Sept. 2, 1969 D. H. CONWAY 3,464,125

SNEAKER

Filed Jan. 9, 1967 2 Sheets-Sheet 1

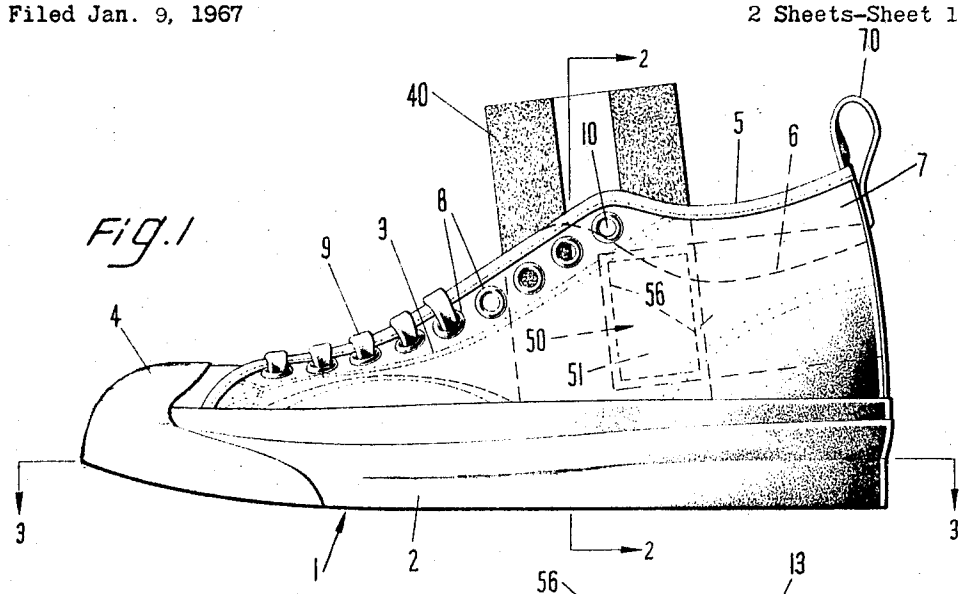


Fig. 1

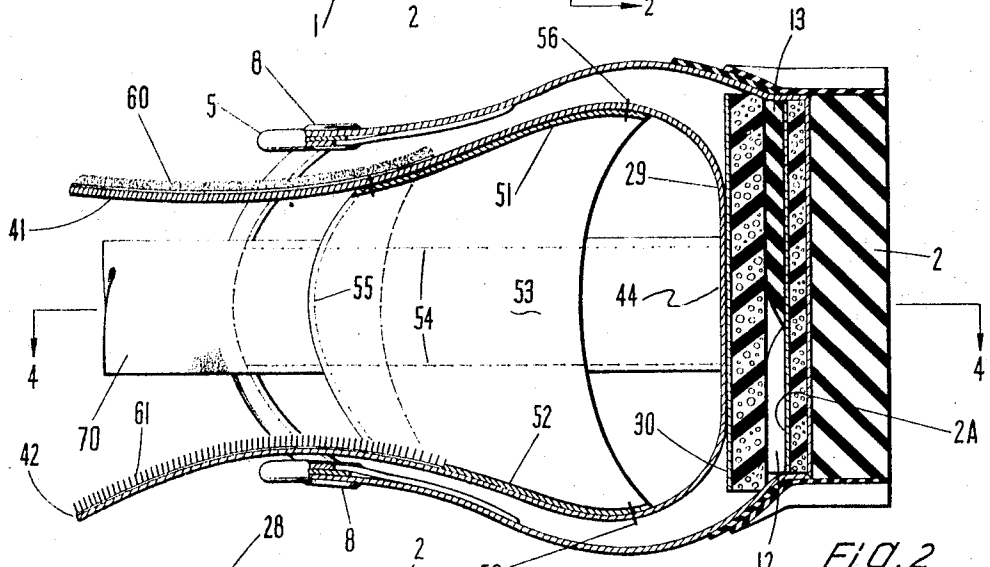


