Nov. 28, 1961 S. SNITZER 3,010,229

GOLF SHOE

Filed June 28, 1960 2 Sheets-Sheet 1

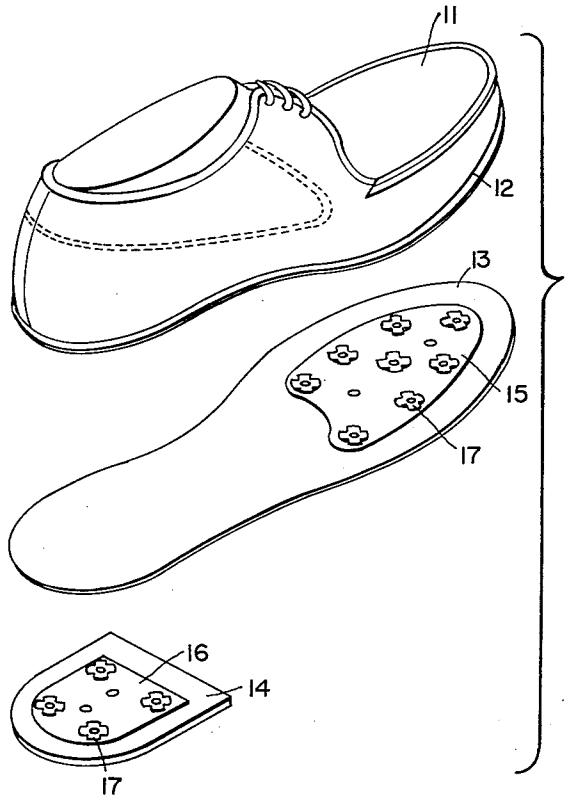


FIG. 1

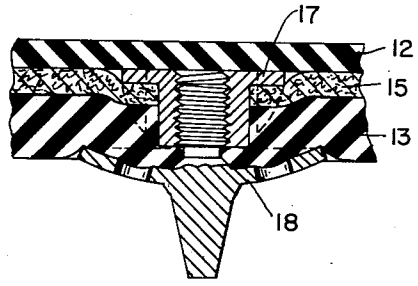


FIG. 2

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Nov. 28, 1961 S. SNITZER 3,010,229

