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W. BERKEMANN
TOE STRAIGHTENING DEVICE

2,958,324

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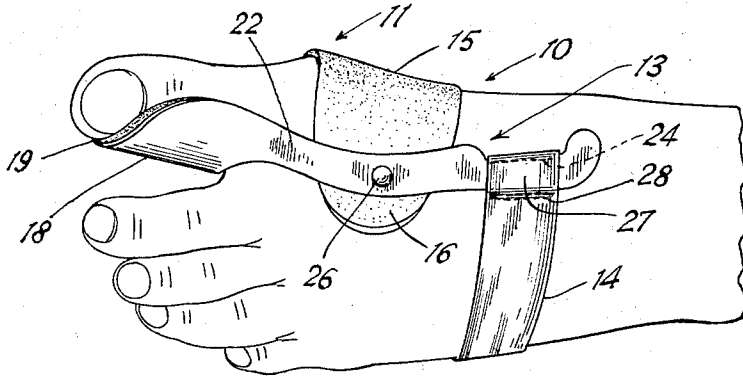


FIG. 1

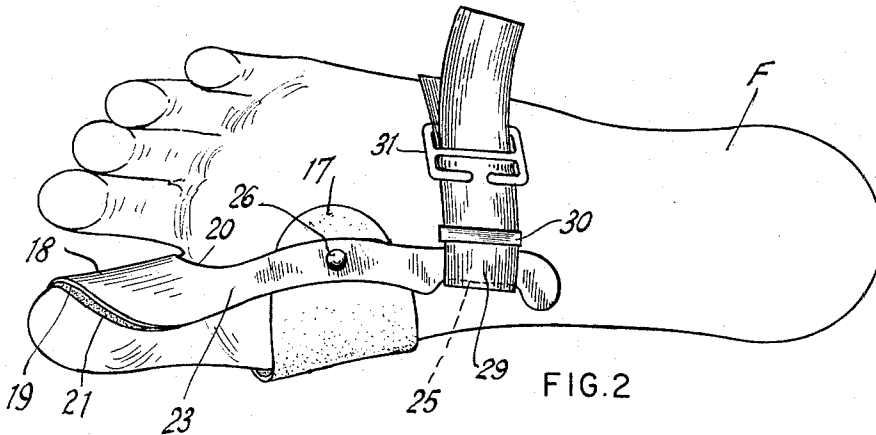


FIG. 2

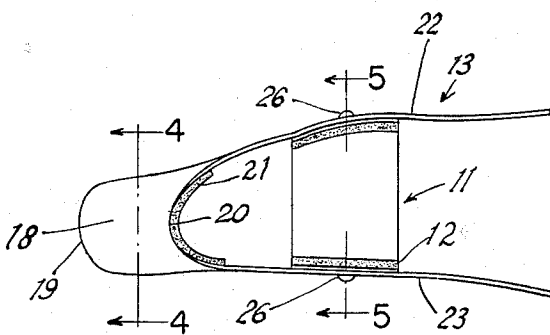


FIG. 3



FIG. 4

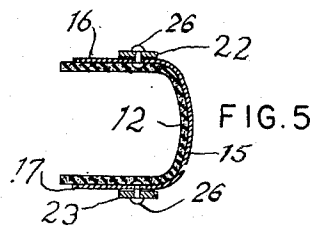


FIG. 5

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TOE STRAIGHTENING DEVICE

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1 Claim. (Cl. 128—81)

This invention relates to toe straightening devices. More particularly, the invention concerns means applicable to the human foot to correct deviations in the large toe.

While a number of devices have been proposed for correcting deviations of the large toe of the human foot, such devices have been found to be complicated in construction; uncomfortable in use and difficult of adjustment.

Accordingly, an object of this invention is to provide an improved toe straightening device which is of relatively simple construction using a minimum number of parts; which is designed to afford a maximum amount of comfort in use; and which is simply and readily adjusted to secure the proper correction of toe deviation.

Another object of this invention is to provide in a device of the character described, a unitary toe splint which includes a rigid toe engaging portion and arm portions pivotally mounted on a fulcrum member, the arm portions being flexible and resilient for readily conforming to the contours of the foot of the wearer.

A further object of this invention is to provide in a device of the character described, a unitary toe splint formed of molded plastic to include a rigid, curved toe engaging portion and a pair of flexible, resilient arm portions extending from the curved portion and adapted to readily conform to the specific contours of the wearer's foot which are engaged thereby.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

In the drawing:

Fig. 1 is a top plan view of the device embodying the invention, shown applied to a foot;

Fig. 2 is bottom plan view thereof;

Fig. 3 is a side elevational view of the device;

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 3; and

Fig. 5 is a sectional view taken on the line 5—5 of Fig. 3.

