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ANKLE SUPPORT

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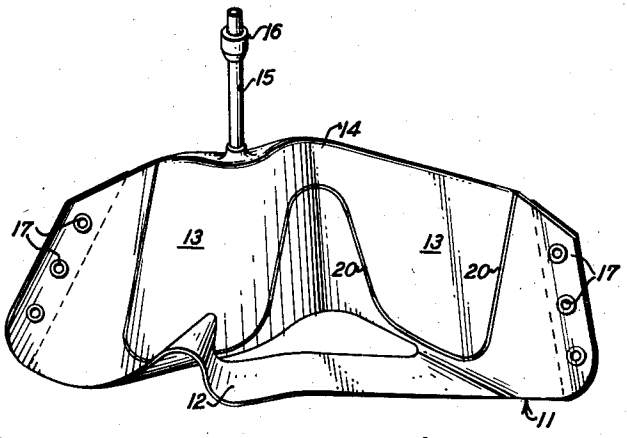


FIG. 1

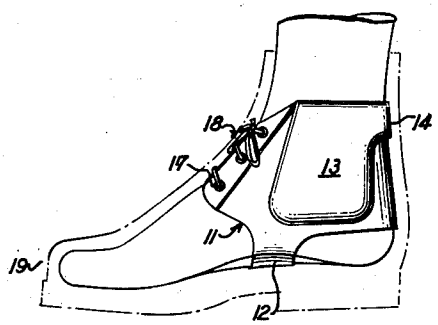


FIG. 2

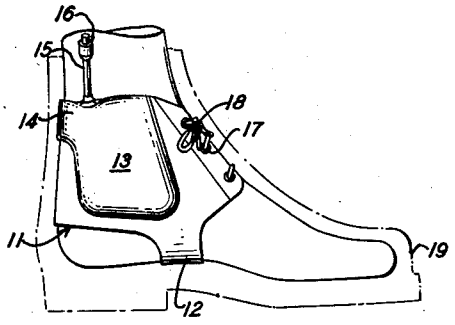


FIG. 3

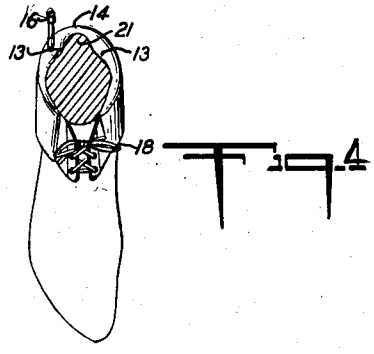


FIG. 4

INVENTOR

EFRAM I. WEISS

BY Fisher & Christen

ATTORNEY

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ANKLE SUPPORT

Efram I. Weiss, New York, N. Y.

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8 Claims. (Cl. 128—166)

The present invention relates to an ankle support generally, and more particularly to an ankle support for supporting and protecting the ankle and associated parts of the human foot in high-topped shoes used in sports, including skating, skiing, and the like.

Persons engaging in strenuous sports, including skating, skiing, mountain climbing, and the like, require efficient and comfortable ankle support. In the past, high-topped shoes used with such sports have been found to chafe and irritate the foot portions. Prior art methods of insuring a tight fit of the shoes have necessitated the use of ankle straps, and the like, which often aggravate the chafing and discomfort.

The present invention, accordingly, is directed to an improved ankle support for use in high-topped shoes which avoids irritation and chafing and yet provides adequate support by filling out the voids and hollows between the shoe and the foot around the ankle and heel portions.

Specifically, the ankle support of the present invention supports the wearer's ankle by filling the vacant spaces between the shoe and the wearer's foot adjacent the ankle on either side of the Achilles' tendon, thus serving as a wedge to prevent slipping and up and down movement of the heel within the shoe.

The ankle support of the present invention is inexpensive of manufacture, durable and simple in construction. Other objects and advantages of the invention will be apparent.

The present invention generally comprises an ankle support comprising a body portion adapted to encircle the ankle at the ankle bone, the body including a stirrup member to pass under the foot of the wearer, detachable fastening means for adjustably securing the front portions of the support to each other, the body portion being provided with a pair of pneumatic cushions adapted to rest against each ankle bone on either side of the Achilles' tendon of the wearer.

The invention further comprises such a support wherein the pneumatic cushions are connected by an inflatable connector adapted to extend around the Achilles' tendon. The invention further comprises such a support wherein said pneumatic cushions are inflatable through a flexible tube and the inflating fluid is confined by means of a valve carried by said tube. The invention additionally comprises such an ankle support wherein the fastening means comprise eyes carried on the body portion and laces for lacing the ends of the body portion together at the wearer's instep.

Referring to the drawings;

Fig. 1 is a view of the inside of the ankle support, shown removed from the wearer's foot.

Fig. 2 is a view in elevation of the inside of the wearer's foot showing the ankle support in position and the boot in dot-dash lines.

