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(54) Sports shoe, particularly for performing stunts

(57) A sports shoe which is particularly used in the practice of stunts such as the so-called "grinding". In the plantar arch region of the sole of the shoe a recess is provided which can be closed by means of a plate (6) having rounded sides (7) and at least one recess for rollers (12) which are associated thereat so as to move freely and partially protrude from the plate. The shoe accordingly allows both to walk and to perform the practice of "grinding".

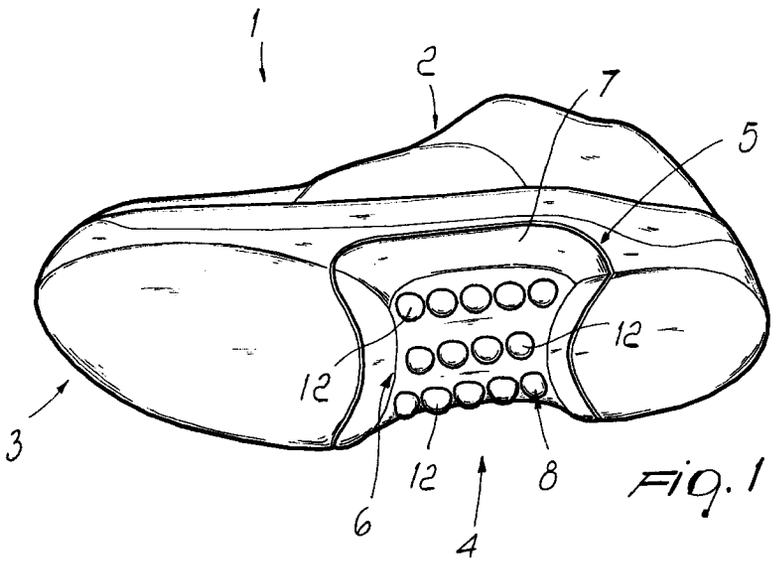

Fig. 1

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Description

[0001] The present invention relates to a sports shoe particularly usable for stunts such as the so-called "grinding", which essentially consists in jumping on, for example, handrails or low walls, and sliding transversely on their top.

[0002] This practice is currently performed by using, in particular, skates with wheels arranged mutually in-line at a frame which is usually essentially U-shaped: for this purpose, the skater jumps onto, for example, a handrail and arranges the wheel supporting frame transversely to said handrail, letting the support slide on the handrail.

[0003] A first considerable drawback is the fact that the wheel support is subjected to rapid wear which is only partly limited by connecting the wings of the support with a plate, which can be replaced once worn.

[0004] The second drawback is that this practice is highly dangerous, since it is performed with an unstable balance and in case of a fall the user cannot regain his balance on impact with the ground owing to the presence of the wheels.

[0005] Finally, it is noted that in the prior art the practice of grinding is performed by sliding: accordingly, it is subjected to a sliding-type friction which in any case slows down the gliding action of the skate.

[0006] US-5,388,350 discloses a skating shoe wherein the sole has, along its entire longitudinal extension, a plurality of transverse rollers which are mutually equidistant and are interposed between a front pad and a rear pad which allow braking.

[0007] The above skate suffers some of the above mentioned drawbacks, worsened by the fact that the large number of rollers used makes it troublesome to perform lateral steering owing to the intense friction generated with the ground, which allows to use the shoe only with respect to a given travel direction.

[0008] US-4,076,263 discloses a skate composed of a shoe below which there is a frame with which balls are associated in the front and rear regions and protrude partially below said frame.

[0009] A region is accordingly formed in the interspace between the two balls, approximately below the plantar arch of the foot, at which the skater can practice grinding; however, this structure entails rapid wear of the frame owing to sliding thereon.

[0010] US-4,691,453 discloses a shoe for roller skates which is essentially constituted by an upper associated with a sole which has, only at the heel and toe regions, a plurality of balls protruding below the sole.

[0011] This shoe does not allow the user to use it for normal walking and cannot be used effectively for grinding, because the region of the sole affected, for example, by the handrail which acts upon the plantar arch region would wear considerably and quickly.

