Nov. 30, 1971 N. A. WILLIAMS 3,623,244

CALKED LOGGERS, BOOTS

Filed April 8, 1970

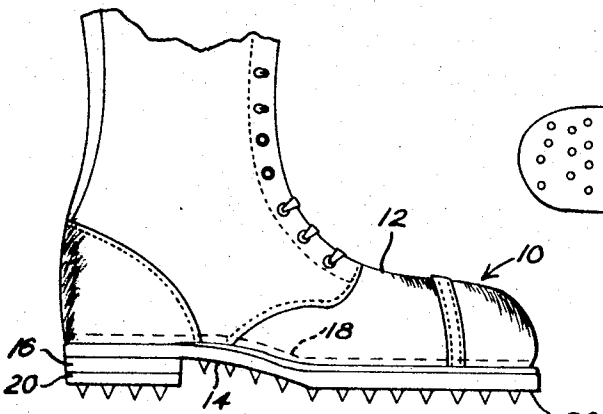


FIG. 1.

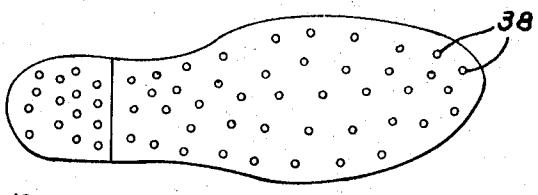


FIG. 2.

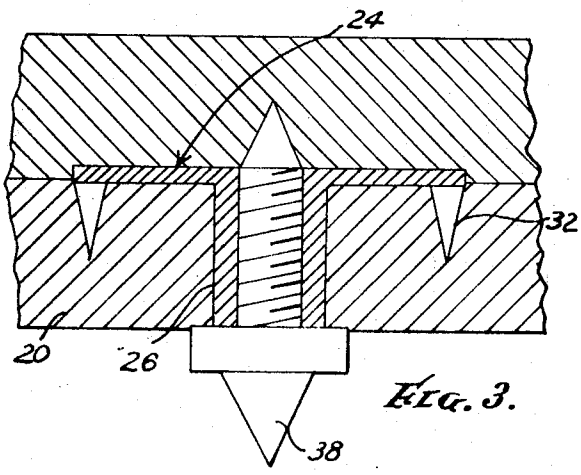


FIG. 3.

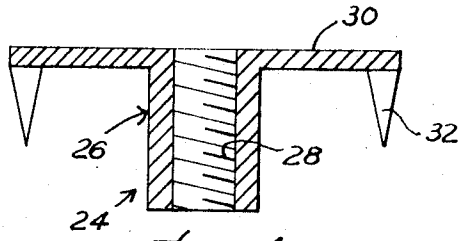


FIG. 4.

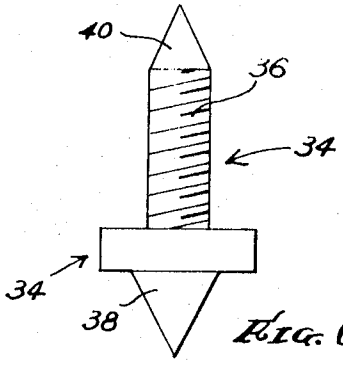


FIG. 6.

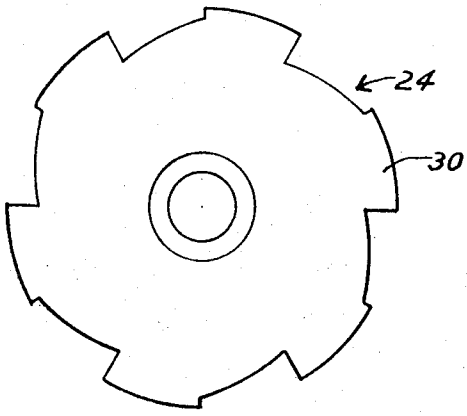


FIG. 5.

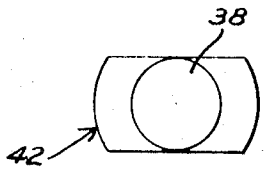


FIG. 7.

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CALKED LOGGERS' BOOTS

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ABSTRACT OF THE DISCLOSURE

A loggers' boot is provided having thick, calkable sole members of tough sheet material such as loggers' oak leather affixed to the undersides of the heel and of the tread area of the sole of an otherwise normal boot. Each calkable member has a multiplicity of closely spaced perforations bored through it in a drill press, and contains in each perforation the body portion of a cone nut whose flange portion squarely abuts a substantial area of the inner surface of the calkable member, whose prongs penetrate the calkable member from within, and whose internally threaded body extends through, or nearly through said member. A calk of novel, one-piece construction is securely threaded in each cone nut, each calk comprising a threaded cylindrical body, a sharp inner conical tip which extends inward beyond the calkable member and penetrates the conventional sole or heel portion of the boot as the case may be, an exposed outwardly projecting, sharp conical tip, and a rigid collar of substantial thickness which surrounds the body between the threaded portion and the outer tip. The collar has flat sides adapting it to have interfitting, driven relation with the socket of a power wrench, so that the calks can be quickly, effectively and consistently driven into place by the power wrench, and can be quickly and efficiently extracted by the same means.

