May 10, 1932. F. D. REYNOLDS 1,857,975

SHOE PLATE

Filed Oct. 23, 1930

Fig. 1.

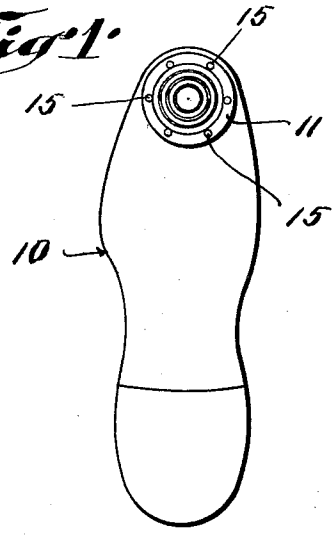


Fig. 2.

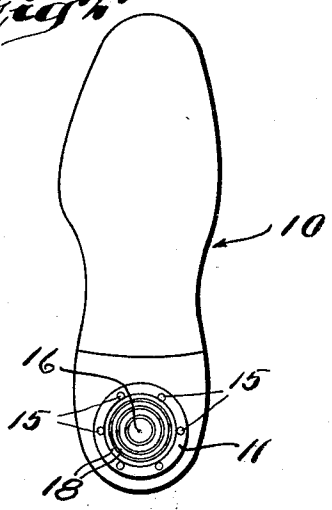


Fig. 3.

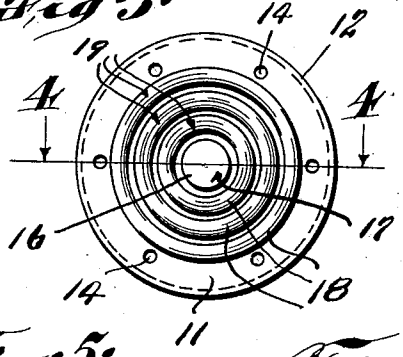


Fig. 4.

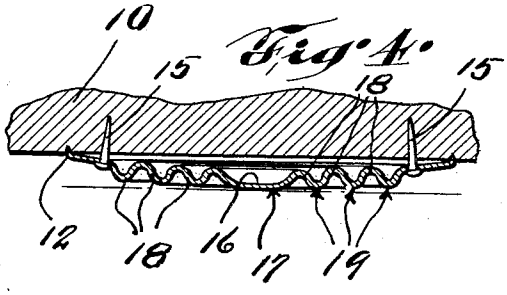


Fig. 5.

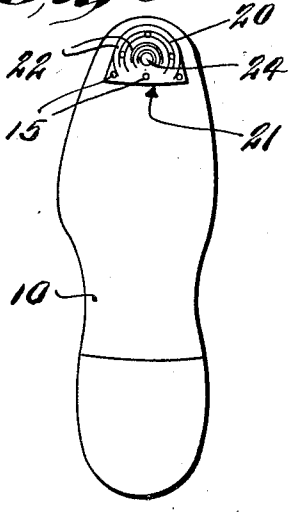


Fig. 6.

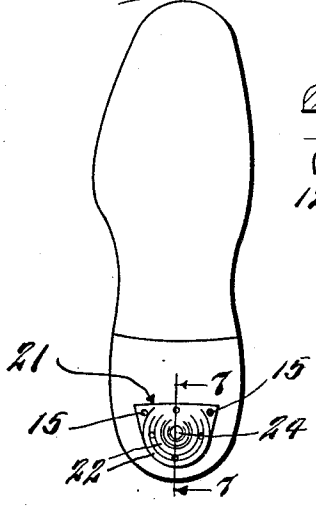
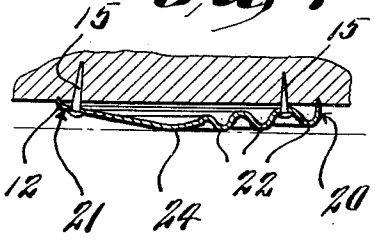


Fig. 7.



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UNITED STATES PATENT OFFICE

FREDERICK D. REYNOLDS, OF ST. LOUIS, MISSOURI

SHOE PLATE

Application filed October 23, 1930. Serial No. 490,569.

This invention relates to new and useful improvements in toe and heel plates for shoes.

The objects of the present invention are to provide a single piece shoe plate which can be attached either to the toe or the heel of the shoe and which is of simple but durable construction and can be economically manufactured.

Further objects of the invention are to provide a shoe plate stamped from sheet metal and provided with a plurality of concentrically disposed circular corrugations and with a central convex portion, thereby eliminating sharp edges and corners and preventing injury to the floor.

Other objects of the invention are to provide a shoe plate of the class described which is preferably formed of sheet steel stamped to proper shape, thereby reducing the weight to minimum so that the plate may be applied to shoes for street wear and permitting nailing of the plate in position without danger of breaking the plate.

