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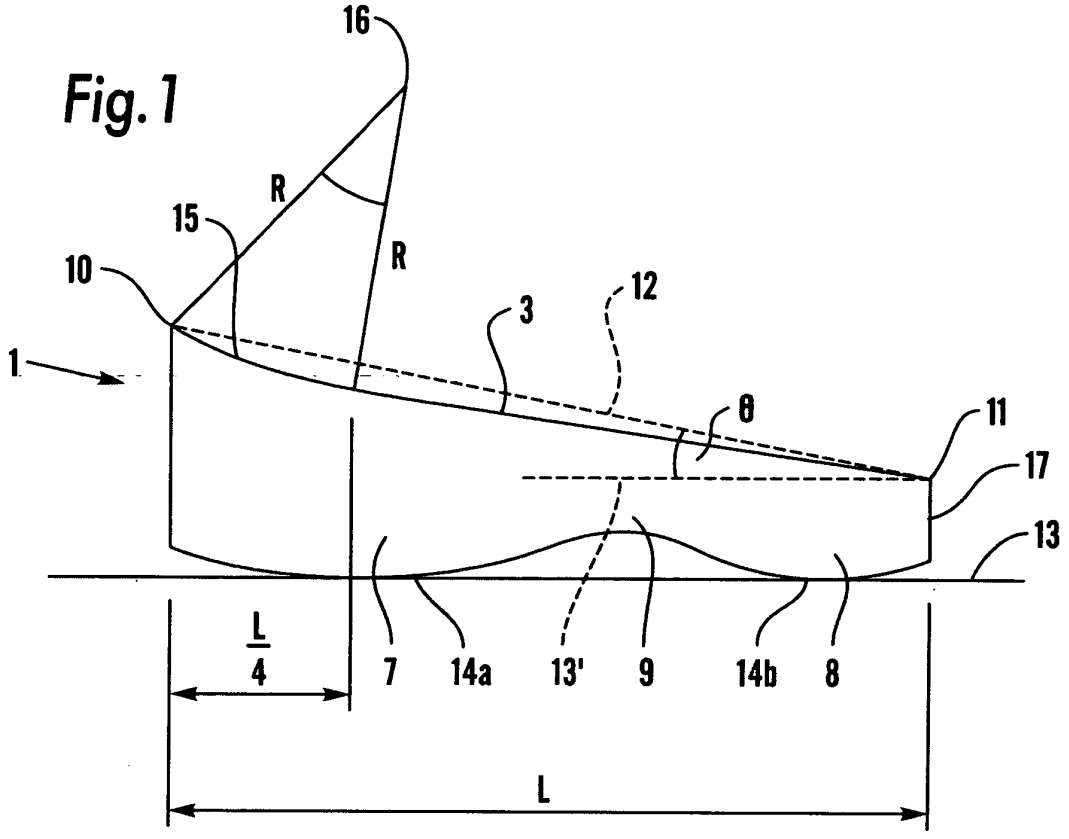
(54) Shoe sole

(57) A sole (1) for a shoe is configured to position the ball of a foot of a user of the shoe higher than their heel. The sole (1) has an upper surface (3) for receiving the ball and heel of the foot of the user. A straight line (12) formed between opposite ends (10,11) of the upper surface (3) is inclined with respect to a plane (13) contactable by ground engaging lower surfaces (14a,14b) of the sole (1) at an angle (θ) in the range of 2° to 25°.



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Description

[0001] The present invention relates to a sole for a shoe.

[0002] As shoes are often worn for long periods of time it would be useful if they could provide some health benefit to the wearer of the shoe.

[0003] It is an object of the present invention to provide a sole for a shoe for improving the health of the wearer of the shoe.

[0004] The invention makes use of the effect of wearing high heel shoes. Wearing high heel shoes affects the posture of the person wearing them making them appear tall and elegant. However, this causes tension and pain in the spine and back muscles making the person wearing them feel uncomfortable. Thus, a person may only wear high heel shoes for a few hours at a time before being adversely affected thereby.

[0005] According to the present invention there is provided a sole for a shoe configured to position the ball and/or toes of a foot of a user of the shoe higher than their heel, the sole having an upper surface for receiving the ball and heel of the foot of the user, a straight line formed between opposite ends of the upper surface being inclined with respect to a plane contactable by ground engaging lower surfaces of the sole at an angle in the range of 2° to 25°. The angle may be in the range of 10° to 20°.

