June 18, 1929. R. BOTTI 1,717,432

ANKLE AND ARCH SUPPORT FOR CHILDREN'S SHOES

Filed July 12, 1928

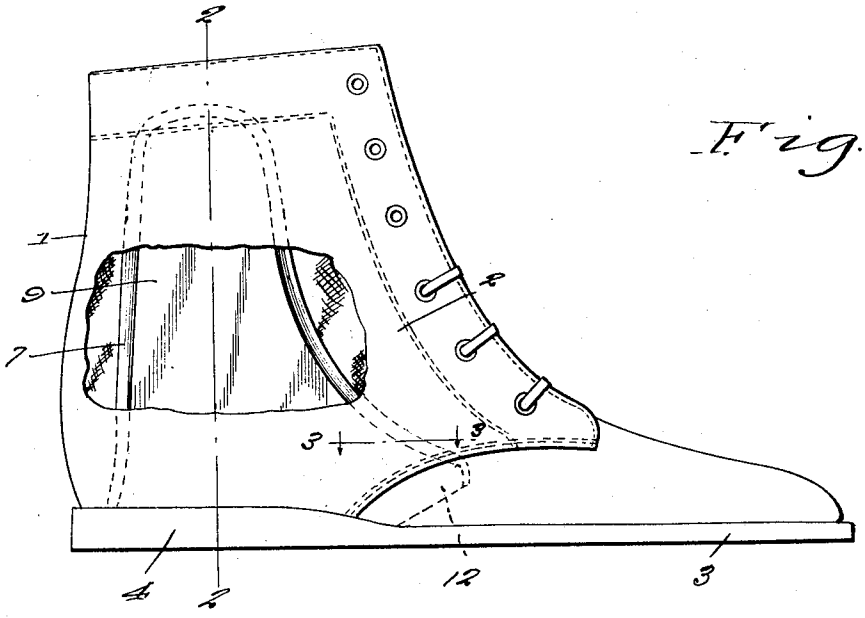


Fig. 1.

Fig. 4.

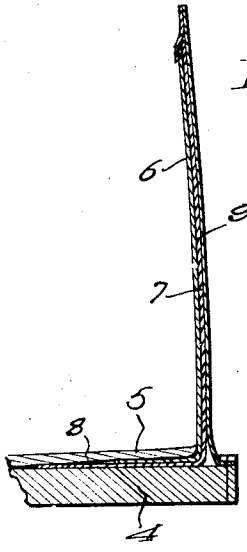
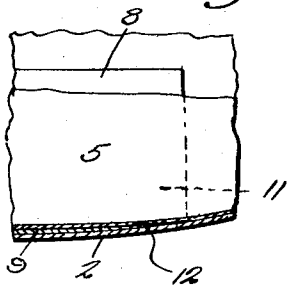
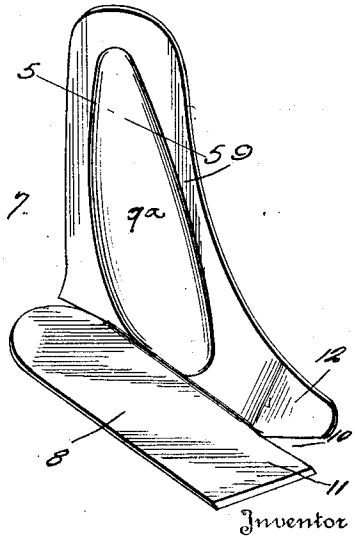


Fig. 2

Fig. 3.





9 Fig. 5.

9a

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UNITED STATES PATENT OFFICE.

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ANKLE AND ARCH SUPPORT FOR CHILDREN'S SHOES.

Application filed July 12, 1928. Serial No. 292,202.

This invention relates to ankle and arch supports for children's shoes, and particularly to shoes of the stitch-down type.

The main object of the invention is to provide supports for the shoes of children having weak ankles which will give ease and comfort to and prevent deformation of the foot during the growth of the latter and give that protection necessary until the foot acquires sufficient strength to be self-supporting.

A further object of the invention is to provide a brace or support which will allow all necessary movements without restriction while giving a bracing action, which may be worn in a shoe without discomfort or making the shoe appear clumsy, and which is simple and inexpensive of construction and of unitary character so as to avoid liability of displacement of its parts apt to cause discomfort, diminish the bracing action or to permit improper movements of the foot muscles.

The invention consists of the features of construction, combination and arrangement of parts, hereinafter fully described and claimed, reference being had to the accompanying drawing, in which:—

Figure 1 is a side elevation of a child's shoe embodying my invention, a part of the upper being broken away to show a portion of one of the supports.