[0012] WO-98/03092 discloses a shoe constituted by an upper and a sole and having, a curved plate associated with the plantar arch region, below the sole.

[0013] Although this shoe allows walking and grinding, it still has some drawbacks, such as the rapid deterioration of the plate during grinding, which requires its continuous replacement, thus generating an additional cost for the user.

[0014] Again for cost-related reasons, it is not feasible to use a plate made of a material which is highly resistant to abrasion, because the cost of the plate would be an important factor in the overall cost of the shoe. Furthermore, since the lateral surface of the plate is affected during grinding, the forces applied to the plate bear on the points where it is coupled to the sole, which must be reinforced appropriately, thus creating possible localized very hard regions which can lead to a decrease in comfort for the user during normal walking.

[0015] Furthermore, the sliding at the surface of the plate can lead to a considerable and sudden heating thereof due to the large surface in contact, for example, with the handrail on which grinding is performed.

[0016] An aim of the present invention is to solve the mentioned technical problems, eliminating the drawbacks of the cited prior art by providing a shoe which can be used both for normal walking and to perform grinding in safety and comfort for the user.

[0017] An object is to provide a shoe which allows optimum execution of the practice of grinding, improving performance and generating limited friction.

[0018] A further object is to provide a shoe which is not subject to considerable wear during the practice of grinding.

[0019] A further object is to provide a shoe which allows the user to improve directional behavior.

[0020] A further object is to provide a shoe which allows to perform grinding at angles other than transversely.

[0021] A further object is to provide a shoe which allows the user to promptly regain his balance if he/she falls while grinding.

[0022] A further object is to provide a shoe which is structurally simple and has low manufacturing and maintenance costs.

[0023] This aim, these objects and others which will become apparent hereinafter are achieved by a sports shoe, particularly for performing stunts, comprising a sole, characterized in that said sole comprises at the plantar arch region, at least one recess which can be closed by means of a first plate provided with at least one seat for a plurality of rolling members which at least partially protrude externally to said first plate.

[0024] Further characteristics and advantages of the invention will become apparent from the detailed description of a particular embodiment, illustrated in the accompanying drawings, wherein:

Fig. 1 is a perspective view of the shoe, taken from below;

Fig. 2 is a sectional view, taken along a first plane which lies transversely to said shoe at elements for

locking said plate;

Fig. 3 is a sectional view, taken along a second plane which lies transversely to said shoe at said balls;

Fig. 4 is a perspective view of a shoe according to a further aspect of the invention;

Fig. 5 is a sectional view taken along the plane V-V of Fig. 4;

Fig. 6 is a bottom exploded partial view of the shoe of Figs. 4 and 5.

[0025] With reference to Figures 1-3, 1 designates a sports shoe which can be used in particular to perform stunts such as the so-called "grinding".

[0026] The shoe comprises an upper 2 below which a sole 3 is associated.

[0027] At the sole, and particularly in the plantar arch region 4, there is a cavity 5 which can be closed by means of a complementarily shaped first plate 6.

[0028] The first plate has, in transverse cross-section, an undulated shape so as to form longitudinal lateral edges 7 and 8 which are rounded not only in order to achieve optimum blending of the upper 2 with the sole 3 but also in order to allow, during grinding, for example, the handrail not to interact directly with the sole or upper.

[0029] The first plate 6 can be detachably associated at the cavity 5 by virtue of suitable connecting means, such as for example screws 9 which are associated with the sole 3 and the shank of which is rotatably associable at second seats formed in the first plate 6.

[0030] A second plate 10 can be interposed between the sole 3 and the first plate 6. The second plate 10 makes the entire structure more rigid and resistant to the stresses applied during grinding.

[0031] Third through seats 11 are formed at the surface of the first plate 6 that is directed toward the ground. The seats preferably have a circular plan shape and are suitable to accommodate balls 12.

[0032] Advantageously, the third seats 11 have a diameter which is constant starting from the end that is directed toward the sole 3 and tapers at the end 13 that is directed toward the ground.

[0033] This allows to insert the balls 12, which partially protrude externally below the first plate 6, as shown in Figures 1, 2 and 3.