[0006] By having a high heel sole in reverse (i.e. by having the ball of the foot higher than the heel) the tension caused by wearing shoes incorporating the soles is moved to the front of the wearer so that stomach muscles and muscles in the back of the legs including the thighs are in tension. This provides improved blood circulation in the veins of the legs including the thighs and loss of excessive fat in the stomach muscles which produces loss of weight in the stomach and the legs including the thighs. Thus, a person wearing shoes incorporating the soles can lose weight in the course of their activities such as working in an office, factory or kitchen or being at school due to the movement of stomach muscles and leg muscles including thigh muscles. The movement of these muscles creates very healthy blood circulation in them.

[0007] In mountain climbing, the steeper the mountain the greater the movement of stomach muscles and leg muscles including thigh muscles in the climber. In the same way, the higher the ball of the foot is above the heel the greater muscle movement in the stomach and legs including the thighs. Thus the sole causes greater loss of weight and unwanted fats and the loss is proportional to the height of the ball of the foot above the heel. Blood circulation is also improved in veins in the legs including the thighs at least helping to fight diseases due to bad blood circulation in these veins.

[0008] Weak pain in the stomach muscles and leg including thigh muscles from wearing the shoes will go away the longer the shoes incorporating the soles are worn. By regularly changing shoes where each change has an increase in the height between the ball and heel, the full benefit of losing weight in the right places and improving blood circulation can be achieved.

[0009] The term shoe includes footwear such as boots, slippers, sandals and sports shoes.

[0010] Wedge means may be releasably attached to the underside of a front end portion of the sole for enabling attachment of alternative wedge means to alter the angle.

[0011] The upper surface of the sole preferably has a curved front end portion with a centre of curvature situated above the upper surface. The front end portion may have a radius of curvature between 50 and 200 mm. The front end portion may extend over substantially a quarter of an entire length of the sole. The dimensions of the curved front end portion enable a user of a shoe incorporating the sole to walk easily without toppling.

[0012] The sole may include a reinforced portion between a ball receiving sole portion and a heel receiving sole portion. The reinforced portion enables the sole to handle the large stresses induced in that portion by the weight of the user or wearer of a shoe incorporating the sole.

[0013] A shoe or so-called "slim shoe" may be provided which includes a sole as previously described.

[0014] The shoe preferably includes means for holding the foot of the user to the sole. The foot holding means may comprise two portions and fastening means arranged to fasten the two portions at least towards each other. The two foot holding means portions may be arranged to overlap when fastened by the fastening means. This enables the foot holding means to cope with the large stresses exerted when a user is wearing the shoe. The shoe may include means for securing an ankle of the user to the shoe.

[0015] A kit of parts may be provided which includes a pair of soles, plural pairs of wedge means and releasable attachment means for attaching a pair of said wedge means to said pair of soles.

[0016] Embodiments of the present invention will now be described, by way of example, with reference to the accompanying drawings, in which:

Figure 1 is a schematic side elevational view of a sole according to one embodiment of the invention;
Figure 2 is a schematic side elevational view of a shoe incorporating the sole of Figure 1;
Figures 3 to 8 are side elevational views of various shoes incorporating modified soles; and
Figures 9 and 10 are a side elevational view and a bottom view, respectively, of a shoe incorporating a sole according to another embodiment of the invention.

[0017] Referring to Figures 1 and 2 of the accompanying drawings, a sole 1 for a shoe 2 has an upper surface 3 for receiving the ball 4 and heel 5 of a foot 6 of a user or wearer of the shoe 2. The sole 1 has a ball receiving sole portion 7 or frontal high portion and a heel receiving

sole portion 8 with a middle or reinforced portion 9 in-between. The portion 9 may be reinforced by cloth reinforced plastic or glass fibre reinforced plastics.

[0018] A front end 10 of the upper surface 3 is higher than a rear end 11 of the upper surface 3 so that the sole 1 is configured to position the ball 4 of a foot 6 of a user of the shoe 2 higher than their heel 5. A straight line 12 (shown dotted) formed between the opposite front and rear ends 10,11 is inclined with respect to a plane 13 contactable by ground engaging lower surfaces 14a,14b of the sole 1 at an angle θ in the range of 2° to 25° and angle θ is shown in Figure 1 between the straight line 12 and a dotted line 13' parallel to the plane 13. The upper surface 3 of the sole 1 has a curved front end portion 15 with a centre of curvature 16 situated above the upper surface 3. The rear end 17 of the sole 1 acts a fulcrum when the sole 1 forms part of a shoe 2 being worn by a user.

