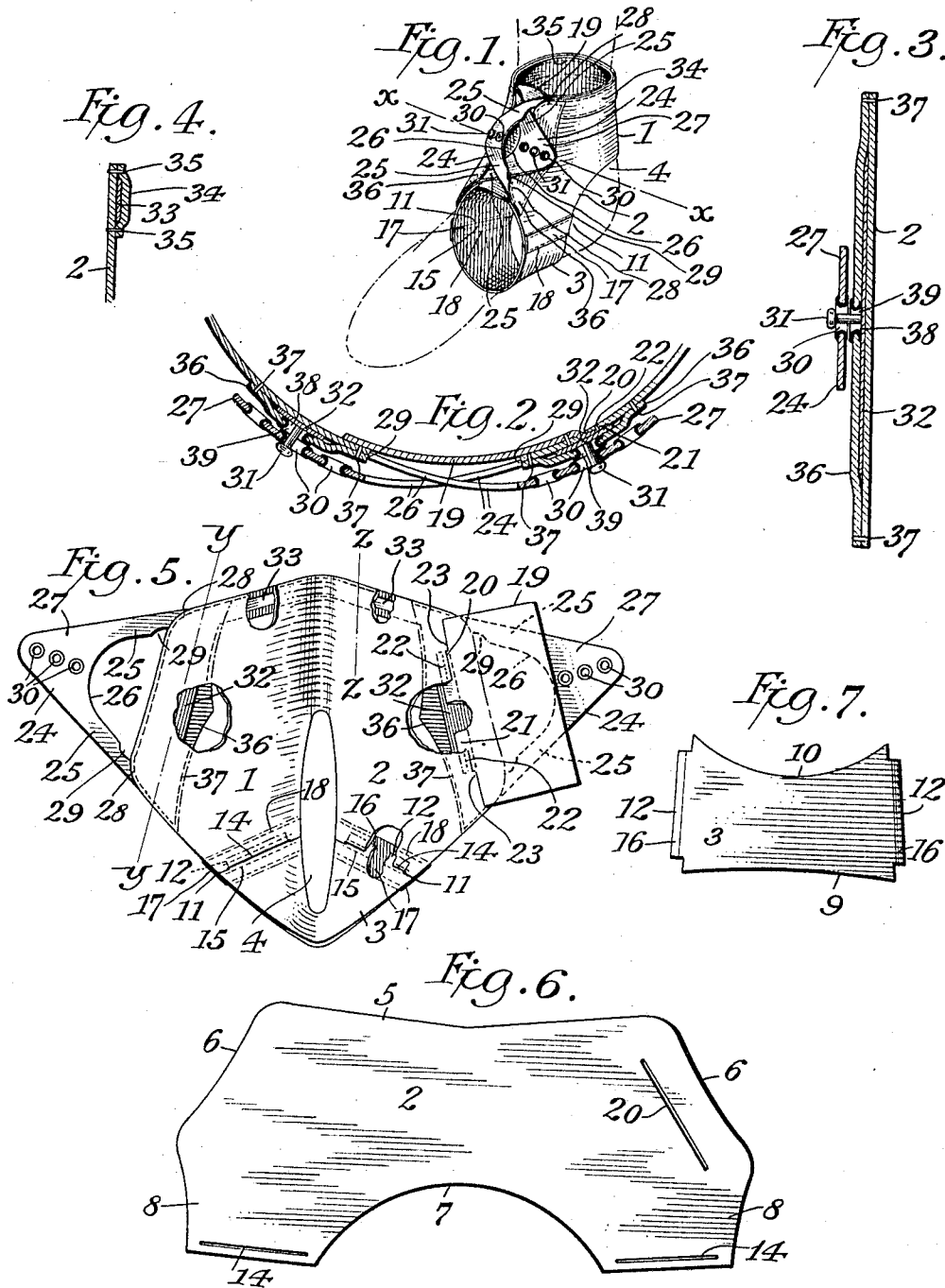


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ANKLE SUPPORT AND PROTECTOR.
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ANKLE SUPPORT AND PROTECTOR.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HENRY JAMES COLLIS, a citizen of the United States, and resident of Taunton, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Ankle Supports and Protectors, of which the following is a specification.

