April 15, 1952 J. A. RICHARDSON 2,592,739

ANKLET

Filed Nov. 14, 1949

Fig. 1.

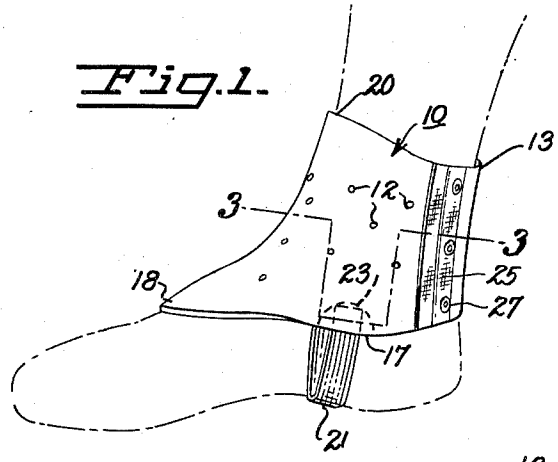


Fig. 2.

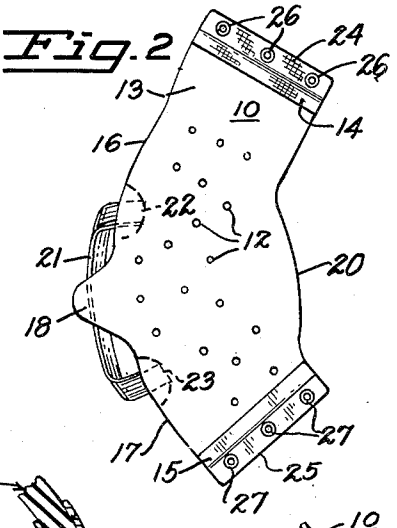


Fig. 3.

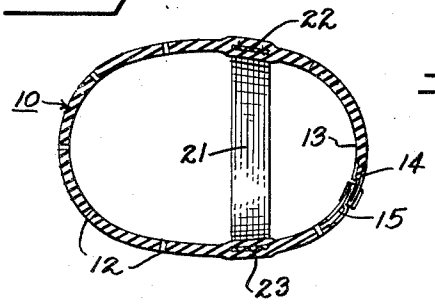


Fig. 4.

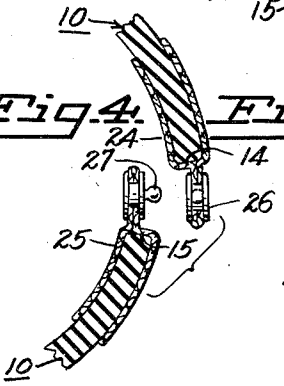


Fig. 5.

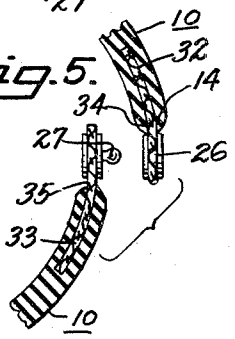


Fig. 6.

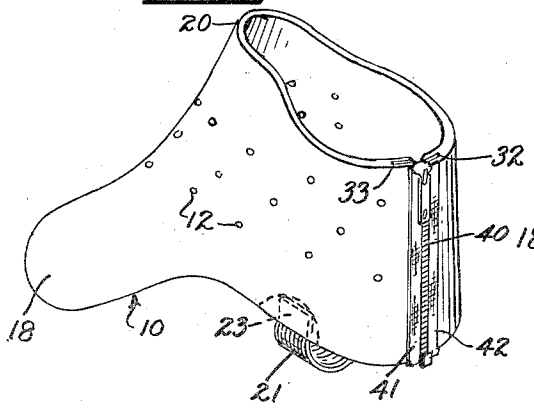
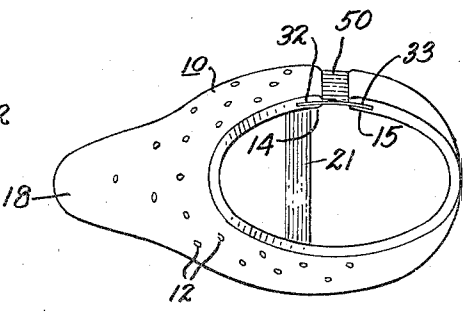


Fig. 7.