This invention relates to calked loggers' boots and to novel calks employed therein.

There is probably no article of wearing apparel which is required to be more dependable in use than loggers' boots. There are few, if any, occupations in which the worker must rely more completely for safety upon the perfection of an article of wearing apparel or other personal equipment than the logger does upon his boots, and particularly upon the firmness and security of the calks of his boots. There are few, if any, occupations in which failure of equipment or wearing apparel can be more disastrous.

Spiked or cleated athletic shoes, such as are used by baseball players, football players, track athletes, etc., present no parallel. Athletes' shoes are designed for speed of foot and must be of light construction. A loose, wobbly, or even detached cleat or spike may be annoying, but it is not likely to result in death or serious injury. The spike or cleat of the athletic shoe is only required to penetrate soft turf or moderately packed soil or cinders of a level play area, and this does not call for exceptional strength or ruggedness of equipment. For these reasons it is not necessary or desirable to provide any very great number of spikes or cleats on the bottom of an athletic shoe.

The logger, on the other hand, may be called upon to ride a raft or flotilla of logs, to extricate floating logs from a river or pond and shift them to or from shore, and in doing so to step or leap from log to log, or from shore to log, or from log to shore. Shore conditions may be very hazardous because of rocks, stones, pebbles, undergrowth, or irregular terrain, or a combination of these factors. Again, the logger may be required to climb onto a stack or load of logs. In all

these circumstances it is important that calks which come in contact with a log or other supporting structure shall take a firm and dependable, non-skid grip. It is also important that the calks be so closely packed, and so arranged, that several of the calks will grip the underfooting simultaneously and will cooperate to hold against slipping in all directions.

Because of these exacting requirements, the calks must be securely fixed, closely spaced and numerous. The calking of a pair of boots is, therefore, an exacting, tedious and expensive operation, and the same thing is true of calk replacement when the original calks become worn and blunted.

According to present conventional practice, loggers' boots are provided with calkable sole and heel pieces of loggers' oak leather, and calks of conventional design are simply hammered into them. These calks do not have steadying flanges or collars for bearing against the outer surfaces of the sole and heel pieces. Neither are they fixed in anchorages which positively lock them in place. The loggers' oak leather is so tough that it requires to be soaked in water for three or four days in order to permit the calks to be applied. It then takes about an hour and a half to tear down the parts requiring replacement, and a somewhat longer time to put in the new calks.

When my calks and anchorages are used, the soaking is unnecessary. Thirty minutes is required for boring perforations in the dry loggers' oak leather sole and heel pieces, and affixing anchoring devices in them. An additional thirty minutes is then required for attaching the so prepared parts to the boots and putting in the calks.

To the attainment of these ends, it is an important feature that the calks and anchorages, screwed together, have shoulders which squarely engage the outer and inner surfaces of the calked oak leather pieces and clamp the leather firmly between them.

It is a further feature that the calk is made to include an externally threaded, cylindrical body having sharp inner and outer conical tips and an abruptly shouldered collar between the threaded portion of the body and the outer tip, the collar being non-circular in cross-section and having a plurality of flat faces which adapt the collar to have a driven fit with the socket of a power operated wrench. By virtue of this feature the calks can be very rapidly and forcibly driven home, and they can be just as expeditiously extracted when replacement is required.

Other objects and advantages will hereinafter appear.

In the drawing forming part of this specification, disclosure is made of an illustrative loggers' boot and a calk employed in it, the calk being claimed per se as a meritorious invention, and also as a characterizing feature of the novel boot.

FIG. 1 is a fragmentary view in side elevation of a practical and advantageous loggers' boot in which the invention is embodied and utilized;

FIG. 2 is a bottom plan view of the boot of FIG. 1;

FIG. 3 is a fragmentary, detail view in sectional elevation showing a calk and calk anchorage combination;

FIG. 4 is a view in sectional elevation showing a typical cone nut employed for anchorage in FIGS. 1, 2 and 3;

FIG. 5 is a top plan view oof the cone nut,

FIG. 6 is a view in elevation of the calk illustrated in FIG. 3; and

FIG. 7 is a bottom plan view of the calk of FIGS. 3 and 5.

The illustrative boot **10** is shown as comprising an upper **12**, a leather outsole **14** and a heel **16**, all of which may be of conventional construction and conventionally combined with one another. A conventional insole **18** is

also indicated in dotted outline. To these parts are added a heel lift **20** and a sole member **22** in which calks are mounted. The members **20** and **22** are desirably composed of a very tough, strong and firm leather known as loggers' oak leather and, for differentiation from other sole and heel parts, are herein referred to as calkable members.

Loggers' oak leather is so tough and is so hard to penetrate that it cannot have conventional calks driven into it until after it has been thoroughly saturated with water by soaking it in water for three or four days. It can, however, be penetrated by a drill or by cobblers' nails in a dry condition.

