portion comprises a rearward edge, and the forward and rearward edges abut
5 each other when the foldable region is in a folded position. In a variant of this embodiment, an underside of the flexible forward sole portion is a first ground engaging surface and the flexible forward sole portion is at least partially bevelled between the forward edge and the first ground engaging surface. In a further
10 variant of these embodiments, an underside of the flexible rear sole portion is a second ground engaging surface and the flexible rear sole portion is at least partially bevelled between the rearward edge and the second ground engaging surface. The bevel preferably has a radius of substantially 1.5 mm.

[0014] In a preferred embodiment, the elastomeric material is a compound
15 comprising, substantially, 51.95% styrene, 17.32% polystyrene, 12.99% calcium carbonate, 4.33% silicon dioxide, 12.99% naphthenic oil and 0.42% zinc stearate.

[0015] In an embodiment of the sole, the sole further comprises two peripheral channels, respectively surrounding the flexible forward sole portion
20 and the flexible rear sole portion. In a variant of this embodiment, each peripheral channel is at least 1 mm wide and disposed substantially 5 mm from a peripheral edge of the sole. In a further variant of these embodiments, the sole may have a removable ground-engaging plate within the area defined by each peripheral channel.

25

[0016] In an embodiment of the sole, at least a portion of an upper side of the flexible rear sole portion is cored, to reduce the weight of the sole.

[0017] According to another aspect, there is also provided a foldable shoe
30 comprising a sole substantially as described above and hereinafter.

[0018] According to a further aspect, there is also provided a method of manufacturing a sole, comprising the steps of locating an elastomeric compound comprising styrene, polystyrene, calcium carbonate, silicon dioxide, naphthenic oil and zinc stearate into a mould configured as a sole substantially as described above and hereinafter, and pressing and heating the compound into the mould, under a pressure of substantially 40 kg, at a heat of substantially 70°C, for a duration of substantially 5 to 8 seconds.

[0019] In a preferred embodiment of the method, the compound comprises, substantially, 51.95% styrene, 17.32% polystyrene, 12.99% calcium carbonate, 4.33% silicon dioxide, 12.99% naphthenic oil and 0.42% zinc stearate.

Various other aspects are as described in the claims herein.

Brief Description of the Drawings

[0020] For a better understanding of the invention and to show how the same may be carried into effect, there will now be described by way of example only, specific embodiments, methods and processes according to the present invention with reference to the accompanying drawings in which:

Figure 1 illustrates schematically in perspective view from one side a foldable shoe according to a specific embodiment of the present invention;

Figure 2 illustrates schematically in view from underneath, a sole of the shoe of Figure 1;

Figure 3 illustrates schematically in view from one side, the sole of Figure 2;

Figure 4 illustrates schematically the shoe in folded configuration;

Figure 5 illustrates schematically in view from one side, the shoe when in folded configuration;

Figure 6 illustrates schematically in view from front, the shoe when in folded
5 configuration;

Figure 7 illustrates schematically in view from the rear, the shoe when in folded configuration.

10 **Detailed Description**

[0021] There will now be described by way of example a specific mode contemplated by the inventors. In the following description numerous specific details are set forth in order to provide a thorough understanding. It will be apparent however, to one skilled in the art, that the present invention may be
15 practiced without limitation to these specific details. In other instances, well known methods and structures have not been described in detail so as not to unnecessarily obscure the description.

[0022] In this specification the term “shoe” is used generically to include
20 various different types of footwear including shoes, slippers, plimsoles, pumps, boots, sandals, and the like.

[0023] Referring to Figure 1 herein, there is illustrated schematically in perspective view from one side a flexible foldable shoe 1 according to a specific
25 embodiment of the present invention.