Fig. 3 is a view in elevation of the outside of the wearer's foot showing the ankle support in position and the boot in dot-dash lines.

Fig. 4 is a front top perspective view of the ankle support on the wearer's foot.

The ankle support comprises a body portion **11** formed of rubber or flexible plastic material having a flexible stirrup member **12** adapted to pass under the wearer's foot at the arch. A pair of pneumatic cushions or inflatable bladders **13** of impervious material are carried on said support **11** at positions such that they cover the ankle bones and extend rearwardly thereof on either side of the Achilles' tendon **21**. An inflatable connecting portion **14** connects the two cushions **13** and the cushions are inflatable through tube **15**, preferably flexible, provided with a suitable valve **16**. The ends of the body portion **11** are provided with detachable fastening means for adjustably securing them together at the instep of the wearer's foot. Lacing eyes **17** and a lace **18** may be used as shown in the drawings or any equivalent fastening means such as straps, buckles, hooks and the like may be used.

As shown in Fig. 1, the pneumatic cushions **13** and the connecting portion **14** are preferably formed integrally with the body portion **11**, by providing a doubled piece of rubber or plastic material of the general shape shown and sealing the two portions together as at **20** to define the cushion members. Other types of construction may be employed, however, if desired, such as uniting the pneumatic cushions to the ankle-encircling body portion.

In use the ankle support with the cushions deflated is placed on the wearer's foot to encircle the ankle with the flexible stirrup **12** extending under the arch. The end portions are then laced tightly at the instep and the high-topped boot or shoe placed on the foot. After the shoe is laced up comfortably, the pneumatic cushions are inflated through tube **15** by means of a suitable pump and the valve **16** is then closed to retain the air or other inflating fluid in the cushions. The cushions are preferably inflated to such a degree as to completely fill the vacant spaces between the rear of the ankle and the shoe **19**.

The cushions thus fill out the voids between the shoe and the rear of the ankle on either side of the Achilles' tendon, providing comfortable support and protection for the ankle. The inflated cushions wedge between the shoe and the portions rearwardly of the ankle on either side of the Achilles' tendon, thus preventing the wearer's heel from sliding up and down within the shoe. The inflatable connecting portion **14** additionally fills the void between the shoe and the Achilles' tendon, thus providing further support and preventing up and down motion of the heel within the shoe. At those positions where the wearer's foot normally tightly contacts the shoe, such as the forward portions of the ankle bones, the cushions will not be inflated to any appreciable degree. Thus, the ankle support of the present invention gives support where it is needed on either side of the Achilles' tendon and rearwardly of the ankle bone while not causing discomfort in those regions where the shoe is in firm contact with the wearer's foot.

While the invention has been described in terms of certain embodiments, such description is to be interpreted in an illustrative rather than in a limiting sense. It will be apparent to those skilled in the art that many modifications may be devised and it is intended to cover all such modifications as fall within the spirit and scope of the appended claims.

I claim:

1. An ankle support and protector, comprising a body portion adapted to encircle the ankle at the ankle bone, said body including a stirrup member to pass under the foot of the wearer, detachable fastening means for adjustably securing the front portions of the support to each other, said body portion being provided with a pair of pneumatic cushions adapted to rest against and cover

each ankle bone, on either side of the Achilles' tendon of the wearer.

2. The ankle support set forth in claim 1 wherein said detachable fastening means comprise lace means adapted to be fastened at the wearer's instep.

3. The ankle support set forth in claim 1 including an inflation tube for inflating said cushions and a valve carried by said tube for retaining the inflating fluid in said cushions.

4. An ankle support and protector, comprising a body portion adapted to encircle the ankle at the ankle bone, said body including a stirrup member to pass under the foot of the wearer, detachable fastening means for adjustably securing the front portions of the support to each other, said body portion being provided with a pair of interconnected pneumatic cushions adapted to rest against and cover each ankle bone, said pneumatic cushions being connected by an inflatable connector adapted to extend around the Achilles' tendon of the wearer.

5. The ankle support set forth in claim 4 wherein said detachable fastening means comprise lace means adapted to be fastened at the wearer's instep.

6. The ankle support set forth in claim 4 including an inflation tube for inflating said cushions and a valve

carried by said tube for retaining the inflating fluid in said cushions.

7. An ankle support comprising a flexible band adapted to encircle the ankle of the wearer's foot, said band having two terminal portions adapted to meet at the instep of the wearer's foot, means for fastening said terminal portions together at the instep, a stirrup strap secured at each end thereof to the band and adapted to be positioned under the arch of the wearer's foot and a pair of pneumatic cushions carried by said band adapted to rest against and cover each ankle bone and extend rearwardly of each ankle bone on either side of the Achilles' tendon of the wearer's foot.

8. The ankle support set forth in claim 7 wherein said pair of pneumatic cushions are interconnected by an inflatable portion adapted to extend around the Achilles' tendon of the wearer's foot.

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