Fig. 2

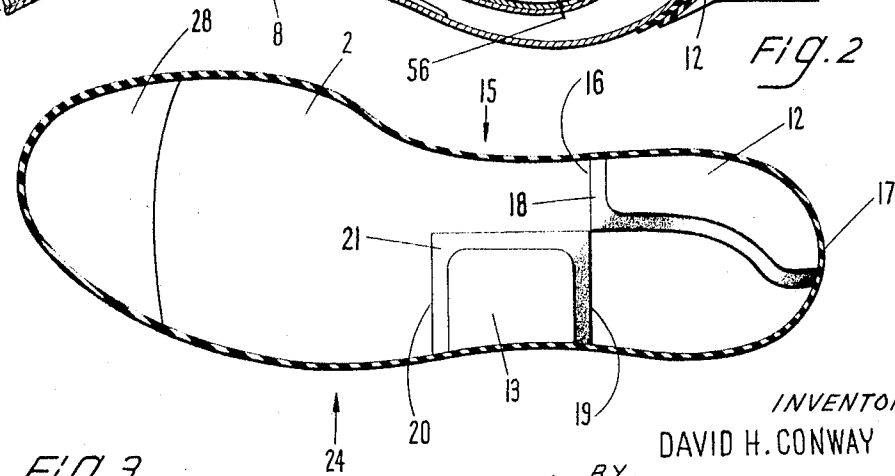


Fig. 3

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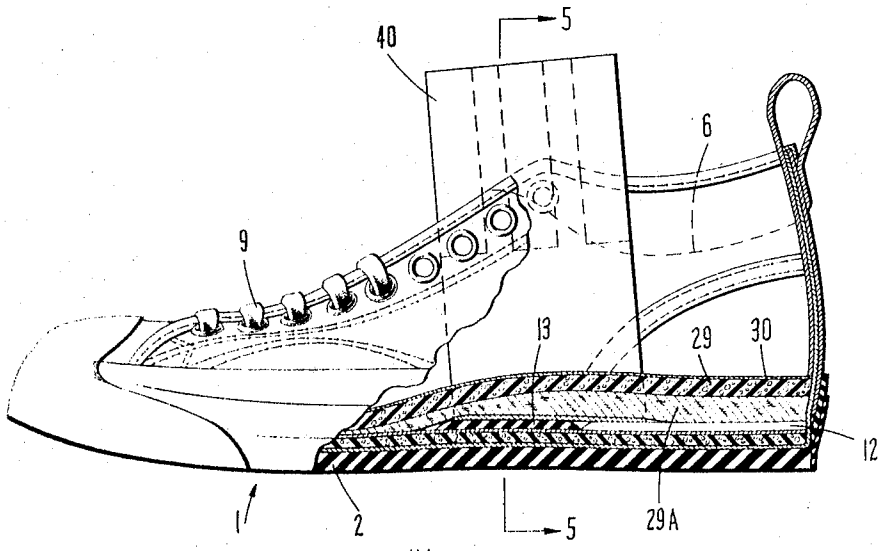