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ANKLET

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14 Claims. (Cl. 128—166)

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This invention relates to an improved anklet, and more particularly to a resilient, ventilated anklet which provides a cushioning effect and protects the ankle and foot of the wearer from rubbing, chafing, and abrasions.

Strenuous sports, such as skiing, ice hockey, skating, football, rugby, soccer, mountaineering, hiking, fishing, and hunting, place unusual strain on the ankles and adjacent portions of the legs and feet. Whether or not special footgear is used, one problem is always present: how to support the ankle properly without causing chafing and soreness.

This problem has not been solved by ankle wraps, high-topped shoes and prior-art anklets. Although they have given some support to the ankle, they have tended to add to the chafing and soreness, because they have all relied on tightly clamping the ankle. Sports footgear has to be laced tightly in order to support the ankle, and heretofore this has resulted in clamping wrinkles and folds in against the ankle. The boot tongue has rubbed against the fore-part of the ankle and the upper part of the foot, and caused blisters and tenderness. In short boots the boot top itself has bitten into the leg just above the ankle, and this bite, especially familiar to skiers and football players, has caused an even more aggravated form of chafing than the wrinkles. Tight lacing has also hampered circulation and ventilation and has frequently caused feet to get numb, especially when the wearer is engaged in winter sports.

One further deficiency of the prior art devices is that none of them has given sufficient support to the hollow space below the ankle, between it and the Achilles tendon.

This chafing, soreness, and lack of support have all contributed to hasten fatigue, as well as to cause blisters and other injuries and discomforts.

This invention solves these problems by providing a resilient anklet made from sponge rubber and shaped according to a novel pattern which gives maximum protection to the ankle and adjacent portions of the foot and leg. The sponge rubber anklet, which is perforated so that the foot can breathe properly, is positioned on the ankle by a novel form of resilient understrap. When so positioned, the novelly shaped anklet fills the natural spaces around the ankle with soft rubber, providing the needed support and causing the boot to fit snugly all around. The boot can be laced tightly without causing discomfort, and the leg above the ankle is similarly protected from the biting action of the boot and from kicks, knocks, and abrasions. Proper circulation is assured at all times by the resiliency of

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the breathing anklet, and the inner surface of the anklet is always perfectly smooth, with no wrinkles or creases. A further feature of the anklet is the ease with which it may be put on or taken off, because of the novel fastening means which are provided. These fastening means also are so constructed as not to interfere with the smooth inner surface of the anklet.

These and other advantages will appear from the following description. Several embodiments are described in accordance with the requirements of the United States Revised Statutes section 4888, but it should be understood that the descriptions are illustrative and are not intended to limit the scope of the invention, which is defined in the appended claims.

In the drawings:

Fig. 1 is a view in elevation showing one type of anklet which embodies the principles of the invention in place on the ankle;

Fig. 2 is a plan view of the anklet of Fig. 1 shown unfastened and in the flat;

Fig. 3 is an enlarged view in section taken along the line 3—3 of Fig. 1;

Fig. 4 is a further enlarged view in section of the snap fastening means of the device shown in Figs. 1 to 3, shown in an unfastened position;

Fig. 5 is a view similar to Fig. 4 of a modified form of snap fastener in which the bands or tapes which hold the snaps are secured inside the rubber anklet instead of around the outside;

Fig. 6 is a view in perspective of another modified form of the anklet similar to those shown in Figs. 1 to 5 except that it is fastened by a zipper instead of by a snap fastener—the zipper tapes being fastened to the anklet like the bands of Fig. 5;

Fig. 7 is a top view of another modified form of anklet in which an elastic band permanently joins the ends together.