[0034] The third seats 11 together with the balls 12, also accommodate inserts 14 which have a cylindrical shape and are arranged in said third seats starting from their end that lies adjacent to the second plate 10.

[0035] The inserts 14 are preferably made of antifriction material, so that the friction generated during grinding between the lower surface of said inserts and the facing surface of the ball is as low as possible.

[0036] This embodiment allows, during grinding, to make the balls interact directly with for example the handrail or low wall. The balls allow the user to glide in an optimum manner because essentially rolling friction occurs.

[0037] Furthermore, the fact that the balls roll prevents the gradual wear of the first plate, thus ensuring a longer life of the shoe and a lower expense over time.

[0038] Furthermore, the balls allow to achieve better directional behavior of the gliding action, which can be performed not only in a transverse position but also in a position which is oblique with respect to the longitudinal axis of the shoe.

[0039] With reference to Figures 4-6, 101 designates a sports shoe, according to a further aspect of the invention.

[0040] The shoe comprises an upper 102 below which a sole 103 is associated.

[0041] At said sole, and particularly in the plantar arch region 104, there is a longitudinal recess 105 which can be closed by means of a complementarily shaped plate 106.

[0042] The recess 105 has, in transverse cross-section, an undulated shape which is suitable to accommodate complementarily shaped cylindrical or tubular elements 107 which protrude longitudinally from the surface of the plate 106 which can be arranged at the recess 105.

[0043] Said cylindrical or tubular elements 107 have an axial cavity which forms a first seat 108 for rollers 109 which can be arranged thereat so as to rotate freely.

[0044] The plate 106 is detachably associated at the recess 105 by way of connection means, such as for example screws 110 which can be arranged at second seats 113 formed in the sole 103, the shank 112 of said screws being associable with complementarily threaded third seats 111 formed at the plate 106.

[0045] The screws 110 are inserted from the inside of the upper 102, as shown in Figure 5.

[0046] The plate 106 has rounded longitudinal edges 114a and 114b in order to achieve not only optimum blending with the sole 103 of the upper 102 but also to prevent, during the practice of grinding, for example the handrail from not interacting directly with said sole or upper.

[0047] The shape of the tubular elements 107 is such that a longitudinal opening 116 is provided thereon at the surface 115 of the plate 106 and allows the corresponding roller to partially protrude outside said plate, as shown in Figure 5.

[0048] This embodiment allows, during the practice of grinding, to make the rollers 109 interact directly with, for example, the handrail or low wall. The rollers allow the user to slide in an optimum manner, since the friction coefficient is very low because there is an essentially rolling friction.

[0049] Furthermore, the fact that the rollers rotate avoids gradual wear of the plate, thus ensuring a longer life of the shoe and a lower expenditure over time.

[0050] At least one ridge 117 can be provided on at least one side of the sole 103. The ridge protrudes laterally with respect to the upper 102 and acts as a device

for controlling the advancement speed; by inclining the boot transversely, the user can in fact cause the interaction of the ridge 117 with the handrail or railing and reduce the speed.

[0051] It has thus been found that the invention has achieved the intended aim and objects, a shoe having been provided which can be used both for normal walking and for the specific practice of grinding.

[0052] The user can practice grinding in safety, since if he/she loses his/her balance or falls he can regain his balance simply by resting the shoe on the ground, achieving optimum and safe grip by the fact that the sole is of the conventional type for walking in the tip and heel regions.

[0053] The practice of grinding is also greatly facilitated thanks to the presence of the balls in the plantar arch region, which by generating a rolling friction allow to achieve a higher speed of execution and therefore to improve performance.

[0054] Furthermore, since contact with, for example, the handrail or step or low wall is entrusted to the balls, there is no wear of the first plate except possibly at the longitudinal edges 7,8,114a,114b.

[0055] The removability of the first plate allows to use an embodiment with balls which are freely chosen in terms of dimensions and number.

[0056] The disclosures in Italian Utility Model Applications No. TV98U000014 and TV99U000012 from which this application claims priority are incorporated herein by reference.

[0057] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A sports shoe, particularly for performing stunts, comprising a sole, characterized in that said sole comprises, at the plantar arch region, at least one recess which can be closed by means of a first plate provided with at least one seat for a plurality of rolling members which at least partially protrude externally to said first plate.