This invention relates to ankle supports and protectors, and it has for its object to provide a simple and improved ankle support of the type which has a body portion adapted to pass around the ankle and a portion connected therewith and adapted to pass under the instep and which is provided with fastening means at the front of said body portion and with a tongue protective means beneath said fastening.

A particular object of my present improvements is to provide an ankle support of the class above set forth, in which the fastening means can be operated more quickly and conveniently than the usual lacing heretofore employed and will furthermore be more effective and advantageous in point of security and strength and ready adaptability to the size of the ankle of the wearer.

A further object of my invention is to provide an improved ankle support of the class above set forth, which will serve as a brace at desirable points with relation to the inclosed ankle, by reason of the brace features hereinafter described, which can be conveniently and economically manufactured, which will possess advantages in point of smooth fit and effectiveness and general efficiency, and which will possess other important features of constructional improvement and advantages, substantially as hereinafter set forth.

In the drawings—Figure 1 is a perspective view of the improved ankle support in position for use. Fig. 2 is a detail cross-section on the line $x-x$, Fig. 1. Fig. 3 is a detail cross-section on the line $y-y$, Fig. 5. Fig. 4 is a detail cross-section on the line $z-z$, Fig. 5. Fig. 5 is a perspective view, with the support open, showing the interior, parts being broken away to show in sections features of construction. Fig. 6 is a plan view of the blank from which the main body portion is formed. Fig. 7 is a plan view of the blank from which is formed the portion passing under the instep.

Corresponding parts in all the figures are denoted by the same reference characters.

Referring to the drawings, 1 designates the body of the device, which is constructed of pliable material, preferably leather. In the preferred construction, the body is constituted by a single thickness of material, and comprises a main portion, as at 2, adapted to surround the ankle, and a bottom portion, as at 3, adapted to pass under the instep, the main portion being open at its front, where the fastening means are provided, and the bottom portion being an extension or strip projecting from the front part of the main portion, whereby the lower rear portion of the device is open, as at 4, to accommodate the heel of the wearer.

The general pattern form of the body 1 may be constituted by a suitable or adapted construction embodying a single piece of pliable material or separate pieces of pliable material, but preferably the pliable body is formed of two pieces of pliable material as herein illustrated. In this preferred construction, the main portion 2 is constructed in a single piece, from a blank, as shown in Fig. 6, whereby all seams will be eliminated at the part surrounding the ankle. This one-piece blank has a top portion, as at 5, cut in form to produce the upper part of the main portion 2 of the body 1, with oppositely-inclined side edges, as at 6—6, to form the front meeting edges at the fastening means, and with a centrally curved bottom edge, as at 7, to form the top of the heel opening 4, and at each side of said curved bottom edge 7 the blank has a short extension projecting beneath the edge 6, as at 8—8, to form the lower side parts of the main portion 2 of the body 1. Another one-piece blank, in strip form, as shown in Fig. 7, constitutes the bottom portion 3 of the body 1 which extends under the instep. This strip blank has an approximately straight front edge, as at 9, and a curved rear edge, as at 10, which forms a continuation of the curve of the bottom edge 7 of the main body-portion blank and thus forms the bottom of the heel opening 4.

When the body 1 is constructed from two blanks as just described, it is only necessary to connect the ends of the strip blank with the edges of the bottom extensions 8 of the main body-portion blank, to produce the completed body of the device, as shown

in Fig. 5, and in this construction no seam will exist at any point in the pliable body 1 except at the connected edges of the two blanks just mentioned, which will bring such seam at each side at a point below the main body-portion 2 which surrounds the ankle and above the bottom portion 3 which passes under the instep, where the seams will not exert an extra-thickness pressure at an undesirable point and against the tender portion of the ankle or foot. The seam connection, shown at 11, is preferably produced by a construction in which the ends of the bottom strip blank are provided with extensions, as at 12, which are inserted from the inner side in slots, as at 14, formed across the lower edges of the extensions 8 of the main body-portion blank, the overlapping parts being secured together by a suitable stitching, as at 15. The extensions 12 are preferably skived, as at 16, to reduce thickness at the seam, and across the seam a stay-strip, 17, is preferably provided at the outer side of the body 1 and secured by suitable stitching, as at 18. This stay-strip covers and incloses the extension and slot construction 12 and 14 and also affords great strength at the seam, and the general seam construction as just described does not impair the smooth inner surface of the device, the overlapping portions being at the outer side and covered as just set forth.