The form of the invention shown in Figs. 1 to 4 comprises a flat anklet 10 of uniform thickness and is preferably made from a lightweight, soft, sponge rubber. This material provides a cushioning effect against the biting, rubbing, abrading, and chafing of heavy boots, and it enables the anklet to fill the natural spaces which would otherwise be unsupported. In short, it provides a resilient support for the ankle.

Prior art anklets transmitted the pressure of the tightly laced boot directly to the foot and ankle and therefore bound and chafed. They also were so constructed as to cause discomfort themselves and to exert undesirable pressures on parts of the foot or ankle. The present sponge rubber anklet forms a resilient protecting buffer

between the boot and the ankle. Wherever the boot might otherwise be too tight, the anklet **10** is compressed and absorbs the pressure, so that the pressure on the ankle is uniform at all times, even when the wearer shifts his weight, runs, skates, or does other things affecting the position of his ankles.

In order that the foot may breathe and ventilate properly, I prefer to perforate the resilient anklet **10** by a number of holes **12**. The anklet **10** shown here has twenty-one such holes **12**, but there may be more or fewer holes. The important thing is that there be enough to enable the foot to breathe properly and to prevent excess perspiration from building up.

The shape of the anklet **10** is very important (see Fig. 2). The narrowest portion **13** of the anklet (the portion adjacent the long end **14**) fits on the back side of the leg behind the ankle, and the height at this point is usually slightly less than four inches. This assures freedom of the ankle, where too high an anklet would unduly restrict the up and down movement of the foot.

From this narrow portion **13** the anklet **10** flares out toward the sides and fore part of the ankle. The flare of its lower edge at **16** and **17** not only covers and protects the lower part of the ankle; it also fills the natural hollow spaces between the ankle and the Achilles tendon. The shape of the anklet thus gives a resilient support on the lower side of the ankle, filling in the places which would otherwise be unsupported by the boot. The anklet **10** thus makes the boot snug all around, and soreness due to the weakness of unsupported ankles is completely eliminated, and foot comfort is assured.

The lower edge of the anklet **10** is flared out even further than the upper edge and extends out over the front of the foot to provide an outcurved tongue **18** which protects the foot from the boot laces and boot tongue even where the laces begin very low, as in a football shoe or ski boot. This resilient tongue **18** absorbs almost all the pressure in the foot region which would be caused by tight lacing, and the inner surface of the anklet (which is against the foot) is always smooth. The pressure against the foot is uniform at all times.

As shown in Figs. 1 and 2, the upper edge **20** of the anklet is also curved convexly out toward the sides and front. Because of the curve **20** the anklet **10** protects the front part of the ankle region against the boot tongue, the boot laces, and the top edge of a short boot. Ski boots, in particular, are apt to bite into the front part of the leg, especially when the skier bends forward on a downhill run. The curve **20** of the anklet **10** extends above this critical area, and the wearer may lean forward without becoming unduly fatigued due to chafing, bite, creases, blisters, and other injuries to the leg. The same shape also protects the ankle from kicks, knocks, and abrasions such as are common in football, hockey, and other contact sports.

The anklet **10** is held firmly in place at all times by an understrap **21** of elastic, pure gum rubber, or other flexible material, which is preferably secured across the lower edges of the anklet **10** at **22** and **23**. The preferred manner of securing the understrap **21** is shown in Figs. 1, 2 and 3, where the anklet is cut into or split apart at **22** and **23**. These cuts or splits may be made by a small circular saw and are preferably about three-fourths inch deep and between one-

and-a-half and two inches long. The ends of the understrap **21** are inserted into these openings **22** and **23** and cemented there, the whole opening being completely closed and sealed on both sides of the understrap **21**. Secured in this manner, the ends of the understrap **21** cannot chafe the foot or make an uncomfortable bump between the foot and the boot. Moreover, the understrap is held in securely and cannot come loose even when stretched considerably.