Fig. 4

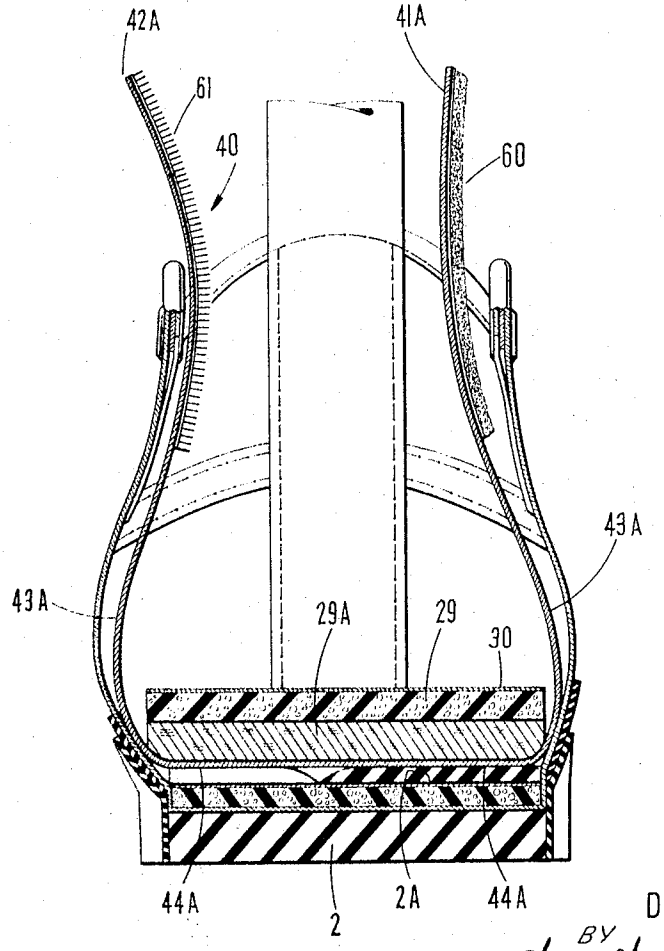


Fig. 5

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SNEAKER

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Int. Cl. A43b 5/10, 23/28, 7/16
U.S. Cl. 36—2.5 10 Claims

ABSTRACT OF THE DISCLOSURE

An athletic sneaker with restraining means in the sneaker consisting of an M-shaped resilient elastic fabric band adjustably engageable about a wearer's instep with the bight of the band under the instep of the sneaker. A second band is secured to the rear quarter of the shoe and engages the fabric band. Supports under the insole are also provided.

BACKGROUND OF THE INVENTION

The present invention relates to a sneaker having support means for engaging and restraining foot elongation and other stresses.

One of the most common foot troubles that originates from using sneakers and in particular tennis sneakers is that damage to one foot arises from foot elongation. When one wearing sneakers such as a tennis sneaker stops suddenly or quickly and suddenly changes direction there is a tendency for the foot to elongate or spread. Quite frequently this elongation forces the toes against the ends of the sneakers. This elongation in turn often results in sore toes or injuries which in some instances are termed athlete's foot on the toenail. This is a type of injury in which the enlarged toenail becomes discolored. The present invention is designed to overcome this difficulty by providing means for preventing foot elongation.

SUMMARY OF INVENTION

These means preferably are in the form of a flexible resilient fabric band means secured to the shoe and designed to fit over the wearer's instep and which restrains the instep against the forward elongation. This fabric band is also designed to prevent undue flattening of the inner arch and further acts as a massager because of its resilient stretchable consistency.

BRIEF DESCRIPTION OF DRAWINGS

The present invention is also designed to provide a pad of deformable material in the toe region so as to permit deformation of the sole upon application of pressure through the wearer's toe. These and other objects and advantages of the present invention will be more clearly understood when considered in conjunction with the drawings in which:

FIG. 1 is a side elevational view of a tennis sneaker embodying my invention;

FIG. 2 is a schematic cross sectional view taken along the line 2—2 of FIG. 1;

FIG. 3 is a somewhat schematical cross sectional view taken along the line 3—3 of FIG. 1;

FIG. 4 is a partially cross sectioned side elevation with a cross sectioned portion taken along the line 4—4 of FIG. 2; and

FIG. 5 is a cross sectional elevation of a modification of the preferred embodiment of the invention shown in FIG. 1 with a cross section of FIG. 5 taken along a line

substantially similar to the cross sectional view of FIG. 2.

DESCRIPTION OF PREFERRED EMBODIMENTS

The present invention will be described primarily in conjunction with a tennis sneaker. However, it should be understood that the invention herein disclosed may be embodied in footwear of other designs for other purposes, and in particular in other types of athletic footwear.

A tennis sneaker **1** is formed with a conventional outer sole **2** of rubber or similar material and an upper **3** which may be formed of canvas or other suitable material conventionally used in fabrication of sneakers. A conventional rubber toepiece **4** may be formed on a sneaker. The sneaker is preferably formed with a relatively high rear quarter **7** having an upper edge **5** substantially higher than the height of a conventional tennis sneaker. Dotted line **6** illustrates the location of the upper edge of a conventional tennis sneaker which as illustrated would ordinarily extend just below the heel of the wearer. The sneaker is conventionally provided with a tongue (not shown) and eyelets **8** through which a shoelace **9** may be threaded in a usual fashion. Preferably an extra eyelet **10** at the upper end of the top of each row of eyelets is provided so that the extra height of the snaker may be accommodated.