The fastening means is provided at the front meeting edges 6, and a protective tongue 19, extends beneath said fastening means. In the preferred construction, the secured connection of the tongue with the body of the device does not impair the smooth inner surface of the pliable body nor affect its exterior appearance. Such construction comprises a slot, as at 20, provided near one of the front meeting edges 6 of the main body-portion blank and extending substantially in a plane parallel with said edge so that the slot is in a diagonal position with relation to the main top portion of said blank. The tongue 19 has an extension, 21, at one edge, which is inserted through the slot 20 from the inside and projects at the outer side of the blank, the overlapping parts thus produced being secured together by a suitable stitching, as at 22, whereby the tongue is retained in operative connection with the device. The tongue extension 21 is preferably skived, as shown in Fig. 2, to reduce thickness at said overlapping parts, and said extension preferably terminates a short distance from the top and bottom edges of the tongue, as at 23, Fig. 5, whereby the top and bottom portion of the tongue is left free and pliable for convenience and adaptability in use.

The fastening means comprises cross-straps, 24—24, respectively projecting at the edges of the open front of the main portion

2 of the body of the device. These cross-straps are of approximately V-shape, forming two divergent securing strips, as at 25—25, between which an opening exists, as at 26, and have an enlarged portion, 27, at the vertex of the V-angle. The ends of the cross-strap securing strips 25 are secured, as at 28, to the outer face of the main body-portion blank, at the edges 6 thereof, and the cross-straps thus project from the respective edges 6 and are adapted to overlap and cross in their operation as fastening means, as shown in Fig. 1, one cross-strap being passed beneath the other and through the opening 26 thereof. To facilitate the relative fit of the cross-straps, in their overlapping and crossing position under conditions of adjustment of the fastening means, the inner edges of the securing strips 25 are preferably recessed, as at 29, adjacent their secured ends 28.

It will be understood that the cross-straps, as well as the protective tongue 19, are formed of leather or other suitable pliable material, and that the outer terminal portions 27 of the cross-straps are engaged with fastening means provided upon the body of the device. The fastening connection between the cross-straps and the body 1 may be of any suitable or adapted construction, but I prefer to employ the means herein shown, which comprise eyelets, 30, in the portion 27 of the cross-strap, for engaging a stud, 31, projecting at the outer face of the body 1. The eyelets are arranged in successive series, to enable variable adjustment of the cross-strap fastening means to different sizes of ankles. In lieu of the eyelet and stud construction as herein shown, a suitable stud and socket construction may of course be employed, or any other adapted fastening devices may be used for the connection between the cross-straps and body of the device.

The main portion 2 of the body of the device is braced at points which will afford a brace support for the ankle under desirable conditions in the effective operative use of the device. In the preferred construction herein shown, braces are provided at the edge portions of the open front of the body 1 and at the top edge of the main portion of the body, whereby the ankle will be supported and braced at these points and the device will thus serve as an effective brace as well as a support. The braces are preferably constituted by strips or bands of resilient or spring metal, extending on a longitudinal plane with relation to the front edges of the body 1, as at 32—32, and extending longitudinally of the top edge portion of the body, as at 33, whereby the top brace strip or band 33 surrounds the ankle above the enlargement at the ankle bones and coacts with the front brace strips 32 in its bracing

function. The strips 33 and 32 are secured in position at the outer surface of the main body-portion blank, so that they do not impair the smooth inner surface of the pliable body 1, and the top strip or band 33 is covered and inclosed by a longitudinal stay-strip, as at 34, extending longitudinally at the outer surface of the top edge portion of the main body-portion blank, said stay-strip 34 and brace strip 33 being retained in operative position by suitable stitching, as at 35. The front brace strips 32 are respectively covered and inclosed by stay-strips, 36—36, extending at the outer surface of the front edge portion 6 of the main body-portion blank, which stay-strips are preferably of ornamental contour and are secured by suitable stitching, as at 37. In the construction as just described, the stay-strips 36 and 34 preserve the exterior appearance of the device without impairment, and serve not only to cover but also to retain and inclose the brace strips, and in this connection it will be noted that the tongue construction which is secured inside and projects through the slot 20 is also effectively covered so that there is no impairment of the exterior appearance of the device, as this inserted tongue construction is covered by one of the front brace strips 32 which latter is in turn covered by one of the front stay-strips 36. It will also be noted that the stay-strips 36 cover and inclose the secured ends 28 of the cross-straps 24. The preferred composite construction as above described also enables convenient mounting of the fastening means which are carried by the body 1, and in the associate construction herein shown the studs 31 are carried by the front brace strips 32 and project therefrom through openings, 38, in the stay-strips 36, which openings may be eye-letted, as at 39, to prevent wear.