GOLF SHOE

Filed June 28, 1960 2 Sheets-Sheet 2

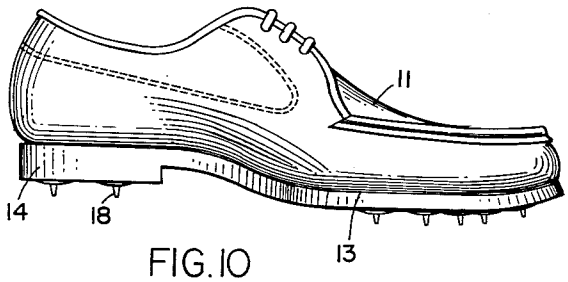


FIG. 10

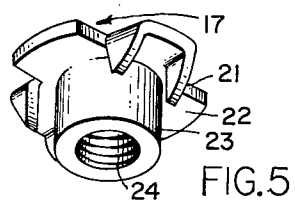


FIG. 5

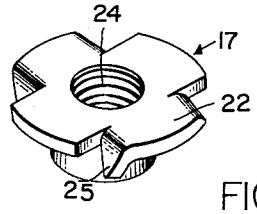


FIG. 6

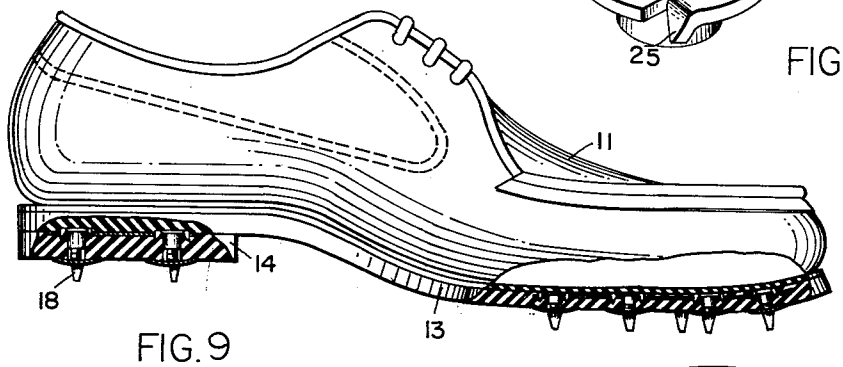


FIG. 9

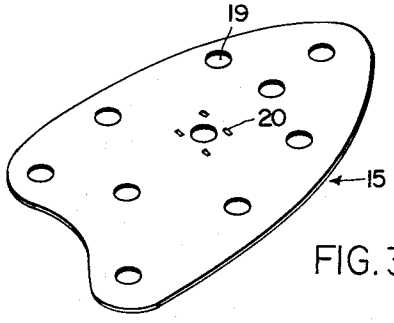


FIG. 3

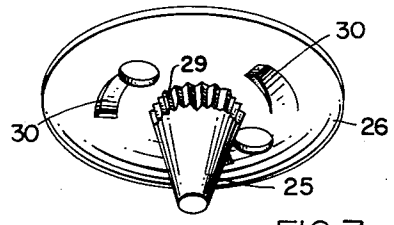


FIG. 7

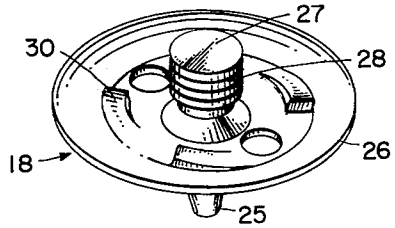


FIG. 8

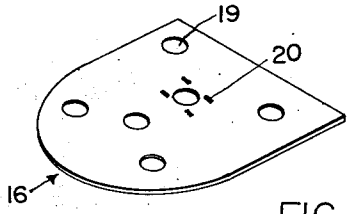


FIG. 4

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United States Patent Office 3,010,229 Patented Nov. 28, 1961

3,010,229

GOLF SHOE

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Filed June 28, 1960, Ser. No. 39,254
3 Claims. (Cl. 36—2.5)

The present invention relates to shoes. More particularly, this invention relates to a flexible sole and heel unit for golf shoes.

In the manufacture of golf shoes, the shoe upper is lasted in the conventional manner and the mid-sole is applied thereto. The outer sole, however, is prepared to receive the golf cleats prior to its application to the shoe. In accordance with this process an appropriate number of apertures are punched in the outer sole. These holes are used for insertion of the golf cleats. The heel is likewise punched with an appropriate number of apertures for the same purpose. A metal plate of sufficient area to cover the holes in the sole is then cut. Holes are then made in this plate which will be in register with the holes in the outer sole when the plate is placed thereon. A plate is then made for the heel in the same manner.

These plates are then applied to the sole and heel and are secured in position by means of cleat holders. The cleat holders are inserted in the holes of the plate and extend into the holes in the sole. Generally, the cleat holders consist of a threaded stem or sleeve portion, which extends into the holes, and a flanged head portion which abuts the metal cleat supporting plate. The cleats are then applied to the cleat holders by means of threads which engage the threaded sleeve member of the holder. Tightening up of the cleats thereby simultaneously secures the cleats in position and firmly affixes the plate to the sole. Since shoe soles are generally made of leather, or rubber metallic plates, such as the one described, are customarily used to support the cleats. In the absence of such a supporting member the deformable nature of the leather would permit the cleats to work loose.

Inherent in golf shoes made in the manner described above, however, are several distinct disadvantages. Such golf shoes are usually quite expensive. Furthermore, they are generally very heavy and lack the flexibility necessary to make them really comfortable. One of the most serious disadvantages, however, is the fact that continued use of the shoe causes the edge of the metal plate to cut the shoe sole.

It is therefore an object of the present invention to provide an improved golf shoe.

Another object of the present invention is to provide an improved flexible outer sole and heel unit for golf shoes.

An additional object of the present invention is to provide an improved flexible sole and heel unit for golf shoes which is less expensive than prior art constructions.

Yet another object of the present invention is to provide a flexible sole and heel unit for golf shoes which is lighter in weight than prior art constructions.

A still further object of the present invention is to provide a sole and heel unit for golf shoes which is more flexible than those of the prior art.

In accordance with the present invention there is provided a flexible sole and heel unit for golf shoes. This unit comprises a flexible resilient outer sole having holes

disposed at preselected points therein. There is also provided a resilient heel having holes disposed at preselected points therein. A thin, light, stiff, deformable plate adapted to support cleats is in contact with the sole and is provided with holes at preselected points therein in registration with the holes in the sole. A thin, light, flexible plate adapted to support cleats is in contact with the heel which is also provided with holes at preselected points therein in registration with the holes in the heel. Cleat holders are disposed in each of the plate holes. Cleats are secured in the holders to provide the golf sole and heel unit.

