A rotary foot device and shoe arrangement includes a mounting structure formed integral with the sole of a shoe, and a rotary foot device fastened to the mounting structure for enabling the shoe to be rotated with the mounting structure relative to a part of the rotary foot device on the floor by the user.
ROTARY FOOT DEVICE AND SHOE ARRANGEMENT

BACKGROUND OF THE INVENTION

[0001] The present invention relates shoes and, more particularly, to a rotary foot device and shoe arrangement, which enables the user to perform a twisting action easily when dancing.

[0002] Dancing is a favorite recreational activity to many young people. When dancing, one may perform the action of twisting. However, due to high friction resistance between the sole of the shoe and the floor, one tends to sprain the ankle or to fall to the floor when twisting the body.

SUMMARY OF THE INVENTION

[0003] The present invention has been accomplished under the circumstances in view. It is one object of the present invention to provide a rotary foot device and shoe arrangement, which enables the user to perform a twisting action easily when dancing. It is another object of the present invention to provide a rotary foot device and shoe arrangement, which fits any of a variety of shoes. According to the present invention, the rotary foot device and shoe arrangement includes a mounting structure provided at the bottom side of a shoe, and a rotary foot device fastened to the mounting structure for enabling the shoe to be rotated with the mounting structure relative to a part of the rotary foot device on the floor by the user. In one example of the present invention, the mounting structure is formed integral with the sole of the shoe. In another example of the present invention, the mounting structure is formed integral with the bottom sidewall of an adjustable shoe sheath that fits any of a variety of shoes.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] FIG. 1 shows an application example of a rotary foot device and shoe arrangement according to the present invention.

[0005] FIG. 2 is an exploded view of the rotary foot device and shoe arrangement according to the present invention.

[0006] FIG. 3 is a sectional assembly view of the rotary foot device and shoe arrangement according to the present invention.

[0007] FIG. 4 is a sectional assembly view of an alternate form of the rotary foot device and shoe arrangement according to the present invention.

[0008] FIG. 5 is a schematic drawing showing the shoes respectively twisted relative to the rubber cup of the respective rotary foot device.

[0009] FIG. 6 illustrates another application example of the rotary foot device and shoe arrangement according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0010] Referring to FIGS. 1 through 3, the sole 2 has a bottom recess 21 near the front side, and a fixed nut 22 fixedly provided at the center of the bottom recess 21. A rotary foot device 1 is fastened to the nut 22 in the bottom recess 21. The rotary foot device 1 comprises an axle bearing 11, a rubber cup 12, a bushing 13, a screw bolt 14, and a plug cap 15. The rubber cup 12 defines a circular receiving chamber 121. The axle bearing 11 is press-fitted into the circular receiving chamber 121 of the rubber cup 12, having a top protruded portion 111 protruded over the topmost edge of the rubber cup 12 and adapted to keep the rubber cup 12 away from the bottom wall of the bottom recess 21, for enabling the rubber cup 12 to be rotated in the bottom recess 21 of the sole 2. The bushing 13 is inserted into the center through hole 122 of the rubber cup 12. The screw bolt 14 is inserted through the bushing 13 and the axle bearing 11 and then threaded into the nut 22 to secure the rubber cup 12, the axle bearing 11 and the bushing 13 to the inside of the bottom recess 21 of the sole 2. After installation of the screw bolt 14, the plug cap 15 is fastened to the center through hole 122 of the rubber cup 12.

[0011] FIG. 4 shows an alternate form of the present invention. According to this alternate form, a packing plate 16 is tightly sandwiched in between the axle bearing 11 and the rubber cup 12, and covered over a part of the periphery of the center through hole of the axle bearing 11 to prevent direct contact of the bushing 13 with the axle bearing 11, enabling the rubber cup 12 to be rotated with the outer race of the axle bearing 11.

[0012] Referring to FIG. 5 and FIGS. 2 through 4 again, the bottom side of the rubber cup 12 protrudes over the bottom side of the sole 2. When the user shifts the center of gravity of the body to the rotary foot device 1 and then twists the leg, the rubber cup 12 is positively positioned on the floor and, the shoe is rotated back and forth with the leg and the inner race of the axle bearing 11 and the screw bolt 14 relative to the rubber cup 12.

[0013] FIG. 6 shows another alternate form of the present invention. According to this alternate form, the rotary foot device 1 is installed in the bottom wall of a shoe sheath 3 near its front side. The shoe sheath 3 has an adjustable belt 31 that can be adjusted, enabling the shoe sheath 3 to fit different shoes.

[0014] Although particular embodiments of the invention have been described in detail for purposes of illustration, various modifications and enhancements may be made without departing from the spirit and scope of the invention. Accordingly, the invention is not to be limited except as by the appended claims.

What the invention claimed is:

1. A rotary foot device and shoe arrangement comprising:
   a mounting structure provided at the bottom side of a shoe, said mounting structure comprises a circular recess and a fixed nut fixedly provided in said circular recess; and
   a rotary foot device fastened to said mounting structure for enabling the shoe to be rotated with said mounting structure relative to a part of said rotary foot device on the floor by the user, said rotary foot device comprising an axle bearing, a bushing mounted in said axle bearing, a screw bolt threaded into said fixed nut to secure said bushing and said axle bearing to said fixed nut, a rubber cup fixedly covered on the periphery of said axle bearing and adapted to support said axle bearing on the
floor for enabling the user to rotate the shoe back and
force on said rubber cup, said rubber cup having a
center through hole for the passing of said screw bolt,
and a bushing mounted between said screw bolt and
said axle bearing.

2. The rotary foot device and shoe arrangement as claimed
in claim 1 wherein said rotary foot device further comprises
a packing plate tightly sandwiched in between said axle
bearing and said rubber cup to prevent direct contact
between said bushing and said axle bearing.

3. The rotary foot device and shoe arrangement as claimed
in claim 1 wherein said rotary foot device further comprises
a plug cap press-fitted into the center through hole of said
rubber cup.

4. The rotary foot device and shoe arrangement as claimed
in claim 1 wherein said mounting structure is formed
integral with the sole of the shoe.

5. The rotary foot device and shoe arrangement as claimed
in claim 1 wherein said mounting structure is formed
integral with a shoe sheath worn on the shoe.

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