An important feature of my improved anklet is the way in which it is secured together around the foot. The fastening means lies between, and adjacent to, the sponge rubber ends of the anklet so that there is no thickening of the anklet at the fastening point. The fastening means is cushioned by the proximity of the sponge rubber ends of the anklet and, being positioned in the hollow space behind the ankle bone, the fastening means cannot be felt by the wearer. Several species of fastening means are shown with different methods of attaching them to the ends of the anklet, and all of them have this feature in common, that they are devised to prevent the fastening means itself from chafing the foot or ankle.

The anklet **10** shown in Figs. 1 to 4 is held together around the ankle by a snap fastening means secured to each end of the anklet and preferably adapted to rest against the inside of the foot, back of the ankle. Strong tapes **24** and **25** of suitable material such as fabric and elastic may be glued, sewed, or cemented around both sides of each end **15** and **14** of the anklet. Preferably the tapes **24** and **25** are cemented in the manner shown. They are wound vertically around the entire end so that they are secured to both surfaces, to the side edges, and to the end edge to give 100% surface adhesion. Each tape overlaps slightly on one of its own surfaces, for additional security. The sockets **26** and snaps **27** are held by the substantial portions of the tapes **24** and **25** which extend beyond the ends **14** and **15**. In this construction the snapped fasteners are narrower than the rubber anklet **10** and there is no opportunity for the snaps to chafe against the foot and ankle. As can be seen from Fig. 3, the anklet is of uniform thickness when the snaps **26** and **27** are fastened.

Fig. 5 shows a modification in which tapes **34** and **35** are cemented into slits **32, 33** in the end of the anklet, like the understrap **21**. The slits **32, 33** extend from the top to the bottom of each edge **14, 15**, and the bands **34** and **35** are cemented inside their respective slits. Here the foot is further protected from any chance of chafing because the attaching tape is enclosed in sponge rubber.

Fig. 6 shows an anklet having a zipper fastener **40**. The tapes **41** and **42** which hold the zipper halves may be stitched around or cemented into the rubber sheet **10** adjacent the ends of the anklet. Here they are shown cemented inside the slits **32, 33** like the bands **34**, and **35** in Fig. 5. Preferably the zipper tapes **41** and **42** are so positioned that the ends **14** and **15** of the anklet practically abut when the zipper **40** is fastened.

In all of these forms there is no substantial increase in thickness due to the fasteners. The tapes are narrow and do not add substantial thickness where they are secured to the anklet, and the snaps or zippers are located in the thin tape which projects beyond the ends **14** and **15** and are protected by the adjacent sponge rubber. All this is in marked contrast to prior art

devices where the fastening means resulted, one way or another, in adding bulk and extraneous surfaces to the anklet which tended to chafe the foot and ankle.

In all the forms discussed so far, the anklet **10** is put on by slipping the foot over the understrap **21** and underneath the rest of the anklet. The tongue **18** and the rear fasteners are positioned on the foot and then the anklet is snapped or zipped together. The anklets may be worn directly over the foot but even better results are obtained when the anklets are worn between two pairs of socks.

Another modification is shown in Fig. 7, here the two ends **14** and **15** of the anklet are permanently secured together by an elastic band **50**, which is cemented into the slits **32** and **33**, in the manner described in connection with Fig. 5. This form of the invention is never fastened or unfastened. It is put on by stretching the band **50** and then slipping the anklet on around the foot and ankle, and it is taken off by reversing the procedure. The inset band, by being more elastic than the sponge rubber body of the anklet, absorbs the strain which is present when the anklet is stretched to pass over the larger portion of the foot. Without the elastic band, the anklet would be difficult to put on and, at the same time, would be subject to bursting strain when passing on or off over the larger portion of the foot. This form of anklet operates the same in all other particulars as the form previously described. As in other forms of the device, the fastening means which joins the two ends of the sponge rubber together are thin so that the thickness at the juncture is less than the thickness of the body of the anklet.