2. The shoe according to claim 1, characterized in that said recess has, in a transverse cross-section, an undulated configuration so as to form rounded longitudinal lateral edges which form a protection and a blending region for said sole.

3. The shoe according to claim 1, characterized in that said first plate is detachably associated at said cavity by connecting means, such as screws which are associated with said sole and whose shank is rotatably associable at suitable second seats formed in said first plate.

4. The shoe according to one or more of the preceding claims, characterized in that a second plate can be interposed between said sole and said first plate and is suitable to make the entire structure more rigid and resistant to stresses.

5. The shoe according to one or more of the preceding claims, characterized in that third through seats are formed at the ground facing surface of said first plate, said seats having a circular plan shape and being suitable to accommodate said rolling members constituted by balls.

6. The shoe according to claim 5, characterized in that said third seats have a diameter which is constant starting from the end that is directed toward said sole and tapers at the end that is directed toward the ground so as to allow the insertion of said balls, which at least partially protrude externally below said first plate.

7. The shoe according to claim 6, characterized in that said third seats also accommodate inserts which have a cylindrical shape and are arranged in said third seats starting from their end that lies adjacent to said second plate.

8. The shoe according to claim 7, characterized in that said inserts are made of antifriction material so that the friction generated during grinding between the lower surface of said inserts and the facing surface of one of said balls is as low as possible.

9. The shoe according to claim 1, characterized in that said at least one cavity has, in a transverse cross-section, an undulated configuration which is suitable to accommodate complementarily shaped cylindrical members which at least partially protrude longitudinally from the surface of said plate arranged at said recess.

10. The shoe according to claim 9, characterized in that each of said cylindrical members has an axial cavity which forms at least one first seat for rollers which can be arranged thereat so as to move freely.

11. The shoe according to claim 10, characterized in that said plate is detachably associated at said at least one recess by means of screws which can be arranged at second seats formed in said sole, the shank of said screws being associated with complementarily threaded third seats formed at said plate.

12. The shoe according to one or more of the preceding

claims, characterized in that said plate has rounded longitudinal edges so as to provide optimum blending and protection for said sole and said upper.

13. The shoe according to one or more of the preceding claims, characterized in that the configuration of each of said cylindrical member is such that at the surface of said plate that is not directed toward said sole there is at least one longitudinal opening in said cylindrical members which allows the corresponding roller to protrude partially outside said plate.

14. The shoe according to one or more of the preceding claims, characterized in that on at least one side of said sole there is at least one ridge which protrudes laterally with respect to an upper of said shoe and acts as speed control device.