With these and other objects in view, my invention consists in certain novel features of construction and arrangement of parts, hereinafter more fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a bottom view of a shoe with my improved shoe plate attached to the toe portion thereof.

Figure 2 is a similar view showing my shoe plate attached to the heel thereof.

Figure 3 is an enlarged bottom view of my improved shoe plate.

Figure 4 is a vertical cross section taken on line 4—4 of Figure 3 and showing the plate attached in position.

Figures 5 and 6 are bottom plan views of a shoe showing a modified form of my improved shoe plate.

Figure 7 is an enlarged vertical cross section taken on line 7—7 of Figure 6.

Heretofore shoe plates have been generally made of cast metal. In this form, the shoe plates have to be comparatively thick, thereby increasing the weight thereof and forming a clumsy appearing article. Where the shoe plates are formed of aluminum in order to reduce the weight they are apt to be broken during the nailing operation.

It is the purpose of my invention to form the shoe plate of sheet steel stamped into proper shape and size so as to provide minimum surface contact between the plate and the floor and at the same time render said plate sufficiently strong to withstand ordinary wear.

Referring by numerals to the accompanying drawings, 10 indicates a shoe to which is applied my improved shoe plate 11 either at the toe portion, as shown in Figure 1, or at the heel portion, as shown in Figure 2. This shoe plate in the preferred form is shown of circular shape having its peripheral edge turned upwardly or flanged as indicated at 12 and provided near its edge with a plurality of openings 14 spaced equidistant about the axis of the shoe plate for receiving nails 15 by means of which said shoe plate is secured in position on the shoe. The center of the plate is formed with a portion 16 which is curved outwardly so as to provide a convex face 17. That portion of the plate intermediate central portion 16 and the spaced apertures 14 is formed with a plurality of concentrically arranged corrugations 18 which are spaced equidistant from each other.

Preferably these corrugations are so arranged that the outwardly presented crown portions 19 of said corrugations are disposed on different horizontal planes relatively to each other so that the distance between said crown portions 19 and the floor surface gradually increases toward the outer edge of said plate. This arrangement insures a minimum amount of surface contact between the plate and the floor and under normal conditions only the central portion 16 is in engagement with the floor, the crown portions 19 being spaced therefrom. Thus the floor engaging surfaces of the plate are rounded thereby facilitating certain dancing movements of the dancers and preventing injury to the floor as no sharp or abrupt edges or projections of the plate come in contact with the floor. The corrugations reinforce the plate so that the latter can be formed of comparatively thin

sheet steel and they also provide a certain amount of resiliency during walking.

In the modified form shown in Figures 5 to 7, the shoe plate 20 instead of being circular is formed with one edge substantially straight as indicated at 21. The corrugations 22 are substantially semi-circular and merge with the straight portion which terminates in the edge 21. A central portion 24 is provided which is substantially the same as the central portion 16 of the preceding form.

My improved shoe plate when attached in position can be used for tap dancing or other forms of dancing and is also suitable for use with shoes for street wear. The plate being made of steel is wear resistant and can be made light in weight and is unbreakable during nailing operations. The corrugations on the plate reduce the surface friction and provide suitable reinforcements for the plate.

I claim:

1. A shoe plate of the class described comprising a single piece of sheet metal stamping having its edge flanged upwardly for engagement with the surface to which it is applied and provided with a central portion having a downwardly presented convex face and a plurality of spaced concentrically disposed corrugations, the convex face of said central portion being disposed on a different horizontal plane with respect to the faces of said corrugated portions, said plate being provided intermediate its outermost corrugation and said flanged edge with a plurality of spaced apertures for receiving attaching nails.

2. A shoe plate of the class described comprising a single piece of sheet metal stamping provided with a plurality of spaced concentrically disposed raised portions having convex faces to eliminate sharp corners, said plate having its peripheral edge formed sharp and turned in a direction opposite to said raised portions for engagement with the surface to which said shoe plate is secured, the central portion being offset with respect to the planes of the other portions to provide a centrally disposed convex face for engaging the floor surface, said plate being provided intermediate its edge and its outermost raised portions with a plurality of spaced apertures for receiving attaching nails.

3. As a new article of manufacture, a shoe plate of the class described comprising a single piece sheet metal stamping having a central portion provided with a convex face and having a plurality of apertures arranged adjacent to its edge, there being a plurality of spaced concentrically disposed corrugations formed in said plate intermediate said central portion and said apertures, the faces of the crown portions of said corrugations being arranged on different horizontal planes with respect to each other and with respect to the convex face of said central portion, whereby said central portion provides a central floor engaging point for said plate, and nails for engaging the apertures of said plate and attaching the latter to the shoe.

In testimony whereof I hereunto affix my signature this 13th day of October, 1930.

FREDERICK D. REYNOLDS.