I do not desire to be understood as limiting myself to the detail construction and arrangement of parts as herein shown and described, as it is manifest that variations and modifications therein may be resorted to, in the adaptation of my invention to varying conditions of use, without departing from the spirit and scope of my invention and improvements. I therefore reserve the right to all such variations and modifications as properly fall within the scope of my invention and the terms of the following claims.

Having thus described my invention, I claim and desire to secure by Letters Patent:

1. In an ankle support and protector comprising a pliable body having a main portion adapted to surround the ankle and terminating in edges at its respective ends constituting the open front of the device and a bottom portion adapted to pass under the instep, fastening means constituted by cross-straps respectively secured to said front edges at the free terminal ends of the main

portion of the body at the open front thereof and oppositely projecting from said respective edges, and fastening devices carried by said body respectively at opposite sides of the open front thereof and respectively engageable with said oppositely-projecting cross-straps.

2. In an ankle support and protector comprising a pliable body having a main portion adapted to surround the ankle and terminating in edges at its respective ends constituting the open front of the device and a bottom portion adapted to pass under the instep, fastening means constituted by cross-straps of approximately V-shape respectively having their divergent strips secured to said front edges at the free terminal ends of the main portion of the body, at the open front thereof and oppositely-projecting therefrom thus forming central openings in the respective cross-straps, and fastening devices carried by said body respectively at opposite sides of the open front thereof and respectively engageable with the portion of said oppositely-projecting cross-straps beyond said central openings therein.

3. In an ankle support and protector comprising a pliable body having a main portion adapted to surround the ankle and terminating in edges at its respective ends constituting the open front of the device and a bottom portion adapted to pass under the instep, fastening means constituted by cross-straps respectively secured to said front edges at the free terminal ends of the main portion of the body at the open front thereof and oppositely projecting therefrom, a stay strip secured to the outer surface of said respective front-edge portions, and fastening means carried by said body respectively at opposite sides of the open front thereof, said fastening means being covered and secured by said respective stay strips and having a portion projecting through the same and engageable with said oppositely-projecting cross-straps.

4. In an ankle support and protector comprising a pliable body having a main portion adapted to surround the ankle and terminating in edges at its respective ends constituting the open front of the device and a bottom portion adapted to pass under the instep, fastening means constituted by cross-straps respectively secured to said front edges at the free terminal ends of the main portion of the body at the open front thereof and oppositely projecting from said respective edges, a tongue having an extension inserted through the body from the inside near one of said front edges and secured in connection therewith, a stay strip secured to the outer surface of said respective front-edge portions, one of which stay-strips covers said tongue insertion, and fastening means carried by said body respectively at opposite

sides of the open front thereof, said fastening means being covered and secured by said respective stay strips and having a portion projecting through the same and engageable

5 with said oppositely-projecting cross-straps.

5. In an ankle support and protector comprising a pliable body having a main portion adapted to surround the ankle and terminating in edges at its respective ends constituting the open front of the device and a bottom portion adapted to pass under the instep, fastening means constituted by cross-straps respectively secured to said front edges at the free terminal ends of the main

10 portion of the body at the open front thereof and oppositely projecting from said respective edges, brace strips extending on the longitudinal plane of said front edges at the respective free terminal ends of the

15 main portion of said body at the open front thereof, and fastening devices carried by said body respectively at opposite sides of the open front thereof and respectively engageable with said oppositely-projecting

20 cross-straps.

6. In an ankle support and protector comprising a pliable body having a main portion adapted to surround the ankle and terminating in edges at its respective ends constituting the open front of the device and a bottom portion adapted to pass under the instep, fastening means constituted by cross-straps respectively secured to said front edges at the free terminal ends of the main

30 portion of the body at the open front thereof and projecting oppositely from said respective edges, and brace strips extending on the longitudinal plane of said front edges at the respective free terminal ends of the

35 main portion of said body at the open front thereof, said brace strips carrying fastening devices engageable with said oppositely-projecting cross-straps.