[0019] Referring to Figure 2, the shoe 2 has means for holding the foot 6 of the user to the shoe 2 in the form of a top cover in the form of straps 18. The straps 18 need to withstand large forces exerted on them by the foot 6 of the user and may, for example, comprise strong plastics or reinforced plastics or leather.

[0020] In a specific example of a preferred embodiment, the curved front end portion 15 has a radius R of curvature between 50 and 200 mm and extends over substantially a quarter of an entire length L of the sole 1 (see Figure 1).

[0021] Figures 3 to 8 each illustrate a different shoe 2a, 2b, 2c, 2d, 2e, 2f incorporating a modified sole. In Figure 4 the shoe 2b has a pair of straps 18a, 18b which overlap by one strap 18a crossing over the other 18b and the straps 18a,18b are fastened to each other with fastener means 19 where they overlap. In Figure 5 the shoe 2c has a front top cover 20 for covering and holding the front part of the foot of a user.

[0022] Referring to Figures 9 and 10, a shoe 21 has a modified sole 22 with a wedge 23 connected to the underside of a front end portion 24 of the sole 22 by a pair of screws 25. By removing the wedge 23 from the front end portion 24 the sole can be configured to position the ball of a foot of a user of the shoe 21 to be of a smaller height above their heel than when the wedge 23 is attached to the sole 22. By having wedges of different heights the different in height of the ball above the heel can be adjusted accordingly.

[0023] Whilst particular embodiments have been described, it will be understood that various modifications may be made without departing from the scope of the invention. The reinforced portion 9 of the sole 1 may be reinforced with metal and this is suitable for sports footwear and leather sandals incorporating the sole 1.

[0024] The sole 1 may be incorporated into a sports shoe for walking or running and may have a boot-like design and such a boot will develop large stresses in the region where the leg and ankle of a user meet when the user is wearing the shoe correctly. Such a shoe should have means for securing an ankle to the shoe and the ankle securing means should include, say, a threaded lace to withstand these stresses. A shoe incorporating the sole 1 may have any suitable ankle securing means for securing an ankle of the user to the shoe.

[0025] Any suitable means, such as a connecting bolt and/or a connecting slot, may be used to removably attach the wedge 23 to the sole 22.

Claims

1. A sole (1) for a shoe (2) configured to position the ball (4) of a foot (6) of a user of the shoe (2) higher than their heel (5), the sole (1) having an upper surface (3) for receiving the ball (4) and heel (5) of the foot (6) of the user, a straight line (12) formed between opposite ends (10,11) of the upper surface (3) being inclined with respect to a plane (13) contactable by ground engaging lower surfaces (14a,14b) of the sole (1) at an angle (θ) in the range of 2° to 25°.

2. The sole as claimed in claim 1, including a front end portion (24) and wedge means (23) releasably attached to the underside of the front end portion (24) for enabling attachment of alternative wedge means (23) to alter the angle (θ).

3. The sole as claimed in claim 1 or 2, wherein the upper surface (3) has a curved front end portion (15) with a centre of curvature (16) situated above the upper surface (3).

4. The sole as claimed in claim 3, wherein the curved front end portion (15) has a radius of curvature between 50 and 200 mm.

5. The sole as claimed in claim 2, 3 or 4, wherein the front end portion (15,24) extends over substantially a quarter of an entire length (L) of the sole (1).

6. The sole as claimed in any preceding claim, including a reinforced portion (9) between a ball receiving sole portion (7) and a heel receiving sole portion (8).

7. The sole as claimed in any preceding claim, wherein said angle (θ) is in the range of 10° to 20°.

8. A shoe (2) including the sole (1) as claimed in any preceding claim.

9. The shoe as claimed in claim 8, including means (18) for holding the foot of the user to the sole (1).

10. The shoe as claimed in claim 9, wherein the foot holding means comprises two portions (18a,18b) and fastening means (20) arranged to fasten the two portions (18a,18b) at least towards each other.

11. The shoe as claimed in claim 10, wherein said two foot holding means (18a,18b) portions are arranged to overlap when fastened by the fastening means (20).

12. The shoe as claimed in any one of claims 8 to 11, including means for securing an ankle of the user to the shoe.

13. A kit of parts including a pair of soles (1) and plural pairs of wedge means (23) as claimed in claim 2 or any claim dependent thereon, and releasable attachment means (25) for attaching a pair of said wedge means (23) to said pair of soles (1).

