March 2, 1971 R. C. MORLEY 3,566,489

REPLACEABLE SPIKE FOR SHOES

Filed July 29, 1969 2 Sheets-Sheet 1

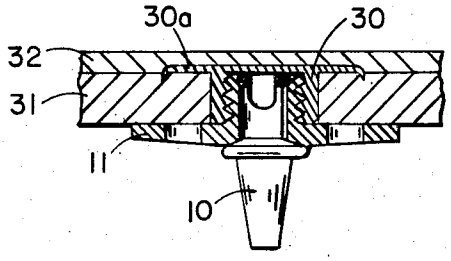

FIG. 1

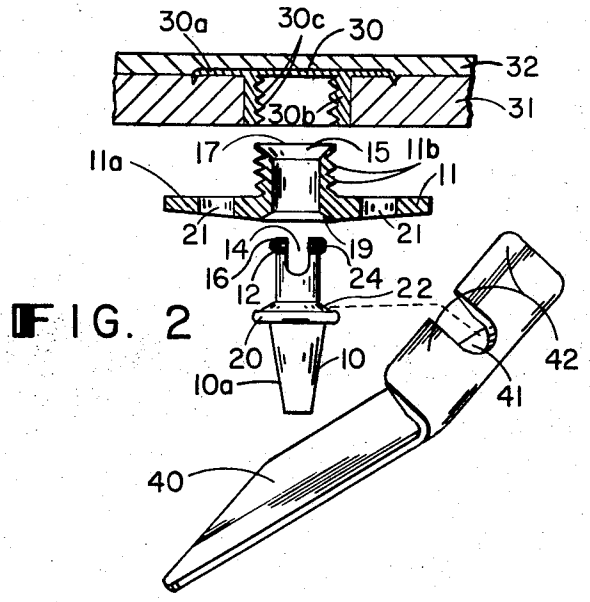

FIG. 2

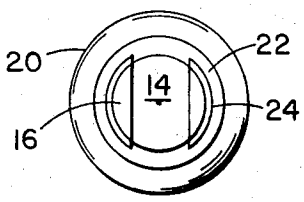

FIG. 3

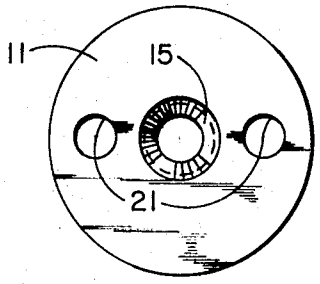

FIG. 4

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REPLACEABLE SPIKE FOR SHOES

Filed July 29, 1969 2 Sheets-Sheet 2

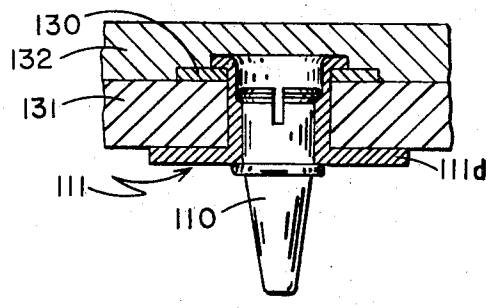

FIG. 5

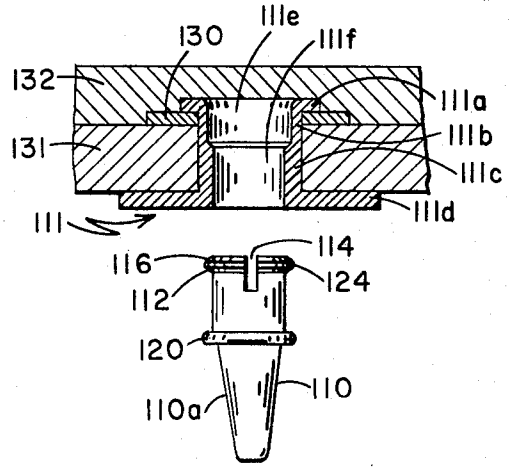

FIG. 6

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3,566,489

REPLACEABLE SPIKE FOR SHOES

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Continuation-in-part of application Ser. No. 767,212, Oct. 14, 1968. This application July 29, 1969, Ser. No. 859,224

Int. Cl. A43c *15/00*

U.S. Cl. 36—67 4 Claims

ABSTRACT OF THE DISCLOSURE

An assembly is described for ready replacement of a shoe spike. The assembly comprises a one or two piece anchor extending through the outer sole and having a flange on the outer sole and a replaceable spike member locked into the retainer member by terminal split finger protuberances.