Positioned above the outer sole **2** and outer sole liner **2A** and preferably secured to the upper surface of the outer sole **2** or to a midsole are a pair of wedges **12** and **13** (FIG. 3). Wedge **12** is a heel wedge which borders the inner side **15** of the sneaker from the instep area **16** rearwardly, to the rear **17** of the heel. This heel wedge covers only the inner portion of the heel and may have a thickness that will vary depending upon the size of the shoe and the desired elevation up to a thickness of approximately ¼". The edges of the wedge **12** are preferably skived as illustrated at **18** to present a feathered edge. The wedge **13** is a wedge located in the instep region from a transverse line **19** that preferably defines the forward portion of the wedge **12** forwardly to a forward edge **20** that is about aligned with the forward edge of the instep of the shoe. Preferably this wedge **13** is also skived to form a feathered edge as illustrated at **21**. This wedge **13** may be positioned on the outer side **24** only of the shoe. The wedge **13** may be a thickness equal to the thickness of the wedge **12**. Also positioned above the upper surface of the outer sole liner **2A** is a wedge of kneadable or deformable nonresilient material forming a pad **28** of about the same thickness as wedges **12** and **13**. This pad or wedge **28** is designed to be deformed by the toe pressure of the wearer. This material will retain an impression of the wearer's toes as impressed through the inner sole **29**.

Positioned above pad **28** and wedges **12** and **13** is a lift **29A**. This lift **29A** extends from the heel forwardly to the metatarsal area. The lift **29A** is tapered preferably from a thickness of about ⅜ of an inch at the heel to a feathered edge at the metatarsal area. This lift covers the wedges **12** and **13** and functions to raise the heel and thereby relieve pressure tensions on the calf muscles. This lift functions cooperatively with the bands hereafter described that engage the instep to restrain the foot of the wearer in a comfortable position with tensions in the calf muscles relieved while at the same time the bands restrain undesired forward thrust of the foot.

Positioned above lift **29A** is a cellular inner sole **29** of conventional shape but preferably having a thickness of at least ¼". The upper surface of the inner sole **29** is conventionally covered with fabric or material as illustrated in **30**.

Means are provided in the shoe to engage in the instep area of the wearer's foot and hold the foot securely within the shoe against stresses that tend to elongate the foot and force it forwardly toward the toe of the shoe. These means cooperate with lift **29A** and comprise primarily a first fabric band **40**. This fabric band **40** is preferably formed of an elongated resilient stretchable material such as an elastic fabric material. The fabric material is generally formed into shape having end sections **41** and **42** interconnected by an intermediate bight section **44** (FIG. 2). These end sections **41**, **42** extend upwardly on either side of the sneaker at the instep region immediately adjacent and on the inner side of the upper. The bight section **44** is positioned parallel to the inner face of insole **30** and is connected to the lower or inner ends of the end sections **41** and **42**. This first fabric band section **40** is secured to the shoe by means of a second flexible fabric band **50** made preferably of the same material from which the first fabric or band is made. The second flexible fabric band is positioned entirely within the shoe and is U-shaped with legs **51** and **52** interconnected by a bight section **53** to form a U-shaped member with the bight of the U extending around the heel or rear quarter of the sneaker's upper. The bight section **53** is suitably secured to the rear quarter of the upper by stitching **54** and **55** or by other suitable means. The integrally connected legs **51** and **52** in turn are secured to the inner or lower portion of the end sections **41** and **42** respectively by stitching **56** or other suitable means.

Means are provided for adjustably securing the free ends of the band sections to one another so that they may be tightened over the top of the wearer's instep. Preferably these means comprise a material commonly known as "Velcro." This material consists of interengageable pads of material. One pad **60** of material comprises a fuzz or like material suitably formed or secured on a base fabric. The other pad comprises a series of small hook-like members that are made of material such as nylon and illustrated at **61**. These hook-like members are anchored at one end in a base fabric and are free at their hook end to engage the other pad **60** when pressed into contact with it. The pad **60** is secured to the outer surface of leg **41** which in turn is positioned on the instep side of the shoe. The hook-like members **61** are secured to the inner or lower surface of section **42** and are adapted to be laid over pad **60** in facing relation with it for adjustably interengaging end sections **41** or **42**. The sneaker may also be formed with a loop **70** secured to the rear of the sneaker by suitable and conventional means.