[0024] The shoe 1 comprises a flexible foldable sole 10 consisting of a flexible forward sole portion 100, which extends from a front toe part of the shoe to a flexible in-step portion, underneath the toe area and ball of the foot of a
30 wearer and underneath the front part of the instep of the foot; a flexible rear sole portion 101 extending from a rearmost part of the shoe to the flexible in-step portion, under the heel area of the foot and the rear part of the instep; and a

flexible in-step sole portion 103 connecting the front and rear sole portions, wherein the forward, rear and in-step sole portions 100, 101, 102 co-operate to form a substantially continuous sole 10 when the shoe is worn by a user

5 **[0025]** The flexible foldable shoe 1 further comprises an upper portion 103 which is bonded to at least the forward and rear sole portions 100, 101 respectively; and a shoe liner (not shown) which is placed inside the shoe over the forward, rear and in-step portions, and which is bonded to the forward, rear and in-step portions and the upper portion 102.

10

[0026] When the shoe is in the extended position with the sole in a substantially flat condition, as shown in Figure 1, the shoe resembles a conventional “ballet pump” or similar type shoe, having a substantially flat sole and the upper 103 extending all of the way around an outer perimeter of the sole, and having an upper peripheral rim 104 which extends from the heel, along the
15 outside of the foot when in use, over the bridge of the foot, and along the instep of the foot, so that the shoe can be slipped on and off the foot.

[0027] In accordance with the purpose of the shoe as being a comfortable
20 and practical low heel shoe, preferably the materials of the upper are soft and comfortable to wear. Accordingly, the upper 103 is preferably formed from a flexible fabrics material. A wide variety of fabrics materials can be used, including soft flexible leather, cloth or flexible plastics materials.

25 **[0028]** Referring to Figures 2 and 3 herein, there is illustrated in a plan view from underneath and in a lateral view, respectively, the foldable flexible sole of the shoe of Figure 1 herein.

[0029] The underside of the forward sole portion 100 comprises a first
30 ground – engaging portion 200 and abuts the in-step portion 102 at a position 202 approximately a third of the way along the entire length of the sole, starting from a forward edge 201 of the forward sole portion 100.

[0030] At least a substantially flat part 203 of the first ground – engaging portion 200 may be formed as an integral part of the sole 10, or comprise an insert or removable plate 203 made of a different material less flexible, but more hard – wearing, than the sole 10, and bonded thereto.

[0031] The underside of the forward sole portion 100 may also comprise a three dimensional pattern. In the example shown, the forward sole portion 100 has a peripheral channel 204, which extends continuously and at a spacing of 5 mm from a peripheral edge of the sole 10 about substantially the forward sole portion 100, and which delimits the insert or part 203 of the forward sole portion 100 within the first ground – engaging portion 200. The peripheral channel 204 is at least 1 mm wide, and may be formed to imitate a stitching seam.

[0032] The underside of the rear sole portion 101 comprises a second ground – engaging portion 210 and abuts the in-step portion 102 at a position 212 approximately half of the way along the entire length of the sole, starting from a rear edge 211 of the rear sole portion 101.

[0033] At least a substantially flat part 213 of the second ground – engaging portion 210 may be formed as an integral part of the sole 10, or comprise an insert or removable plate 213 made of a different material less flexible, but more hard – wearing, than the sole 10, and bonded thereto.

[0034] The underside of the rear sole portion 101 may also comprise a three dimensional pattern. In the example shown, the rear sole portion 101 has a peripheral channel 214, which extends continuously and at a spacing of 5 mm from a peripheral edge of the sole 10 about substantially the rear sole portion 101, and which delimits the insert or part 213 of the rear sole portion 100 within the second ground – engaging portion 200. The peripheral channel 214 is at least 1 mm wide, and may be formed to imitate a stitching seam.

[0035] In order to improve comfort in use, the underside of the flexible forward sole portion 100 also comprises a bevelled surface 301 between the forward edge 201 and the first ground engaging surface 200, with a bevel radius of substantially 1.5 mm. Likewise, the underside of the flexible rear sole portion 101 also comprises a bevelled surface 302 between the rear edge 211 and the second ground engaging surface 210, with a bevel radius of substantially 1.5 mm.

[0036] In other embodiments, other sole patterns 203, 204, 213, 214 of conventional manner may be formed in the sole 10 during the process of manufacture of the sole 10, described hereafter.