Figure 2 is a transverse section through one side of the shoe taken on line 2—2 of Figure 1.

Figure 3 is a fragmentary horizontal section taken on line 3—3 of Figure 1.

Figure 4 is a perspective view of one of my improved braces or supports.

Figure 5 is a section on line 5—5 of Figure 4.

Referring now more particularly to the drawing, 1 designates a child's shoe of the type referred to, including the upper top 2, outer sole 3 provided with the thickened heel portion 4, inner sole 5, and lining 6.

Disposed within the shoe at each side of the upper is a brace or support 7 made of prepared paper fibre or other suitable material which is waterproof and at the same time of semi-rigid, semi-elastic character. Each brace or support is of unitary construction and comprises a base piece or portion 8 and a shank portion 9. The base piece 8 is in general of oblong form, that is, of greater length than width, and the shank 9 is integral with and rises from one of the longitudinal side edges of said base piece. As shown, the rear edge of the shank is substantially straight and vertical and arranged in alinement with the rear end of the base piece, while the front edge of the shank extends from the upper end of the shank downwardly toward the forward end thereof on a concaved line of curvature. The shank, therefore, has the general outline shape of a shoe in side elevation, its upper half being of a width approximately equal to one half the length of the base piece, while its lower half flares and at its lower portion is of a width substantially equal to the length of the base piece.

The braces are arranged at the opposite sides of the top 2 so that the axial center of the upper halves of the braces will aline with the ankle point of the wearer and bear on opposite sides thereof to give support thereto, while the lower portions of the braces extend in advance of the ankle line and to a point just in front of the forward part of the arch of the foot, so that the foot at the arch point will be sustained and a weak foot supported also against lateral strains. Preferably the base piece of each brace is disposed between the outer sole 3 and inner sole 5, so as to be covered by the latter, while the shank portion of the brace is disposed between the adjacent side of the top 2 and the lining 6 so as to be covered by the latter, and each brace is cemented, sewed or otherwise secured in position against casual displacement. Each brace has sufficient rigidity to maintain its form and give the requisite degree of support, and sufficient amount of elasticity to prevent it from giving any undue degree of stiffness to the shoe, so that the shoe, though braced, may be worn with ease and comfort. By making the braces of thin material they may be employed without making the shoe bulky in appearance or giving any visual evidence of their presence.

As shown, the brace is slit, as at 10, to separate the connecting edges of the base piece and shank from each other for a distance in rear of the front of the brace. This distance is equivalent to the extent of projection of the brace over the arch and the slit is formed on a curved line so as to provide the base 8 with a front projection 11 free from the shank and the latter with a tab-like projection 12 free from the base piece. The projection 8 is thus adapted to reinforce

the arch of the foot while being sufficiently flexible to permit free relative bending movements at this point between the ball and heel portions of the foot in walking or running, while the projection 12 is permitted to assume the curve of the rear portion of the vamp and at the same time to reinforce the foot at this point without rendering the upper unduly stiff.

The shank 9 is provided with a concavity 9^a of substantially elliptical contour and substantially equal in length to the shank and having its axial center coincident with the axial center thereof. This concavity thins the shank to give a certain degree of flexibility thereto and to allow more space for the internal malleolus of the tibia, whereby a snugger fit of the shoe is obtained and greater comfort to the wearer secured.

From the foregoing description, taken in connection with the drawing, it will be seen that my invention provides an ankle and arch support which is simple of construction and at the same time is sufficiently flexible to permit free and easy foot movements. The construction of the device is also such that when a pair of them are fitted in a shoe for use, they may be worn without discomfort or giving a bulky appearance to the shoe or any indication of the use of devices of this character. By making each support with a base and upright of unitary construction, a strong and durable type of device is provided without undue weight or bulkiness and without liability of relative shifting of parts, such as is liable to occur when a support is made of a plurality of connecting elements. By the provision of the slit 10 the part 12 is permitted to assume the curved conformation of the upper, while the part 11, while projecting over upon the arch, so as to give effective support thereto, is made flexible enough to permit bending of the shoe at the arch during walking movements.

Having thus described my invention, I claim:—

An ankle and arch support for children's shoes comprising a semi-rigid unitary bracing element formed of a base piece and a shank rising therefrom, said shank having an upper portion of a width substantially one-half the length of the base piece and a lower portion of a width slightly less than the length of the base piece, the lower edge of said shank being joined to one of the side edges of the base piece and having a horizontal forward projecting portion separated therefrom on a curved line adjacent to and for a distance from its forward edge approximately half its length to form a laterally curved tab-like projection.

In testimony whereof I affix my signature.

RALPH BOTTI.