Referring in detail to the drawing, 10 designates a toe straightening device embodying the invention. The same comprises essentially a flexible U shaped flap 11 which may be formed of soft leather or the like and is padded on the inner surface thereof, as at 12. Flap 11 provides a fulcrum means for a unitary toe splint 13 which may be molded from suitable synthetic plastics or other materials. Elastic webbing 14 provides means for biasing the splint 13 in a manner to correct deviations in the large toe, as later described in detail.

The flap 11 comprises a bight portion 15 which is adapted to embrace the side of the foot rearwardly of the large joint of the large toe, and a pair of opposed arm portions 16, 17 extending from bight portion 15 and adapted respectively, to overlie the transverse arch and a bottom portion of the foot.

The toe splint 13 takes the form of a bifurcated member including a transversely curved portion 18 having a

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rounded outer edge 19 and a rounded concave inner edge 20, with a padding 21 of sponge rubber or other soft material, adhesively secured to the inner surface of portion 18. Extending from the base and side edges of portion 18 are a pair of opposed, flat arm portions 22, 23. The end portions of arm portions 22, 23 are recessed as at 24, 25, for the purpose hereinafter appearing.

The splint 13 is pivotally mounted on flap 11 by means of fasteners 26 passing through openings in intermediate portions of arm portions 22, 23 and secured in place on flap arm portions 16, 17; the curved portion 18 of the splint being opposed to the bight 15 of flap 11.

The webbing 14 comprises looped portion 27 at one end thereof, formed by transverse stitching 28, said looped portion being adapted to be enlarged and slipped over the outer end of arm portion 22 to be located at recessed portion 24 of said arm portion. The webbing 14 includes overlying plies which form a second looped portion 29 at the other end thereof, with a slidable endless band 30 extending transversely of the plies and which may be retracted to enlarge loop 29 to allow the same to be slipped over the outer end of arm portion 23 and located at recess 25 therein, the band 30 then being moved forwardly to prevent accidental displacement of the loop 29 from said arm portion.

As shown in Figs. 1, 2, the device 10 may be readily fitted on foot F indicated in full outline, the same being shown as the left foot, the loop 29 being initially removed from arm portion 23. The flap 11 is disposed on the side of the foot and curved portion 18 of the splint 13 engages the inner side of the large toe, the curved inner edge 20 generally conforming to the engaged portions of the foot.

Arm portion 22 extends longitudinally over the transverse arch of the foot, and being flexible and resilient, readily conforms to the contours thereof. The free end of webbing 14 is extended around the other side of the foot and looped portion 29 is slipped over the end of arm portion 23 of splint 13, said arm portion also being flexible and resilient, thereby conforming to the contours of the sole of the foot.

It will be apparent that webbing 14 will bias splint 13 in a direction to cause the large toe of the foot to be moved outwardly, thereby offsetting the deviation inwardly of said toe. The extent of the outward movement of said toe may be regulated by varying the effective length of the webbing 14 between arm portions 22, 23 of the splint 13. Thus, adjacent ends of said webbing are engaged by a buckle 31 of well known construction on which one end of the webbing is fixed and the other end may be movably extended therethrough and frictionally fixed in adjusted positions. Thus, upon shortening the effective length of said webbing, the outward bias of the toe engaging portion 18 of the splint is increased. This allows simple means for effecting a progressive increase in such bias as the course of treatment proceeds.

A device entirely similar to that described and complementary thereto, is provided for use with the right foot.

It will be apparent that there has been provided a toe straightening device which is made up of a minimum number of parts; which is easily applied and adjusted in use; and which allows for a maximum amount of comfort.

It will be obvious that changes might be made in the embodiment of the invention herein described without departing from the spirit of the invention. It is therefore intended that all matter herein set forth shall be deemed illustrative and not by way of limitation.

Having thus disclosed my invention, I claim as new and desire to protect by Letters Patent:

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A toe straightening device comprising a flexible U shaped fulcrum member, a unitary molded plastic toe splint pivotally mounted on said member, said splint comprising at the outer end thereof a substantially rigid curved portion for engaging the inner side of the large toe and a pair of opposed flat arm portions extending from the side edges of said curved portion at the base thereof, said arm portions being flexible and resilient, means pivotally mounting said arm portions intermediate the ends thereof on opposed portions of said fulcrum member, and resilient means interconnecting the outer

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ends of said arm portions for biasing the curved portion of said splint toward the bight of said fulcrum member.

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