[0037] In order to improve comfort in use still, and now with particular reference to Figure 3, the flexible forward sole portion 100 and the flexible in-step portion 102 have respective heights of, substantially, 3 mm, and the flexible rear sole 101 portion has a height tapering from substantially 3 mm adjacent the in-step portion 101 to substantially 10 mm at the rearmost part 211 of the sole.

[0038] Both the front false stitching 204 and the rear false stitching 214 have portions which extend across the width of the sole, respectively, to the front and rear of the front toe and ball of the foot and to the front and rear of the heel area, such that the instep, connecting portion 102 is bracketed by the rear part of the front false stitching 204 and the front part of the rear false stitching 214.

[0039] The instep portion 102 constitutes the meeting point between the forward and rear sole portions 100, 101 and lies underneath the instep of the wearer's foot, away from the ball of the foot and the toe area where the user exerts pressure on the forward sole portion 100, and away from the heel area where the user exerts the most pressure on the rear sole portion 101.

[0040] The underside of the instep portion 102 comprises a foldable region configured with a plurality of ridges 221 and channels 222, all of which are substantially parallel to one another and extend across a substantial part of the width of the sole. The parallel ridges 221 and channels 222 are disposed
5 transverse to a main front - rear axis A of the sole 10, at an angle α relative to an axis B perpendicular to the main front - rear axis A.

[0041] Each ridge 221 comprises a respective portion of the sole and a substantially flat, ground-engaging surface, whereby each ridge 221 is effectively
10 a portion of the sole at its full height, and extends across substantially the width of the sole. Thus, with reference to the dimensions of the embodiment shown, each ridge has a height of, substantially, 3 mm.

[0042] Each channel 222 is substantially semi-cylindrical, and extends into
15 the material of the sole within the height of the sole, being separated from its neighbouring channel 222 by a ridge 221. Thus, with reference to the dimensions of the embodiment shown, each channel has a depth of, substantially, 1 mm relative to the ground – engaging surface of the sole, and each channel is at least 1 mm wide.

[0043] The channels 222 between the ridges 221 increase the flexibility of the foldable region 102 relative to the flexible forward and rear sole portions 100, 101, as each channel 222 reduces, within its width, the height of the sole material between the topside and the ground-engaging underside of the sole, thus the
20 mechanical resistance of the sole material against deformation within the height and width of each channel 222.

[0044] A portion 230 of the rear sole portion 101 may be provided with a molded-in pattern or text on its ground facing part, located substantially between
30 the first ridge 221 or channel 222 of the in-step portion 103 and the ground – engaging area 210 of the rear sole portion 101, and which can be either molded

in as part of the shape of the sole, or which can be included in a coloration of the plastics material used for manufacture of the sole.

5 **[0045]** The material of the sole should be durable enough for outdoor use and provide enough rigidity to protect the foot from uneven surfaces, but also be of light weight. To provide sufficient flexibility for the sole and, importantly, sufficient mechanical resistance of the sole material to wear from repeated folding operations, the sole is manufactured as an integral structure including the forward, rear and instep sole portions 100, 101, 102 from a durable plastics
10 material which has sufficient rigidity and durability to protect the wearers foot from sharp undulations in the ground, e.g. stones, pebbles or the like, and to spread the pressure of such obstacles and grounded irregularities, but also flexible enough to allow for some degree of comfort in the wearer in adapting to the shape of the foot of the wearer.

15 **[0046]** In the example, the sole 10 is manufactured in an elastomeric material which is a compound comprising, substantially, 51.95% styrene, 17.32% polystyrene, 12.99% calcium carbonate, 4.33% silicon dioxide, 12.99% naphthenic oil and 0.42% zinc stearate. A typical sole thus comprises,
20 substantially, 60 grams SBS, 20 grams PS, 15 grams CaCo₃, 5 grams SiO₂ (silicon dioxide, silicon (IV) oxide, silicic anhydride, quartz sand), 15 grams Naphthenic oil and 0.5 gram Zinc stearate, resulting in a lightweight, durable, relatively resilient and yet non-frangible structure.