7. In an ankle support and protector comprising a pliable body having a main portion adapted to surround the ankle and terminating in edges at its respective ends constituting the open front of the device and a bottom portion adapted to pass under the instep, fastening means constituted by cross-straps respectively secured to said front edges at the free terminal ends of the main

45 portion of the body at the open front thereof and projecting from said respective edges, brace strips extending on the longitudinal plane of said front edges at the respective free terminal ends of the main portion of said body at the open front thereof, said

50 brace strips carrying fastening devices engageable with said oppositely-projecting cross-straps, and a stay strip secured to the outer surface of said respective front-edge portions and covering and securing the brace

55 strips, said fastening device of the brace strip projecting through the stay strip.

8. In an ankle support and protector comprising a pliable body having a main portion adapted to surround the ankle and terminating in edges at its respective ends constituting the open front of the device and a

70 bottom portion adapted to pass under the instep, fastening means at the front edges of the main portion of the body, brace strips extending on the longitudinal plane of said front edges at the respective free terminal ends of the main portion of said body at the open front thereof, and a brace strip or band coacting with said front brace strips and extending on the longitudinal plane of the top edge of said main portion of the body.

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9. In an ankle support and protector comprising a pliable body having a main portion adapted to surround the ankle and terminating in edges at its respective ends constituting the open front of the device and a bottom portion adapted to pass under the instep, fastening means at the front edges of the main portion of the body, and a resilient brace strip or band extending continuously from the open front of the device around

80 and on the longitudinal plane of the top edge of said main portion of said pliable body.

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10. In an ankle support and protector comprising a main portion adapted to surround the ankle and terminating in edges at its respective ends constituting the open front of the device and a bottom portion adapted to pass under the instep, a body constituting said portions and formed of two

95 blanks of pliable material, one of said blanks constituting said main portion adapted to surround the ankle and having slots at opposite sides of its lower terminals, and the other of said blanks constituting said bottom portion adapted to pass under the instep and having extensions at its ends inserted in said slots from the inner side, said

100 blanks being secured together at said inserted portions, whereby said two-piece pliable body will have a uniform smooth interior surface with seams only at the sides below the main portion which surrounds the ankle and above the bottom portion which

105 passes under the instep.

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11. In an ankle support and protector comprising a main portion adapted to surround the ankle and terminating in edges at its respective ends constituting the open front of the device and a bottom portion

115 adapted to pass under the instep, said main portion having fastening means at its front edges, a body constituting said portions and formed of two blanks of pliable material, one of said blanks constituting said main

120 portion adapted to surround the ankle, and the other of said blanks constituting said bottom portion adapted to pass under the instep, the lower terminals of said main blank and the ends of said bottom blank being

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joined at the sides at a point below the main portion which surrounds the ankle and above the bottom portion which passes under the instep, and resilient brace strips carried by
5 said pliable body respectively on the longitudinal plane of the top edge and the longitudinal plane of said front edges at the respective free terminal ends of said main portion at the open front thereof.

10 12. In an ankle support and protector comprising a pliable body having a main portion adapted to surround the ankle and terminating in edges at its respective ends constituting the open front of the device
15 and a bottom portion adapted to pass under the instep, fastening means constituted by cross-straps of approximately V-shape respectively having their divergent strips secured to said front edges at the free terminal
20 ends of the main portion of the body at the open front thereof and oppositely-pro-

jecting therefrom, thus forming central openings in the respective cross-straps, fastening devices carried by said body respectively at opposite sides of the open front 25 thereof and respectively engageable with the portion of said oppositely-projecting cross-straps beyond said opening, stay strips secured at the front edges of the main portion of the body respectively at opposite sides of 30 the open front thereof, said stay-strips respectively securing said fastening devices in position, and a brace strip or band extending on the longitudinal plane of the top edge of said main portion of the body. 35

In testimony whereof I have signed my name in the presence of the subscribing witnesses.

HENRY JAMES COLLIS.

Witnesses:

KATE A. GALLIGAN,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."