Fig.1

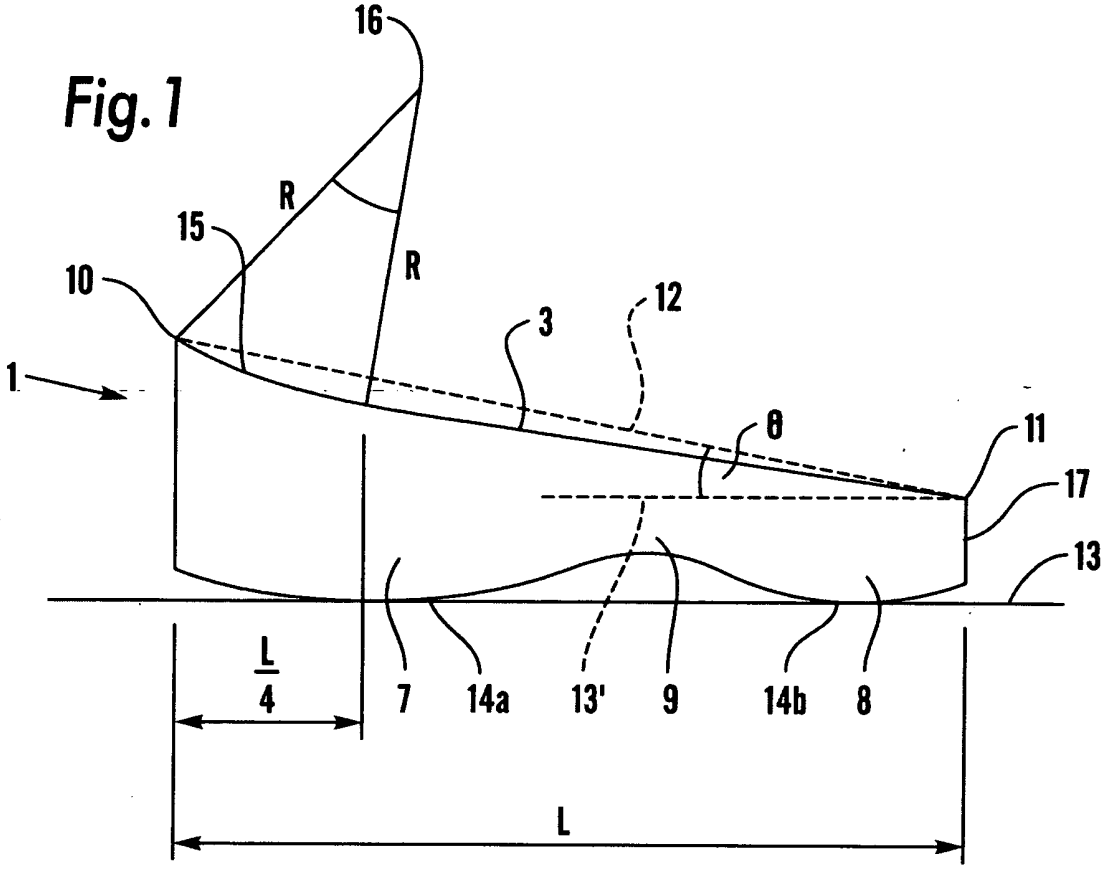


Fig.2

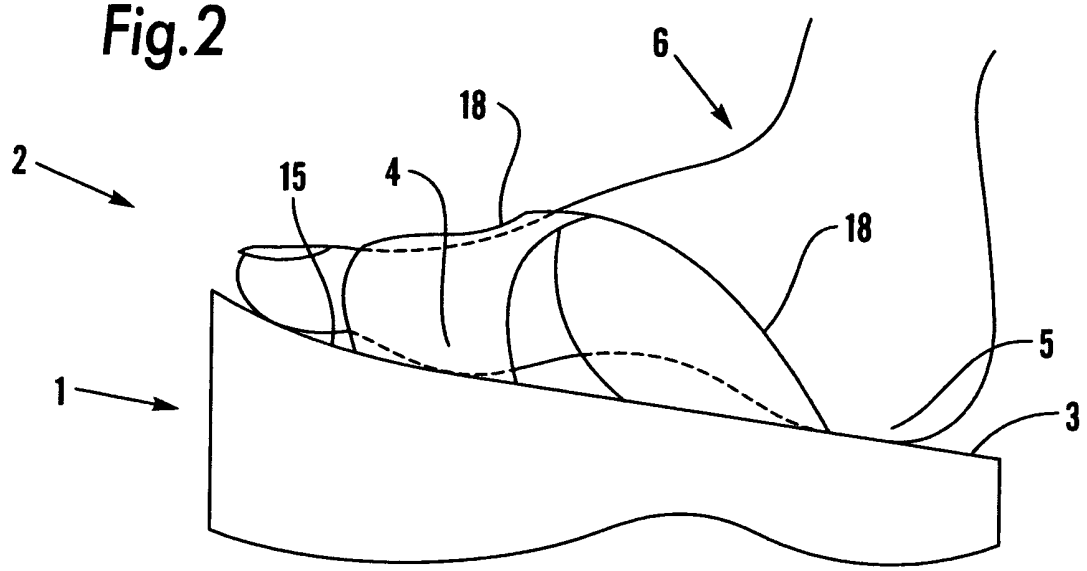


Fig.3

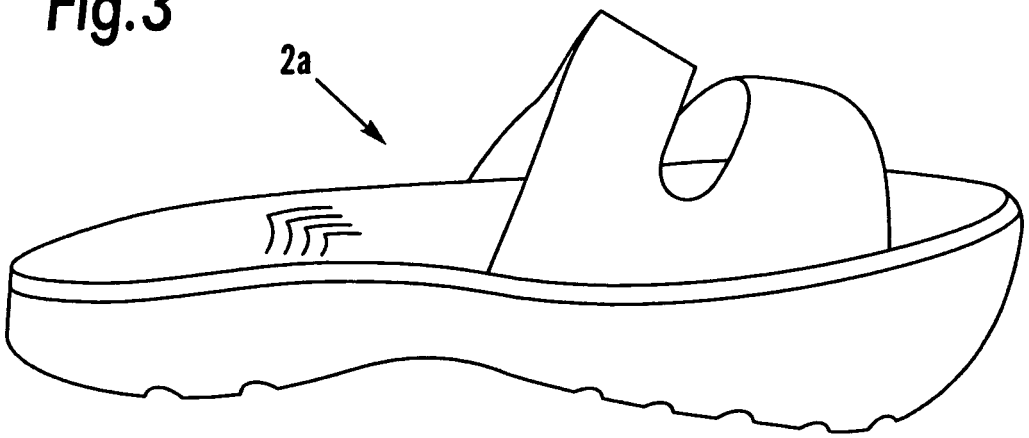


Fig.4

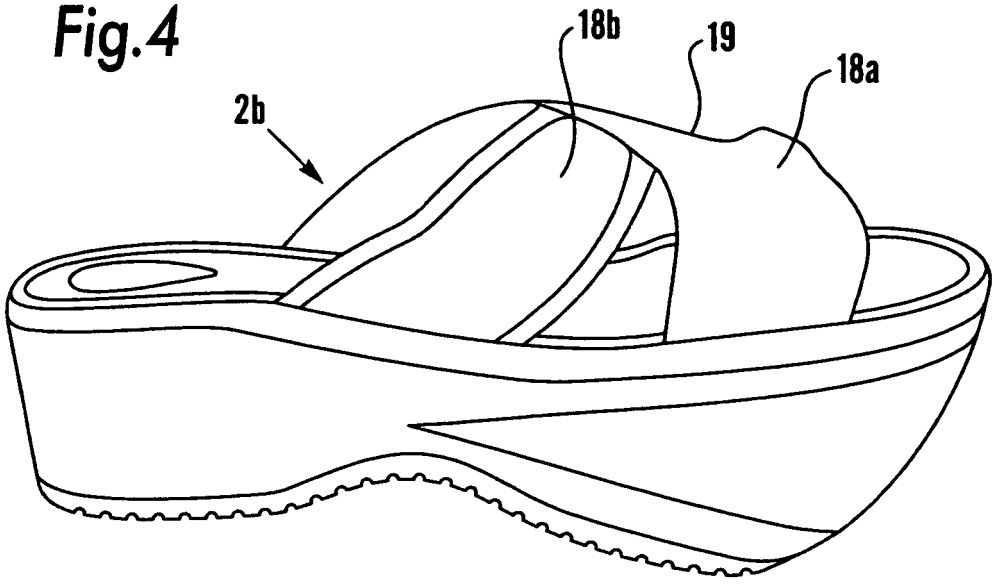


Fig.5

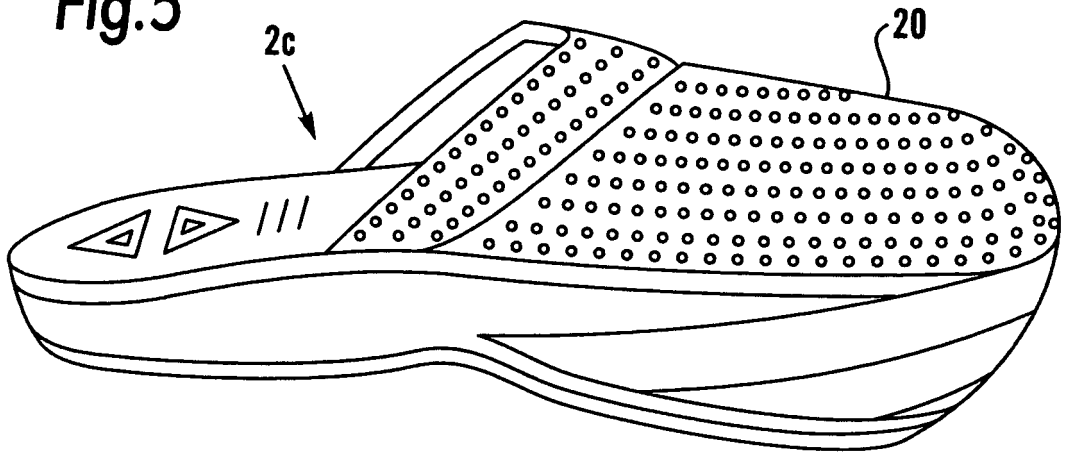


Fig.6

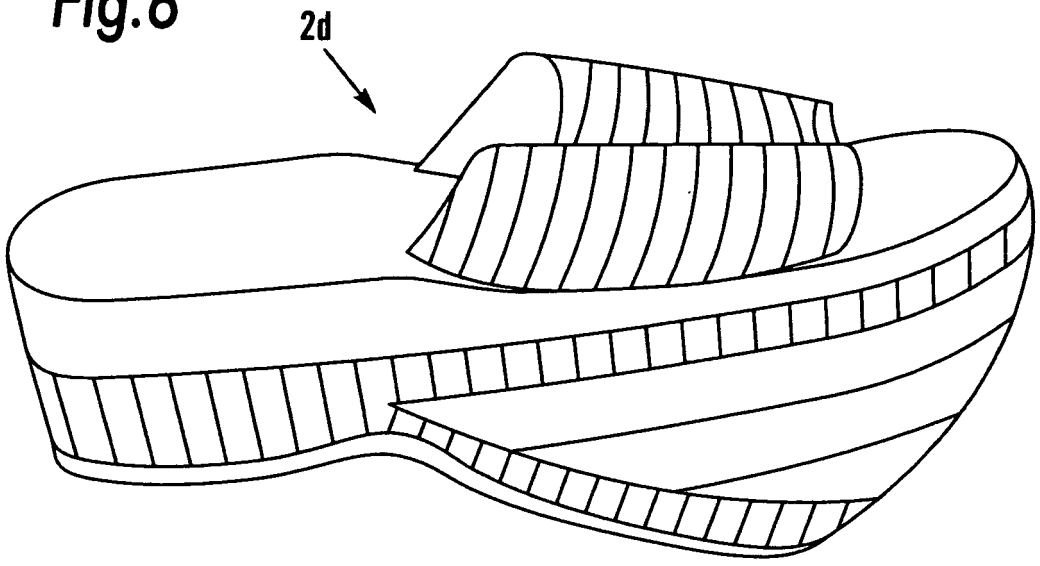


Fig.7

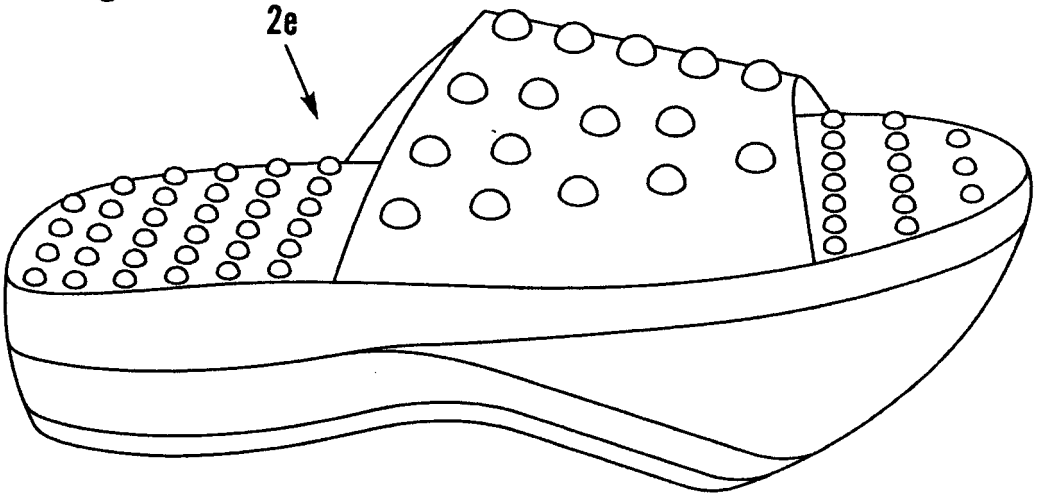


Fig.8

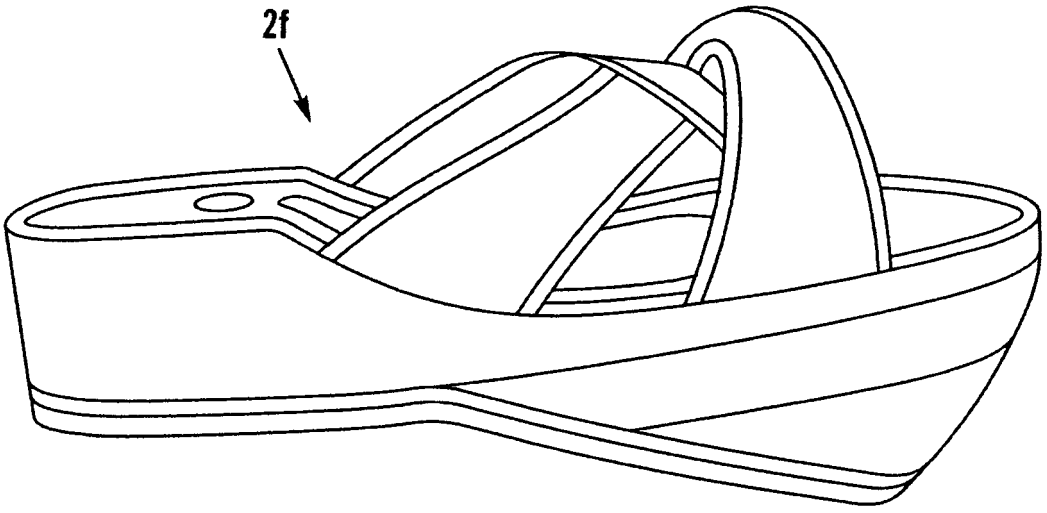


Fig.9

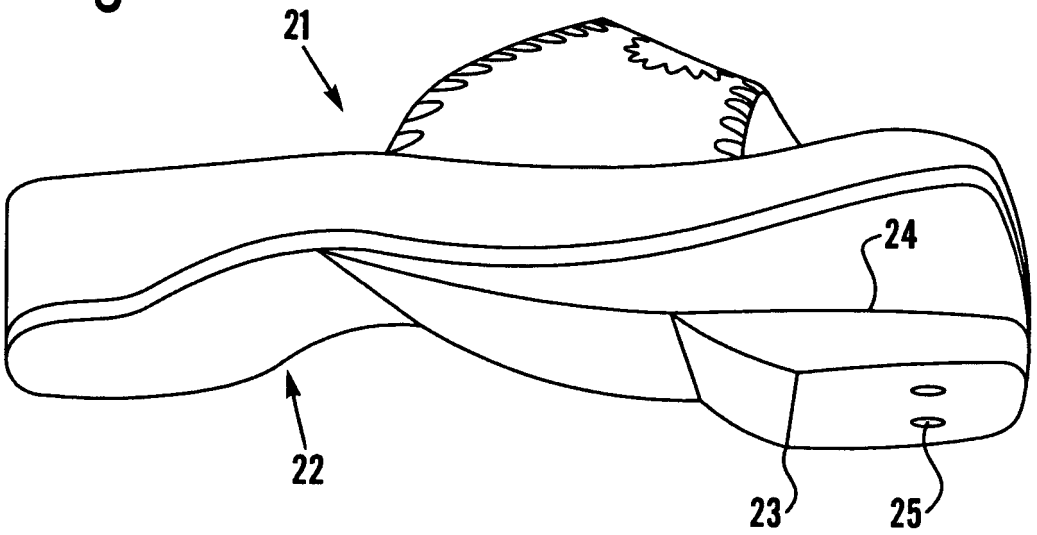