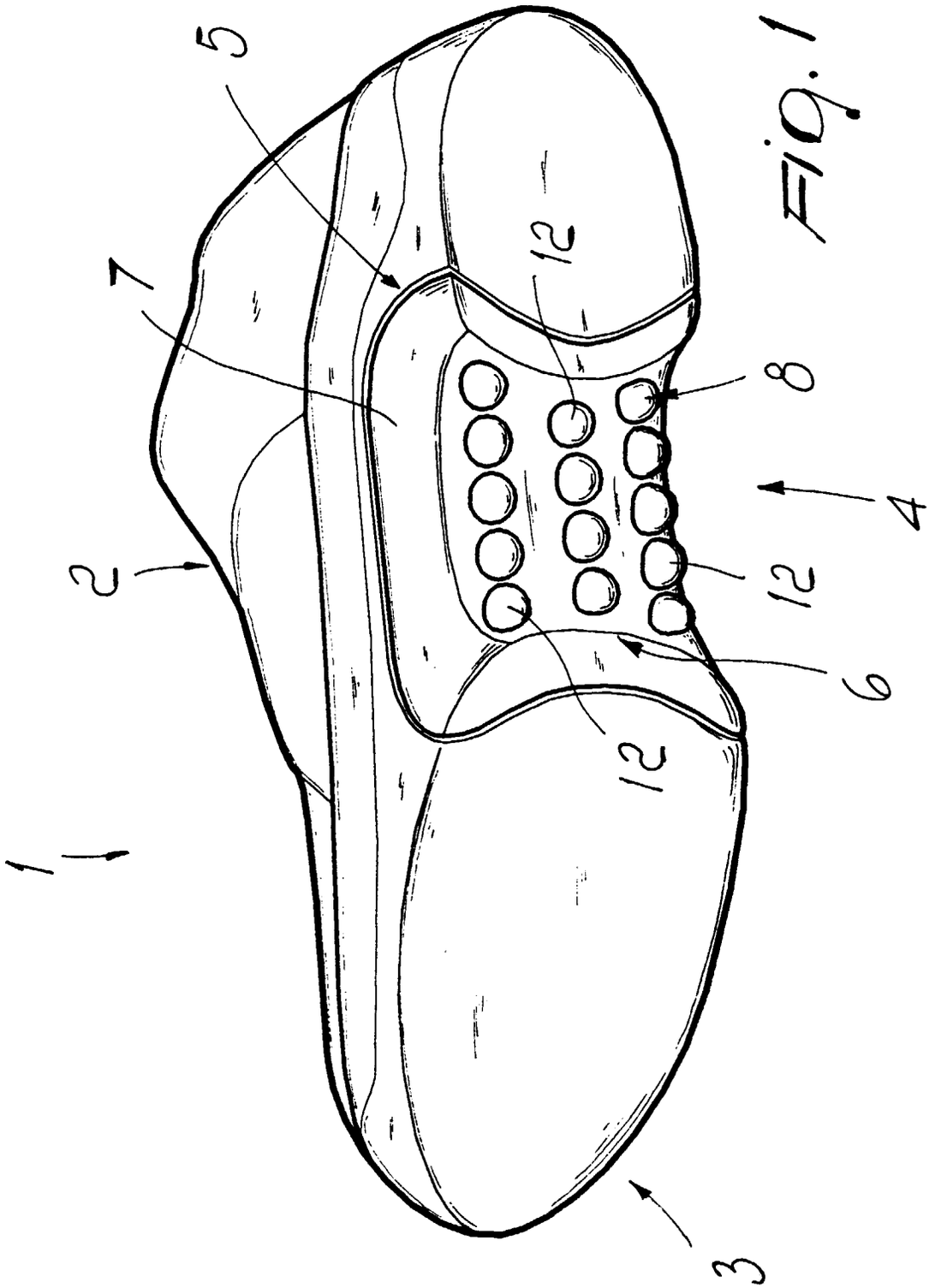


Fig. 1

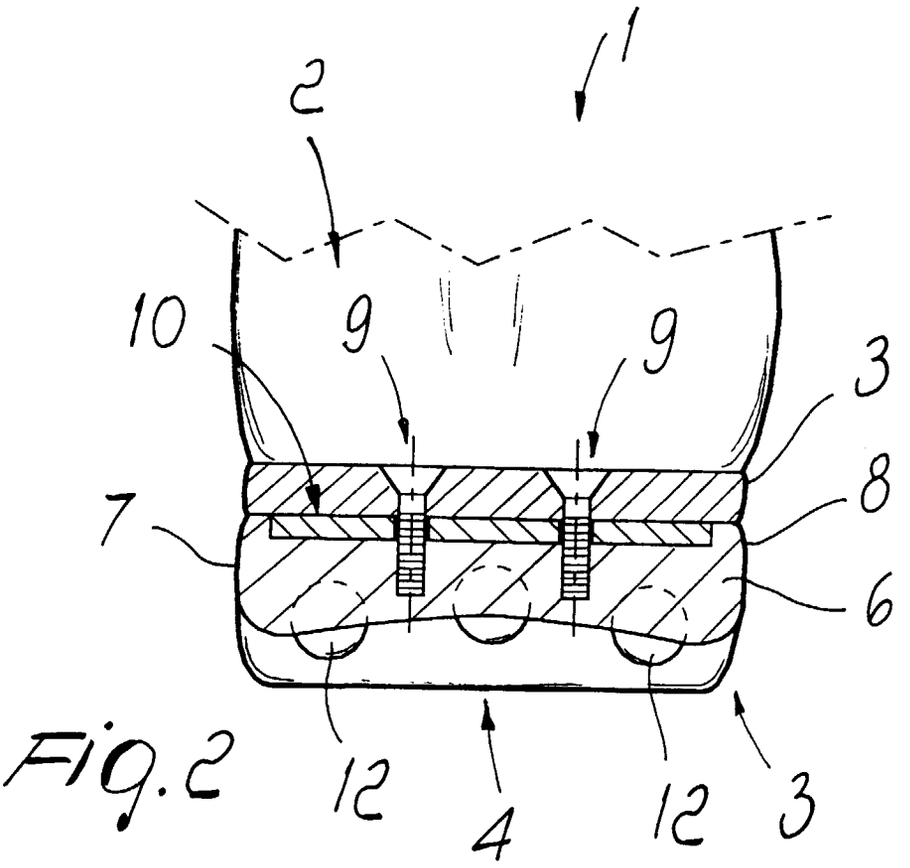