BACKGROUND OF INVENTION

This is a continuation-in-part of co-pending application Ser. No. 767,212 filed Oct. 14, 1968, now abandoned.

This invention relates to a replaceable spike for shoes. In particular, it relates to replaceable spikes for use on athletic shoes such as golf shoes and the like.

Although there have been a number of replaceable shoe spike constructions described in the past, such constructions generally have one or more disadvantages. Thus, Langer, U.S. 2,607,134 described a replaceable spike which is difficult to remove without causing damage to the shoe. Further, its construction is subject to snapping with continued flexing of the sole of the shoe.

Threaded spike constructions have also been described, as for example, in U.S. Patents 2,895,235; 2,689,417; 2,582,053; 2,578,591; 1,435,872; 1,025,087; 325,194 and 19,205. The spikes of these patents similarly are difficult to replace or have holders of insufficient strength.

Other patents dealing with replaceable spikes have been found to be generally costly and complex.

One object of the present invention is to provide a replaceable spike construction which is sturdy, simple and inexpensive.

A further object of this invention is to provide such a construction wherein the spike is easily inserted or removed.

Further objects and advantages of this invention will be apparent from the description and claims which follow taken together with the appended drawings.

BRIEF DESCRIPTION OF DRAWINGS

FIG. 1 is a partial section of a shoe showing a two-piece anchor spike construction in place.

FIG. 2 is an exploded view of FIG. 1 showing in addition a tool used for removing a spike.

FIG. 3 is a top view of the spike.

FIG. 4 is a top view of the insert member.

FIG. 5 is a partial section of a shoe sole showing a one-piece anchore spike construction in place.

FIG. 6 is an exploded view of FIG. 5.

SUMMARY OF INVENTION

The invention comprises two cooperating components. One is either a two-piece anchor comprising a retainer member and a receiving chamber having a solid rim engageable with the inner surface of the outer sole and a depending interiorly threaded tubular portion extending through the sole or a one piece version bent over onto a washer.

The retainer member has a tubular portion with exterior threading engageable with the interior threading of the receiving chamber and a rim or flange engageable

with the outer surface of the outer sole. The retainer member is characterized as having in the extreme portion of its tubular section a recessed or chamfer portion so that the end of the retainer tubular section adjacent the inner sole has a larger interior diameter than the body of the tubular section.

The second component is a replaceable spike member. This member comprises an exterior spike portion, a median seating flange, and a locking portion terminating in split fingers having protuberances at their ends. The median flange is preferably chamfered to seat in a mating chamfer of the retainer member. The locking portion is pushed through the tubular portion until its split finger protuberances engage the inner chamfered area of the retainer member.

The receiving chamber is forced in from the interior of the shoe. The retainer member is threaded into the receiving chamber by a simple tool engageable with orifices provided in the rim of the retainer member. The replaceable spike member is locked into the retainer member by simple pressure. Removal of the spike member is accomplished by inserting a wedge-like tool between spike member flange and retainer member rim. It is preferable to use a tool which applies wedge action on opposite sides of the flange and rim joint. Such a tool comprises a narrow short wedge end having a slot so as to operate on both sides of the rim-flange joint.

In the one-piece anchor version, there is a tubular member having a flange on the outer surface of the outer sole and having a portion bent over onto a washer on the inner surface of the outer sole.

Although the replaceable spike member of this invention is easily inserted or withdrawn by the use of an appropriate tool, it remains firmly in place during even the most violent flexing of the shoe sole. Further, even if the receiving chamber should loosen and turn because of immersion in water or mud, the spike will nevertheless stay in place.