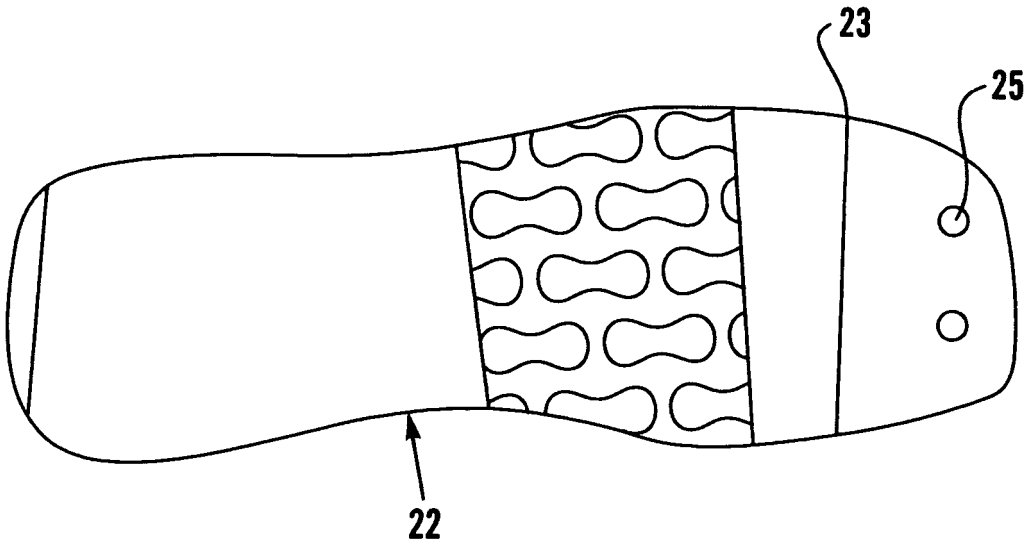


Fig.10



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EUROPEAN SEARCH REPORT

Application Number
EP 07 10 9263

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X Y	JP 2002 065310 A (ASAHI TSUSHO KK) 5 March 2002 (2002-03-05) * abstract; figure 1 *	1,3-5, 7-10,12 6	INV. A43B5/00 A43B13/14
Y	US 5 507 106 A (FOX MARCUS [US]) 16 April 1996 (1996-04-16) * column 4, lines 45-49; figures *	6	