With any of these types of anklet disclosed herein the boot may be laced as tightly as may be desired, and the compression will be absorbed by the sponge rubber, not by the foot. Athletes using this anklet find that their ankle is given added support and is protected from chafing, but still is free to breathe. Because of its softness and resiliency, the anklet **10** permits much tighter lacing of the boot, and the tight lacing gives snugness and added support and protection to the ankle. All the natural hollow spaces are filled and the pressure is distributed more uniformly over the foot. There is no possibility of the anklet itself causing chafing or soreness, and all the minor deficiencies of fit in the shoe are corrected.

I claim:

1. An article of clothing for protecting the foot and ankle from chafing and other injury traceable to tightly laced boots, for filling the hollow places adjacent the ankle, and for supporting the foot and ankle against strain, comprising an anklet of multi-perforated sponge rubber adapted to be secured around the ankle and the upper portion of the foot, said anklet being flared out from a narrow portion, adapted to lie at the rear of the ankle, toward the sides and front, so that said anklet fills the hollows adjacent the ankle as well as covering all the ankle itself, said anklet being widest at the front and providing there a convexly curved upper portion which extends substantially above the height of the ankle to protect the limb from the bite of a short boot and providing a tongue at the lower front edge which extends over a substantial upper portion of the foot.

2. The article of claim 1 in which there is a resilient understrap whose ends are cemented inside slit openings on opposite sides of the lower edge of said anklet.

3. The article claimed in claim 1 in which said anklet is a separable flat piece of perforated sponge rubber, having thin tapes secured at each end thereof, said tapes projecting beyond the ends thereof, and mating fastening means secured to the projecting portions of said tapes, the total thickness of said fastening means when fastened being less than the thickness of said piece of sponge rubber.

4. The article of claim 3 in which said tapes are wound around said ends and bonded thereto on both sides, both side edges, and the end edge.

5. The article of claim 3 in which said ends of said anklet are split and tapes holding the mating fastening means are cemented to the anklet inside the split.

6. The article of claim 3 in which said fastening means comprises a series of snap fasteners secured in the projecting portions of said tapes.

7. The article of claim 3 in which said fastening means comprises a zipper fastener secured to the projecting portions of said tapes.

8. The article of claim 1 in which said anklet is a flat strip permanently joined together at its ends by an elastic band which may be stretched to permit the anklet's being placed on the foot and ankle.

9. An article of clothing for protecting the foot and ankle from chafing and other injury traceable to tightly laced boots, for filling the hollow places adjacent the ankle, and for supporting the foot and ankle against strain, comprising an anklet of sponge rubber having a multitude of perforations and adapted to be secured around the ankle and the upper portion of the foot, said anklet being a separable sheet having thin tapes secured at each end thereof, said tapes projecting beyond the ends thereof, and mating fastening means secured to the projecting portions of said tapes adjacent the ends of the anklet the total thickness of said mated fastening means when fastened being less than the thickness of said sponge rubber.

10. The article of claim 9 in which there is a resilient understrap whose ends are cemented inside slit openings on opposite sides of the lower edge of said anklet.

11. The article of claim 9 in which said tapes are wound around said ends and bonded thereto on both sides, both side edges, and the end edge.

12. The article of claim 9 in which said ends of said anklet are split and tapes holding the mating fastening means are cemented to the anklet inside the split.

13. The article of claim 9 in which said fastening means comprises a series of snap fasteners secured in the projecting portions of said tapes.

14. The article of claim 9 in which said fastening means comprises a zipper fastener secured in the projecting portions of said tapes.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,081,366	Collis	Dec. 16, 1913
1,798,471	Janke	Mar. 31, 1931
2,358,966	Einstoss	Sept. 26, 1944