Also in accordance with the present invention, there is provided a method of making a flexible outer sole and heel unit for a golf shoe. In accordance with the method, holes are punched in the outer sole at preselected points. Holes are also punched in the heel at preselected points. Holes are then punched in a thin, light, stiff, deformable plate smaller in area than the sole. These holes are in a configuration such that the holes in the plate will be in register with the holes in the sole. Holes are also punched in a thin, light, flexible plate smaller in area than the heel. These holes are also punched at preselected points such that the holes in this plate will be in register with the holes in the heel. The plates are placed in contact with the sole and heel respectively with the holes in the plates in registration with the holes in the sole and heel. Cleat holders are inserted in each of the holes in the plates, and cleats are attached to the cleat holders to provide the golf shoe sole and heel unit.

For a better understanding of the present invention, together with other and further objects thereof, reference is made to the following description taken in connection with the accompanying drawings and its scope will be pointed out in the appended claims.

In the drawings:

FIG. 1 is an exploded perspective view of a golf shoe illustrating the flexible sole and heel unit of the present invention;

FIG. 2 is an elevational section of a portion of the flexible sole and heel unit of the present invention illustrating the structure of an attached cleat;

FIG. 3 is a perspective view of a sole plate used in the present invention for supporting the golf cleats;

FIG. 4 is a perspective view of a heel plate used in the present invention for supporting golf cleats;

FIG. 5 is a perspective view of a cleat holder such as used in the present invention;

FIG. 6 is a different perspective view of the cleat holder of FIG. 5;

FIG. 7 is a perspective view of a cleat such as used in the present invention;

FIG. 8 is a different perspective view of the cleat of FIG. 7;

FIG. 9 is a perspective view, partly in section, of a golf shoe having the flexible sole and heel unit of the present invention; and,

FIG. 10 is a perspective view of the golf shoe illustrated in FIG. 9.

Referring now to the drawings and with particular reference to FIG. 1, there is here shown in exploded view, a golf shoe having a shoe upper **11**, mid-sole **12**, outer sole **13** and heel **14**. Also visible in this figure are the sole cleat supporting plate **15**, heel cleat supporting plate **16** and cleat holders **17**.

Illustrated in FIG. 2 is a detailed elevational section of a portion of the flexible sole and heel unit of the present invention showing the means of attachment of a cleat **18** to the outer sole **13** and the relative positions of the cleat holder **17** in regard to the cleat supporting plate **15** and mid-sole **12**.

Further details concerning the structure of this invention may best be described by a reference to FIGS. 3–8 of the drawings which illustrate the cleat **18**, cleat holder **17** and cleat supporting plates **15** and **16**. For example, the sole and heel cleat supporting plates **15** and **16** in a preferred embodiment of the invention are formed from a thin, fibrous material which has the proper degree of stiffness imparted to it by means of resin impregnation. The sole and heel plates **15** and **16** should be substantially thinner than the sole so as not to add excessive weight to the shoe, nor seriously impair the flexibility of the sole. The plates **15** and **16** should, for obvious reasons, be smaller in area than the sole and heel respectively and have apertures **19** therein which are adapted to receive the cleat holders **17**. The number of apertures **19** will vary, for example, from 8 to 10 on the sole cleat supporting plate **15** and possibly from 4 to 6 on the heel cleat supporting plate **16**. The holes **19** may be die cut or formed by some other suitable means.

Also appearing on the sole and heel cleat supporting plates **15** and **16** are smaller holes **20** which are adapted to receive the prongs **21** of the cleat holders as more particularly illustrated in FIGS. 5 and 6. The cleat holder **17** comprises a flanged head **22**, and a sleeve or stem portion **23** which may have threads **24** as indicated. The prongs **21** may be formed by means of cutting the circular head in four places and folding down the corners, as will be obvious from an examination of FIGS. 5 and 6.

The construction of the cleat **18** is illustrated in detail in FIGS. 7 and 8. Here it may be observed that the cleat **18** has a tooth **25** a flange portion **26** and a threaded member **27**, which is coaxial with the tooth **25** and which is adapted for engagement with the cleat holder by means of threads **24** on the cleat holder sleeve **23** and threads **28** on the cleat member **27**. To facilitate tightening of the cleat, a special tool may be used which will engage the serrations **29**, at the base of the cleat tooth **25**, and holes **30** in the cleat flange. To prevent loosening of the cleat once it is tightened, bosses **30** may be formed at several points on the flange.

FIGS. 9 and 10 illustrate a golf shoe embodying the sole and heel unit of the present invention. The following steps are illustrative of the method of manufacture of such a shoe.