FIG. 2

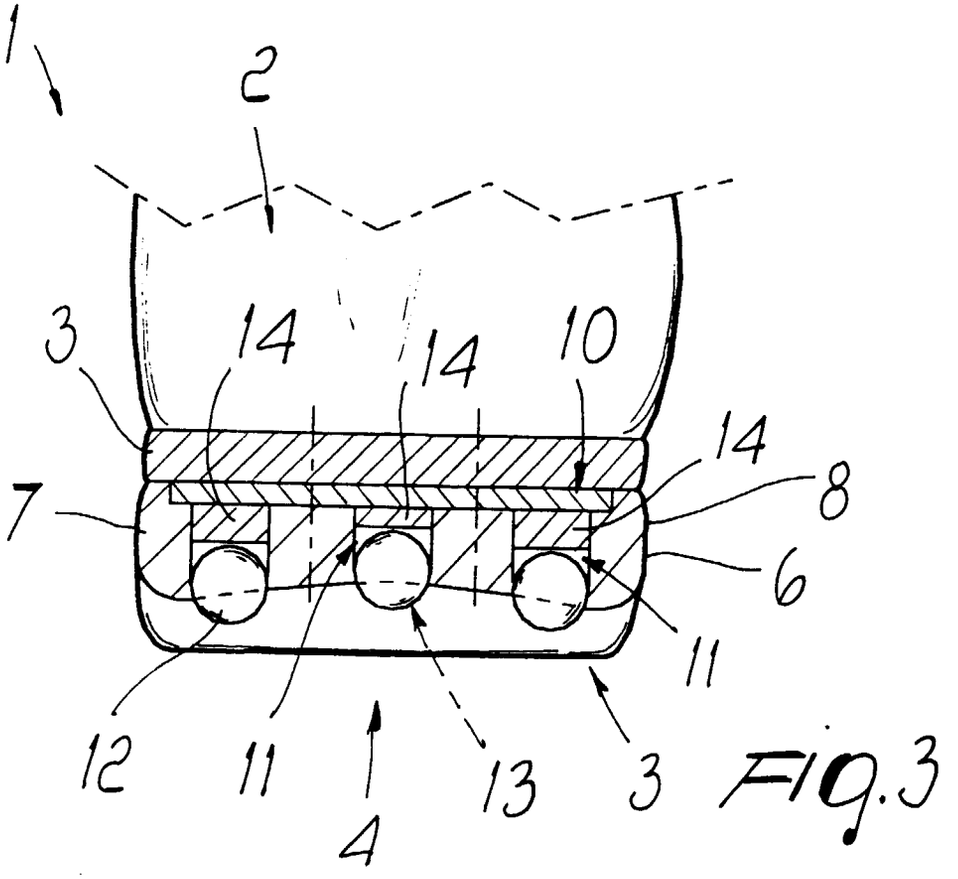
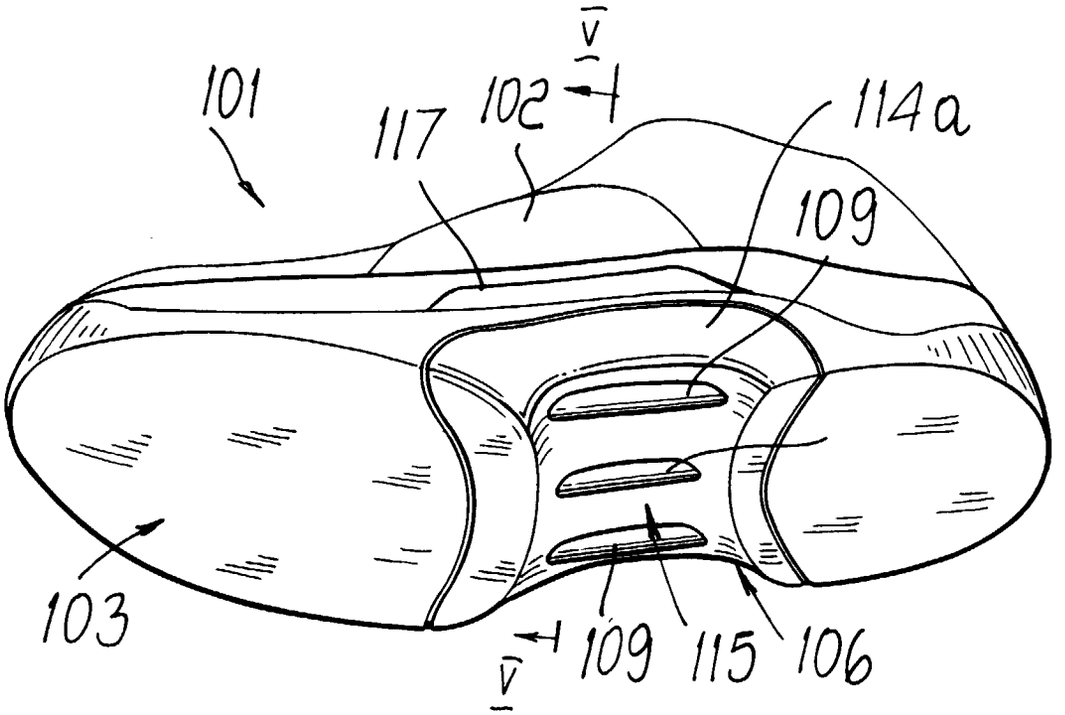