X Y	JP 2004 242988 A (LIFE 21 KK) 2 September 2004 (2004-09-02) * abstract; figures 1-5 *	1,7-10, 12 11	
Y	JP 09 000302 A (MOTO RIEKO) 7 January 1997 (1997-01-07) * figures *	11	
X	JP 2004 016797 A (NAKADA HARUTOSHI) 22 January 2004 (2004-01-22) * page 2, paragraph 1; figures 1,6 *	1,7-9,12	
X	US 2 769 252 A (MONIER ALICE E) 6 November 1956 (1956-11-06) * column 2, lines 19-54; figures *	1,8-10, 12	TECHNICAL FIELDS SEARCHED (IPC) A43B
X	JP 57 206402 A (GOTOU TADAO) 17 December 1982 (1982-12-17) * figure *	1,8-10, 12	
X	US 6 131 315 A (FRYE NANCY C [US] ET AL) 17 October 2000 (2000-10-17) * column 7, lines 1-42; figures 7-9,3 *	1-5,7-12	
X	DE 198 54 979 A1 (KICKZ SPORTARTIKEL UND WARENVE [DE]) 31 May 2000 (2000-05-31) * column 4, lines 3-13; figures *	1,2, 8-10,12, 13	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	19 September 2007	Herry, Manuel

CATEGORY OF CITED DOCUMENTS

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19-09-2007

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 2002065310 A	05-03-2002	NONE	
US 5507106 A	16-04-1996	NONE	
JP 2004242988 A	02-09-2004	NONE	
JP 9000302 A	07-01-1997	NONE	
JP 2004016797 A	22-01-2004	NONE	
US 2769252 A	06-11-1956	NONE	
JP 57206402 A	17-12-1982	NONE	
US 6131315 A	17-10-2000	NONE	
DE 19854979 A1	31-05-2000	NONE	

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