(1) The shoe upper **11** is lasted in a conventional manner which involves the usual assembly techniques of pulling the stitched leather over a form, side lasting either by stitching or through the use of a thermoplastic cement and, for example, cement toe lasting.

(2) The mid-sole **12** is cemented to the upper **11** and may be additionally stitched with thread through the upper **11** and inner sole.

(3) The outer sole **13** is cut to size and is perforated to form the holes **19**.

(4) The heel **14** is cut to size and perforated with the holes **19**.

(5) The fiber cleat supporting plate **15** for the sole **13** is cut to size and perforated with the holes **19** and smaller holes **20**.

(6) The fiber cleat supporting plate **16** for the heel is cut and punched with holes **19** and smaller holes **20**.

(7) The fiber sole cleat supporting plate **15** is cemented to the outer sole **13**.

(8) The fiber heel cleat supporting plate **16** is cemented to the heel **14**.

(9) The cleat holders **17** are inserted in the holes **19** with each prong **21** falling into a smaller hole **20**.

(10) The outer sole and heel unit is then placed on a pressure die having a hole cut out for and in registration with each hole in the sole and heel unit so as not to damage the stems or sleeves **23** of the cleat holders.

(11) The cleats **18** are then screwed on to the sole and heel unit and secured into firm engagement with the cleat holders **17**.

(12) The outer sole and heel unit with fiber plate and cleat holders in place are then cemented and/or stitched and pressed to the mid-sole **12** and shoe upper **11**.

In a preferred embodiment of the present invention, the outer sole **13** and heel **14** are, for example, formed from crepe rubber. Holes punched in the outer sole **13** are, for example, $11/32$ inch in diameter. The holes in the heel **14** are, for example, also $11/32$ inch. The fiber sole cleat supporting plate **15** and heel cleat supporting plate **16** are, for example, $3/32$ inch and are perforated with holes $19/32$ inch in diameter. The holes **20** may be #3 holes. The thickness of the mid-sole **12** may be, for example, $5/16$ inch. The thickness of the outer sole **13** may be, for example, $5/16$ inch. The thickness of the heel is, for example, also $5/16$ inch.

The present invention presents an important step forward in the art of making golf shoes by providing a lighter, more flexible, more durable, less expensive golf shoe than was heretofore available.

While there has been described what is at present considered to be the preferred embodiment of this invention, it will be obvious to those skilled in the art that various changes and modifications may be made therein without departing from the invention and it is therefore, aimed in the appended claims to cover all such changes and modifications as fall within the true spirit and scope of the invention.

What is claimed is:

1. In a golf shoe, an upper, an insole secured to the bottom of the upper, a fibrous lightweight sole plate secured to the lower face of the insole and provided with an aperture therethrough, a cleat holder having a head with a flat upper surface disposed coplanar with the upper surface of the sole plate and with a stem extending through the aperture in the plate, an outsole secured to the bottom surface of the sole plate and having an aperture aligned with the aperture in the plate, said stem of the cleat holder terminating within the aperture in the outsole, and a cleat having an upwardly extending threaded member screwed into the stem of the holder and having a downwardly extending tooth aligned axially with the threaded member and having an outwardly extending flange against the bottom surface of the outsole and which compresses the outsole against the plate when the cleat is tightened in the holder.

2. In a golf shoe as defined in claim 1, a serrated section formed at the top of the tooth of the cleat, and a plurality of holes in the flange of the cleat, said holes and serrated section being adapted to register with a tool for tightening the cleat on the holder.

3. In a golf shoe as defined in claim 1, a fibrous heel plate secured to the bottom of the outsole at the heel portion of the outsole and having an aperture therethrough, a heel cleat holder having a head with a flat upper surface in the plane of the upper surface of the heel plate and a downwardly extending stem disposed in the aperture of the heel plate, a heel secured to the lower surface of the heel plate and having an aperture therethrough registering with the aperture in the heel plate, the stem of said heel cleat holder terminating in said aperture in the heel, and a heel cleat having an upwardly extending threaded member screwed into the stem of the heel cleat holder and having a downwardly extending tooth axially aligned with the threaded member and having an outwardly extending flange engaging the lower surface of the heel and compressing said heel against the heel plate when the threaded member is tightened in the stem of the heel cleat holder,

said fibrous sole plate conforming in shape to the forepart of the outsole and the fibrous heel plate conforming in shape to the heel and each being smaller than the forepart of the sole and heel respectively.

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