25 **[0047]** The sole of the example is obtained by locating the compound in liquid form into a mould configured as a sole substantially as described and shown with reference to Figures 2 and 3. The compound is next pressed into the mould under a pressure of, substantially, 40 kg, and heated at a heat of, substantially, 70°C for a duration of, substantially, 5 to 8 seconds whereby the
30 structure of Figures 2 and 3 is then obtained.

[0048] Referring to Figures 4 to 7 herein, there is illustrated schematically the flexible foldable sole of Figures 2 and 3, in a folded condition. Figure 4 shows the folded sole in perspective view from one side; Figure 5 shows the folded sole of Figure 4 in a lateral view; Figure 6 shows the folded sole of Figures 4 and 5 from a first end view, facing the forward extremity 201 of the forward sole portion 100 and the rearward extremity 211 of the rear sole portion 101 adjacent one another; and Figure 7 is the reverse view of Figure 6, showing the folded sole of Figures 4 and 5 from a second end view, opposed to the first end view and facing the flexible connecting sole portion 102. The remainder of the shoe, in particular the upper, is not shown in Figures 4 to 7, so that the sole can be seen in clarity

[0049] Referring to Figures 5 and 6 herein, the sole 10 is illustrated in fully folded condition, respectively from the right and from the rear, in which the forward sole portion 100 lies substantially parallel and along side the rear sole portion 101. Shown in detail is the front face 201 of the front sole portion 100, and the rear face 211 of the rear sole portion 101, wherein the toe portion and the heel portion of the shoe are shown in end view.

[0050] Referring to Figure 5 and 7 herein, the sole 10 is again illustrated in fully folded condition, respectively from the right and from the front, in which the forward sole portion 100 again lies substantially parallel and alongside the rear sole portion 101. Shown in detail are the plurality of ridges 221 and channels 222 constituting the flexible hinge between the front sole portion 100 and the rear sole portion 101, wherein the ridges and channels are shown in end view.

[0051] With reference to Figure 4, in use, the material of the sole allows the channels 222 of the instep portion 102 to deform longitudinally, transversally to the main axis A, under a folding force exerted substantially along the main axis A, wherein:

the distance between their edges constituted by intermediate each ridge 221 is progressively increased and distributed amongst all the channels of the instep portion 102.

5 **[0052]** Overall, a pair of shoes as described herein should fold over and compact so as to fit within the average ladies handbag or clutch bag, so they can be unobtrusively carried on a night out, and should be light weight enough so as to be carried within a clutch bag.

10 **[0053]** The interface 102 between the forward and rear sole portions 100, 101 respectively need not be a straight line or edge. In another embodiment, the interface between the rear portion 202 of the forward sole portion 100 and the forward portion 230 of the rear sole portion 101 may be a curved line, with a matching pair of wavy or curved contoured faces on the front and rear sole
15 portions which abut or meet each other.

Claims:

1. A sole for a foldable shoe, wherein the sole is made from an elastomeric material comprising styrene, polystyrene, calcium carbonate, silicon
5 dioxide, naphthenic oil and zinc stearate.

2. A sole for a foldable shoe according to claim 1, further comprising :

a flexible forward sole portion extending from a front toe part of the shoe to
10 a flexible in-step portion;

a flexible rear sole portion extending from a rearmost part of the shoe to the
flexible in-step portion;

15 the forward, rear and in-step sole portions co-operating to form a
substantially continuous sole when the shoe is worn by a user;

wherein an underside of the flexible in-step portion comprises a foldable
region configured with a plurality of ridges and channels, each extending across
20 at least part of the width of the sole and disposed transverse to a main front –
rear axis of the sole, the channels increasing the flexibility of the foldable region
relative to the front and rear sole portions.

3. The sole as claimed in claim 2, wherein each ridge comprises a
25 respective portion of the sole and a substantially flat, ground-engaging surface.