FIG. 3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114a
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Fig. 4

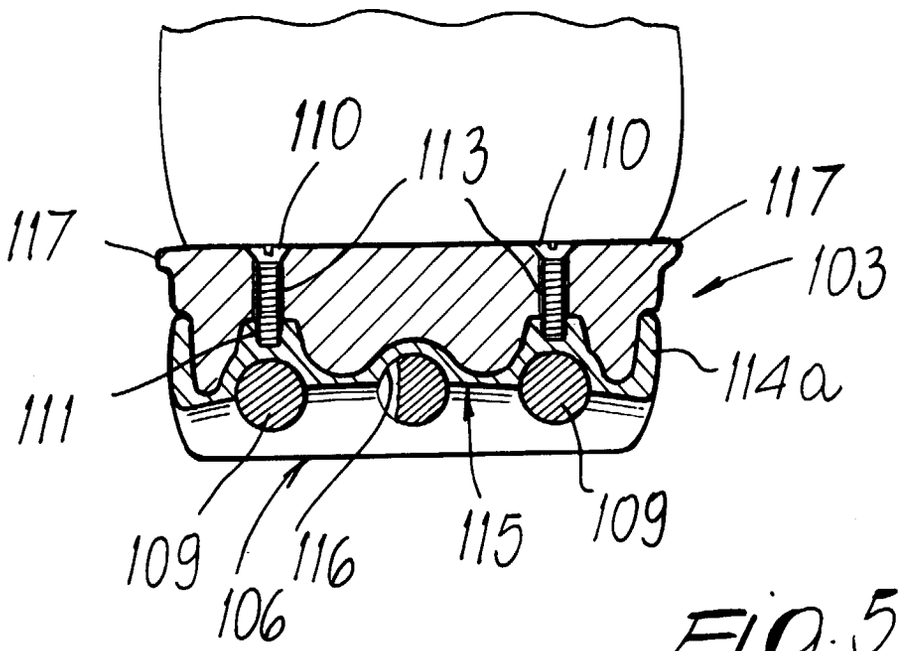
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Fig. 5