Also contemplated by the present invention is modification of the preferred embodiment. Except as otherwise described this modification is the same as the preferred embodiment. End sections **41** and **42** are formed of separate lengths of flexible resiliently stretchable fabric material instead of being integrally connected by bight **44**, with these separate sections **41** and **42** being anchored or otherwise suitably secured at their inner or lower ends to the sole construction of the sneaker by a suitable means. The said second flexible fabric band **50** is optional in this construction.

In FIG. 5 there is shown a modification of the invention in which the construction is similar to that previously described except as otherwise described herein. In this construction the bands **41A** and **42B** are formed similarly to the end sections **41** and **42** of band **40** of the preferred modification. However, these bands **41A** and **42A** are separately formed and are attached to the sneaker only at their lower ends **43A** with the lower ends of these bands suitably anchored by cement or other means to the outer sole **2** at **44A** by means such as cement or the like. These bands **41A** and **42A** may be used in the same fashion as the band **40** previously described.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. In a footwear construction with an upper having a rear quarter, means positioned within the footwear construction for engaging the wearer's foot comprising:

a pair of fabric band sections with each having one end adapted to extend above the inner sole and below and under the arch of the wearer's foot at the instep region and the other end adapted to extend over the top of the wearer's foot at the instep region forward of the ankle, means securing each of said band sections at said one end to said footwear, and means for adjustably interengaging said free ends of said fabric bands, said fabric band sections and said interengaging means arranged to secure the foot and hold it against forces that tend to elongate the foot and force it toward the toe area of the footwear construction.

2. A footwear construction as set forth in claim **1** wherein said fabric band sections comprise a single first band of resiliently stretchable material with said fabric band sections integrally connected by an intermediate section which normally extends above the inner sole and below the arch of the wearer's foot whereby said intermediate section may be engaged about arches of the wearer's foot to restrain undue flattening.

3. A construction as set forth in claim **1** wherein said means securing said band sections comprises a second flexible fabric band formed in a generally U-shaped and lying within said rear quarter, said U-shaped fabric having a pair of legs interconnected by a bight section, stitching extending through said bight section and into said rear quarter thereby securing said U-shaped fabric to said footwear, and means securing said legs one to each of said ends.

4. A construction as set forth in claim **3** wherein said fabric band sections comprise a single first band of resiliently stretchable material integrally connected by an intermediate section which normally extends below the arch of the wearer's foot, said second flexible fabric band is resiliently stretchable and said first fabric band is secured only to said legs of said second fabric band with at least some portion of said legs adjacent said second fabric band free of said rear quarter.

5. A construction as set forth in claim **4** wherein said means for adjustably interengaging said free ends of said fabric bands comprise a pad with a face of fibrous fuzz and a pad with a face of projecting hooked bristles adapted removeably interengaged by application of pressure thereto, said pads secured one to each of the free end of said fabric band sections.

6. A construction as set forth in claim **5** wherein one pad is secured to the upper surface of the fabric band section on the instep side of the sneaker and the other pad is secured to the lower surface of the fabric band section on the outer side of the footwear, when said band sections are wrapped about the wearer's foot.

7. A construction as set forth in claim **6** having an inner sole formed of resilient compressible cellular material, a pair of wedges adjacent said inner sole, one of said wedges extending from the instep rearwardly and covering the inner portion of the heel, the other of said wedges covering the outer side of the instep only.

8. A construction as set forth in claim **7** having a deformable material positioned adjacent said innersole at the toe area adapted to be molded by application of pressure from the wearer's toe.

9. A construction as set forth in claim **1** having a lift positioned in the heel area and tapered from the heel to a feathered edge in the area of the metatarsal region.

10. A footwear construction as set forth in claim **1** having a pair of wedges adjacent the inner sole, one of the wedges extending from the instep rearwardly and covering

at least the inner portion of the heel, the other of said wedges covering the outer side of the instep only.

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PATRICK D. LAWSON, Primary Examiner

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