F. DIAL.

SHOE CONSTRUCTION.

APPLICATION FILED DEC. 9, 1919.

1,400,143.

Patented Dec. 13, 1921.

Fig. 1.

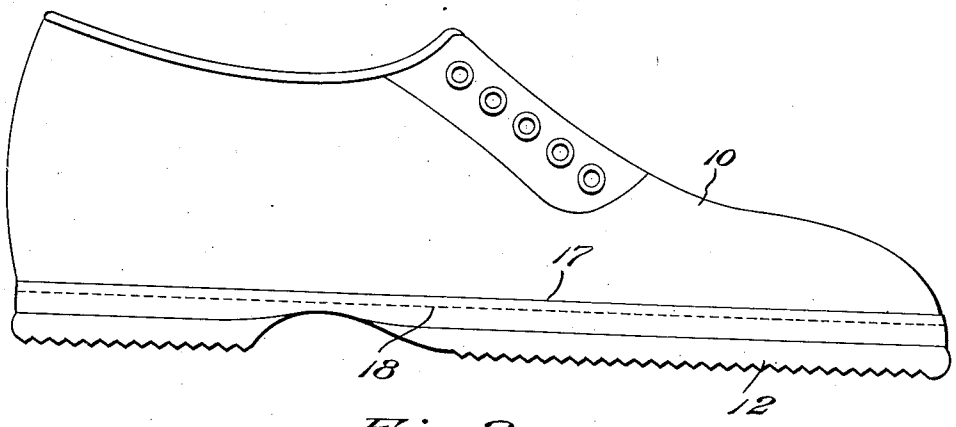


Fig. 2.

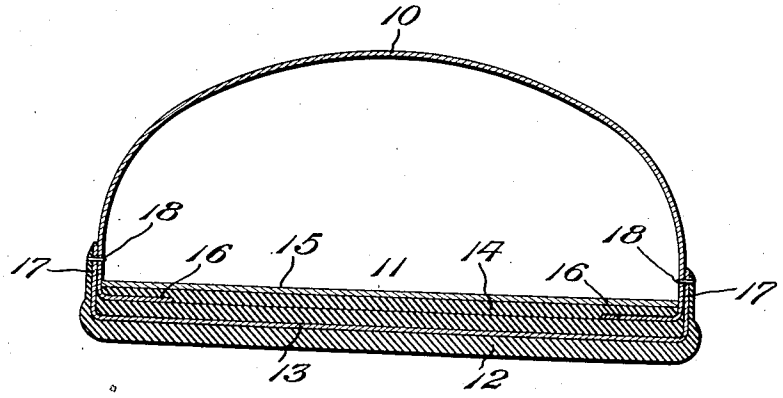
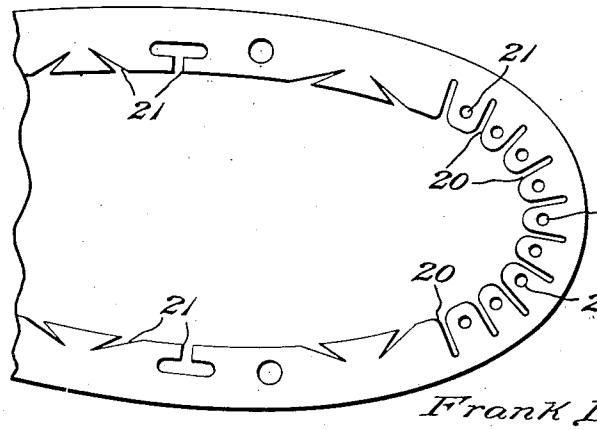


Fig. 3.



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UNITED STATES PATENT OFFICE.

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SHOE CONSTRUCTION.

1,400,143. Specification of Letters Patent. Patented Dec. 13, 1921.

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To all whom it may concern:

Be it known that I, FRANK DIAL, a citizen of the United States, residing at Washington, in the District of Columbia, have invented new and useful Improvements in Shoe Construction, of which the following is a specification.

This invention relates to shoes, particularly to tennis slippers and shoes, sport shoes and the like which have their uppers formed of fabric such as canvas and which have rubber soles, and the invention has for its object the provision of a novel construction of shoe of this character whereby the sole and upper will be firmly united so that any possible separation thereof will be prevented.

Another object is the provision of a shoe construction of this character in which the upper is so constructed that its edges will not buckle when turned inwardly to be secured to the sole and in which these inturned edges of the upper are provided with holes through which the rubber of the sole may pass during vulcanization for effecting a more thorough union of the upper with the sole.