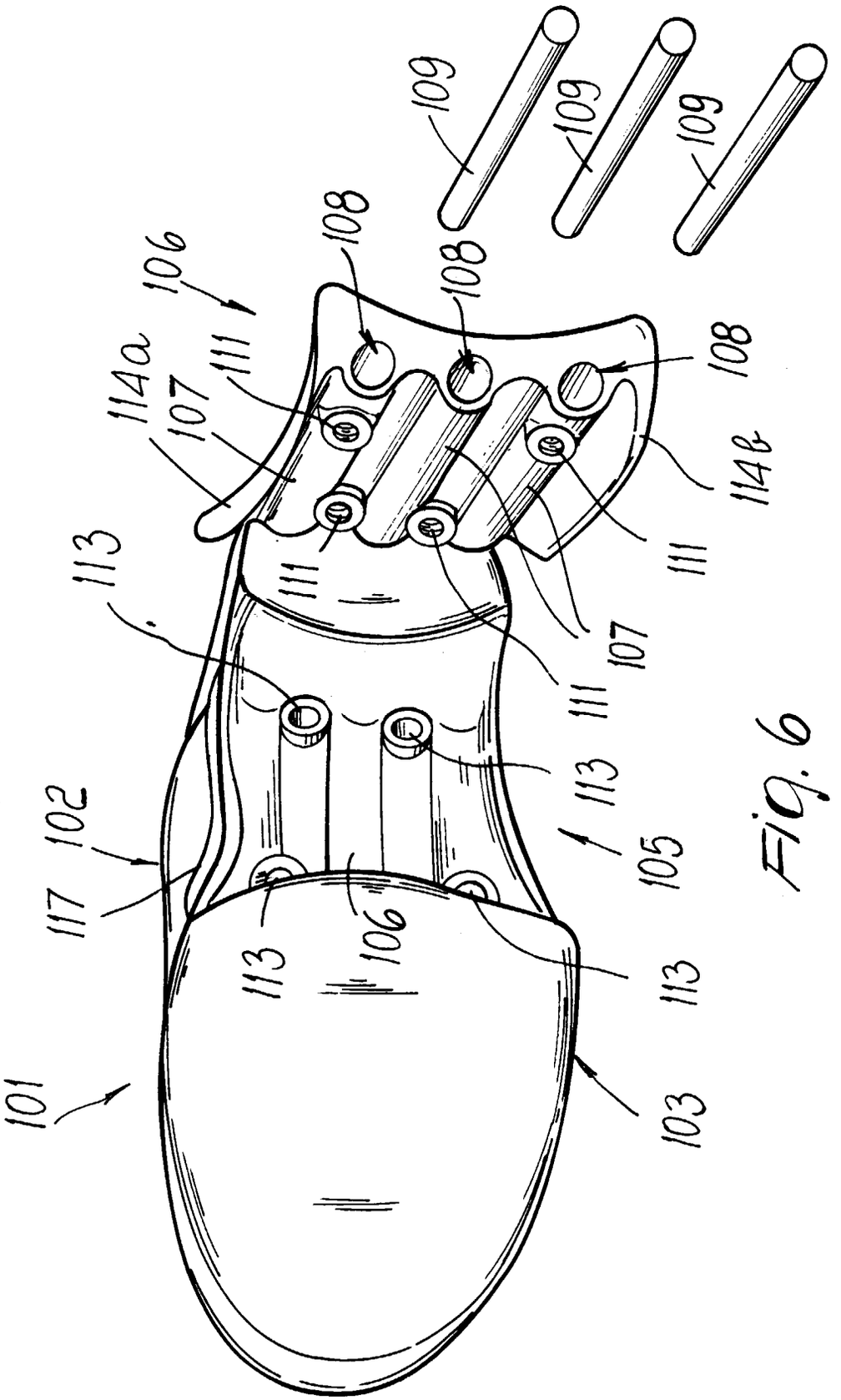
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Fig. 6