4. The sole as claimed in claim 2 or 3, wherein each ridge extends
across the full width of the sole.

30 5. The sole as claimed in any of claims 2 to 4, wherein each channel
is a slot within the height of the sole and is separated from its neighbouring
channel by a ridge.

6. The sole as claimed in any of claims 2 to 5, wherein the ridges and channels are substantially parallel to one another.

5 7. The sole as claimed in any of claims 1 to 6, wherein the ridges and channels are disposed transversally to the main front - rear axis of the sole, at an angle offset relative to a perpendicular transverse axis.

8. The sole as claimed in any of claims 1 to 7, wherein an upper side of the flexible forward sole portion comprises a forward edge, an upper side of the flexible rear sole portion comprises a rearward edge, and the forward and rearward edges abut each other when the foldable region is in a folded position.

9. The sole as claimed in claim 8, wherein an underside of the flexible forward sole portion is a first ground engaging surface and the flexible forward sole portion is at least partially bevelled between the forward edge and the first ground engaging surface.

10. The sole as claimed in claim 8 or 9, wherein an underside of the flexible rear sole portion is a second ground engaging surface and the flexible rear sole portion is at least partially bevelled between the rearward edge and the second ground engaging surface.

11. The sole as claimed in claim 9 or 10, having a bevel radius of substantially 1.5 mm.

12. The sole as claimed in any of claims 1 to 11, wherein at least a portion of an upper side of the flexible rear sole portion is cored.

13. The sole as claimed in any of claims 1 to 12, wherein the elastomeric material is a compound comprising, substantially, 51.95% styrene, 17.32% polystyrene, 12.99% calcium carbonate, 4.33% silicon dioxide, 12.99% naphthenic oil and 0.42% zinc stearate.

14. A shoe comprising a sole according to any of claims 1 to 13.

15. A method of manufacturing a sole, comprising the steps of:

5 locating an elastomeric compound comprising styrene, polystyrene, calcium carbonate, silicon dioxide, naphthenic oil and zinc stearate into a mould configured as a sole according to any of claims 1 to 20; and

10 pressing and heating the compound into the mould, under a pressure of substantially 40 kg, at a heat of substantially 70°C, for a duration of substantially 5 to 8 seconds.

15 16. The method as claimed in claim 16, wherein the compound comprises, substantially, 51.95% styrene, 17.32% polystyrene, 12.99% calcium carbonate, 4.33% silicon dioxide, 12.99% naphthenic oil and 0.42% zinc stearate.

17. A sole substantially as described herein with reference to the accompanying drawings.

20 18. A shoe with a sole substantially as described herein with reference to the accompanying drawings.



Application No: GB1302790.9

Examiner: Carrie-Ann Williams

Claims searched: 1-18

Date of search: 18 August 2014

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X,Y	X=1,15 Y=2-12,14	US 4117037 A1 (HIMES) see whole document
X,Y	X=1,15 Y=2-12,14	US 4640797 A1 (GOGUEN) whole document relevant
X,Y	X=1,15 Y=2-12,14	CN 102850711 A (XU) see WPI abstract accession no. 13-H62793
Y	2-12,14	CN 201388595 Y (XUEYAN) see figure 2 and WPI abstract accession no. 2010-B46723
Y	2-12,14	CN 2041106 U (LIMING) see figures and EPODOC abstract
Y	2-12,14	WO 2012/022154 A1 (ZHANG) see figures and WPI abstract accession no. 2011-F69209

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^X :

Worldwide search of patent documents classified in the following areas of the IPC

A43B

The following online and other databases have been used in the preparation of this search report

WPI, EPODOC, TXTAU1, TXTCA1, TXTCNT, TXTEP1, TXTGB1, TXTJPS, TXTJPT, TXTKRT, TXTUS0, TXTUS1, TXTUS2, TXTUS3, TXTUS4, TXTUS5, TXTWO1, TXTWOT



International Classification:

Subclass	Subgroup	Valid From
A43B	0003/24	01/01/2006
A43B	0003/10	01/01/2006
A43B	0013/04	01/01/2006
A43B	0013/14	01/01/2006