Another object is the provision of a shoe construction of this character which will be simple and inexpensive, highly efficient, durable in service, and a general improvement in the art.

With the above and other objects and advantages in view, the invention consists in the details of construction to be hereinafter more fully described and claimed and illustrated in the accompanying drawings in which:

Figure 1 is a side elevation of a tennis slipper constructed in accordance with my invention,

Fig. 2 is a cross sectional view on a larger scale, and

Fig. 3 is a plan view of the upper showing a construction which may be used if desired.

In carrying out my invention I provide a shoe upper 10 which is formed of fabric such as canvas, heavy duck or the like. The sole is designated broadly by the numeral 11 and comprises an outer section 12 of rubber having embedded therein, during its moulding, a sheet 13 of fabric, preferably canvas, the edges of which project beyond the section 12. The sole further includes a layer 14 of rubber or other suitable composition, and this layer is covered by a sheet 15 of some suitable cloth. The rubber section 12 having the fabric 13 embedded therein, constitutes the outer sole while the layer of composition 14 covered by the fabric 15, constitutes the inner sole.

In assembling the shoe the edges 16 of the upper are disposed to extend inwardly and are placed upon the top of the rubber 12 constituting the outer sole, after which the inner sole is placed in position upon the inturned edges of the upper. The inner and outer soles are then vulcanized together which will result in firmly uniting them so as to produce what constitutes in effect, a substantially homogeneous structure. It will be observed that the outer sole is of greater width than the inner sole and of greater width than the maximum width of the upper at its point of connection with the sole. After vulcanization, it will therefore be apparent that the edges of the outer sole will be free and will project beyond the upper. These projecting edges 17 are then turned upwardly against the side of the upper 10 at its lower portion and are stitched thereto, as shown at 18.

Referring to Fig. 3 it will be seen that the upper may have its inturned lower edges, cut, as shown at 20, so as to prevent buckling of the inturned edges and to permit them to lie flat upon the sole. These inturned edges are furthermore provided with holes 21 through which the rubber of the sole may pass during vulcanization so as to unite the outer and inner soles more closely and very securely hold the inturned edges of the upper between them. The cut out portions 20 of the upper are preferably, though not necessarily straight in order to prevent overlapping or buckling of the edges when such edges are disposed between the inner and outer soles, while the openings or holes 21 are closed or angularly arranged or otherwise formed to prevent the upper from separating from the soles, such disconnection being prevented owing to the rubber entering the openings 21 during the vulcanizing process, and forming a bridge to lock the sole and upper together.

From the foregoing description and a study of the drawing it will be apparent that I have thus provided a shoe construction which is simple and which is thoroughly durable as the inner and outer soles are not only valcanized together and vulcanized onto the lower inturned edges of the upper,

but the edges 17 are stitched or sewed to the side of the upper.

While I have shown and described the preferred embodiment of my invention, it is of course to be understood that I reserve the right to make such changes in the form, construction, and arrangement of parts as will not depart from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. The process of forming a shoe from the upper, and outer sole of rubber, and a rubber composition inner sole, consisting in inserting the inturned lower edges of the upper between the outer and inner soles, vulcanizing the inner and outer soles together whereby the inturned edges of the upper will be embedded within the united inner and outer soles, the outer sole being of greater width than the inner sole whereby to provide projecting edges, and in stitching said projecting edges of the outer sole onto the upper adjacent the lower edges thereof.

2. A shoe including an upper, an outer sole including a layer of rubber having a sheet of fabric embedded therein and extending the entire width thereof, an inner sole formed of a sheet of rubber composition and a sheet of fabric covering the top thereof, said outer sole being of greater width than said inner sole and of greater width than the maximum width of the upper at the point of connection of the upper with the inner sole, and the projecting edges of said outer sole being upturned and stitched to said upper.

3. The process of forming a shoe from an upper, an outer rubber sole, and a rubber composition inner sole consisting in inserting the inturned lower edges of the upper between the outer and inner soles, vulcanizing the inner and outer soles together whereby to embed the inturned edges therebetween, the outer sole being of greater width than the inner sole whereby to provide projecting edges and in securing said projecting edges onto the upper.

4. A shoe including an upper, an outer sole of rubber, an inner sole formed of a sheet of rubber composition, said outer sole being of greater width than the inner sole whereby to provide projecting edges and said projecting edges being upturned and secured to the upper.

In testimony whereof I affix my signature.

FRANK DIAL.