The components of this invention are relatively simple and inexpensive to fabricate. Further, the strength of the spike is at least equal and in many cases superior to the strength of commercially available spikes for athletic shoes and the like.

SPECIFIC EXAMPLES OF INVENTION

Referring now to FIGS. 1–4 of the drawings, the receiving chamber **30** is inserted below the inner sole **32** so that its solid rim **30***a* engages the inner surface of the outer sole **31** and its depending tubular portion **30***b* with interior threading **30***c* extends through the outer sole **31** to its outer surface.

The retainer member **11** has an annular rim **11***a* adapted to abut the outer surface of the outer sole **31**. Retainer member **11** has a tubular portion **15** which is open at the bottom and has an upper chamfer recess **17** and a lower chamfer **19**. The retainer member **11** with its exterior threading **11***b* is adapted to be threaded into the tubular section **30***b*. Orifices **21** are provided so that an appropriate tool may be inserted to assist in threading the retainer member **11** tightly into place. When retainer member **11** is tightly in place, the rim **11***a* abuts the outer sole **31** and the tubular section **15** abuts the solid rim **30***a*.

The replaceable spike member **10** comprises an exterior spike portion **10***a*, a median seating flange **20** with a chamfer **22** and a locking portion **14** terminating in a pair of split fingers **12** having terminal protuberances **16** and **24**. The replaceable spike member **10** is adapted to have its elongated locking portion **14** extend through the tubular section of the retaining member until the protuberances **16** and **24** are seated in the recess **17**. The member **10** is so proportioned that the median flange **20** will seat with its chamfer **22** against chamfer **19** when the protuberances

are locked into the recess. The diameter of the base of the locking portion is such as to give a fairly close fit in the tubular portion of the retainer member.

Insertion of the replaceable spike member **10** is done by simple direct pressure. Removal is accomplished by applying wedge pressure between the rim **11***a* of the retainer member and the flange **20** of the replaceable spike member. A preferred tool **40** is illustrated having a narrow wedge end split by a notch **41** so that both sides of the wedge **42** will fit around the base of the elongated locking member **14.**

In the one-piece anchor construction illustrated in FIGS. 5 and 6, the anchor member **111** comprises an outer flange portion **111***d*, a tubular portion **111***c* having an inner recess **111***b* with an extension **111***a* bent over the washer **130** onto the inner surface of an outer sole **131** below an inner sole **132.** There are thus two cavities in the anchor **111,** namely a narrow entering cavity **111***f* and a wider seating cavity **111***e.* Thus, when replaceable spike member **110** is pushed into the cavities **111***f* and **111***e,* its split fingers **112** permit the protuberances **116** and **124** of the locking portion **114** to pass through cavity **111***f* and then lock into cavity **111***e.* The protuberance **120** seats tightly against the flange **111***d.*

I claim:

1. In combination:

(a) an anchor comprising a rim adapted to engage the inner surface of a shoe sole and a tubular portion adapted to extend through such sole and terminate in an annular rim abutting the outer surface of the shoe sole; said tubular portion being open at the bottom and having a recess in its upper inner portion; and

(b) a replaceable spike member comprising an exterior spike portion, a median seating flange adapted to abut said annular rim and an elongated locking portion adapted to extend through said tubular portion and having longitudinal split fingers with terminal protuberances adapted to be seated in said recess.

2. Claim **1** wherein said anchor comprises in cooperable combination:

(a) a receiving chamber having a tubular portion adapted to extend through such sole and having interior threading; and

(b) a retainer member comprising a tubular portion open at the bottom and having exterior threading adapted to engage the interior threading of said receiving chamber; the upper inner portion of said tubular portion having the recess.

3. Claim **1** wherein said annular rim and spike member flange have registerable chamfers.

4. Claim **1** wherein said annular rim has an orifice for engagement by a tool.

References Cited

UNITED STATES PATENTS

2,506,801	5/1950	MacNeill	36—59
2,607,134	8/1952	Langer	36—59
3,267,593	8/1966	Turner	36—59

OTHER REFERENCES

American Shoemaking, Apr. 22, 1925, p. 21.

PATRICK D. LAWSON, Primary Examiner