Before the calkable members are combined with the conventional boot structure, they are drilled to provide numerous cylindrical perforations, one for each calk and calk anchorage to be provided. Eleven to fifteen calks will be provided in the heel area and thirty to thirty-five calks will be provided in the sole area, the number depending upon the size of the boot.

The next step, also performed before incorporating the calkable members into the boot, is to affix in each perforation a cone nut **24**. Each cone nut **24** includes a hollow sleeve portion **26** which is internally threaded to provide an internal screw **28** of very low pitch, specifically of a pitch so low that its surface slope is well within the angle of response.

At its inner end the cone nut includes an out-turned flange **30** of substantially larger area than the cross-sectional area of the sleeve, which flange desirably extends at right angles to the axis of the sleeve. The outer portion of the flange is punched and deformed to provide outwardly directed teeth **32**. The cone nut is assembled with a calkable member by fitting the sleeve portion **26** into one of the perforations of the calkable member from the inner side of the calkable member. The cone nut is then hammered into place, causing the teeth to penetrate the calkable member to their full depths.

When a previously shaped and fitted calkable member has had all of its perforations provided with cone nuts as described, it is put in its appropriate location on the boot and firmly nailed down, there being desirably a fairly closely spaced, complete marginal line of nails, and desirably at least four cobbler's nails applied around each cone nut. The nails which secure the sole calkable member desirably go clear through the outsole and are clinched firmly in place inside the boot. Most of the nails driven into the heel simply penetrate the heel deeply, but a few are desirably long enough to be passed completely through the heel and clinched firmly inside the boot. When both of the calkable members have been thus prepared and attached, the insole is put into place and the boot is ready for calking.

Each calk is made of hard steel and is of the construction illustrated in FIGS. 4 and 5. A calk **34** is made to include a solid cylindrical body portion **36** having an external thread complementary to the thread of the cone nut. The calk also includes at its ends a relatively large, outer conical tip **38** and a relatively small inner conical tip **40**. Between the threaded body portion **36** and the outer conical tip **38**, the calk includes a rigid flange or collar **42** which extends well out from the calk body for engagement with the under surface of the calkable member. The inner surface of the collar is shown as extending at right angles to the axis of the calk, and it is important that this collar surface make an angle of not substantially more than ninety degrees with the threaded surface of the threaded body portion **36**.

The point should be noted that the collar **42** is not circular in shape but is flattened at opposite sides so that it may have a driven fit with the socket of a power driven wrench. When the calkable members have been nailed in their proper locations, the calks are started by hand into the threaded bores of the cone nuts, and when they have

all been started they are quickly turned home, one after another, with a power wrench.

It will be understood, of course, that the operator is not strictly bound to the exact sequence of steps described above, so long as the ultimate net result is the same.

The points regarded as of chief importance are:

(1) The utilization of cone nuts, although this is not new per se;

(2) The square engagement of the inner face of the calk collar against the outer face of the calkable member;

(3) The provision of the inner conical tip which extends far inward, even well beyond the cone nut, into position to effectively coact with the intermediate sole (the normal outsole) to brace and reinforce the calk in its upright attitude; and

(4) The shaping of the calk collar for power wrench operation.

The power wrench operation is extremely fast and forceful. The combination of features referred to represents a very important advance over the mere hammering of conventional calks into unperforated and unreinforced, water-saturated loggers' oak leather. There is no dulling of the outer tips of the calks by hammer blows. There is no such thing as driving the calks in inconsistent directions. There is no such thing as administering inconsistent blows to a single calk, thereby mutilating a portion of the calkable member and making a portion of it unsuitable for receiving a calk. There is no such thing as installing a calk in a wobbly condition through inconsistent blows.

The cost of initial calking and the cost of calk replacement are radically reduced.

While the dimensions suggested below are not intended to be regarded as limiting in character, they have been found practical and are believed to be substantially optimum dimensions.

The cone nut:

	Inch
Length of threaded sleeve	5/16
Internal diameter of sleeve	1/8
Diameter of flange	3/4
Length of teeth from upper surface of cone nut	3/16
Thickness of cone nut material	1/32

The calk:

Length of threaded body portion	5/16
Thickness of collar	1/12
Altitude of outer tip	3/16
Altitude of inner tip	1/8
Width between flat faces of collar	3/16
Length of flat faces of collar	1/4
Diameter of collar in rounded areas	5/16

The thread—size 8, 32 threads per inch.

The calkable members:

Normal thickness	5/16

I have described what I believe to be the best embodiments of my invention.

I claim:

1. A logger's boot comprising, in combination,

(a) a normal boot including the usual heel, insole and upper,

(b) calkable members in the form of a supplemental heel lift and an outsole;

(c) means firmly and positively securing the calkable members to the normal boot;

(d) a multiplicity of cone nuts, prefitted through the calkable members from the inner sides thereof, each cone nut having a calkable-member-penetrating sleeve portion which is internally threaded from end to end and is no longer than the thickness of the associated calkable member, a flat outturned, circumferential flange of substantial area at its inner end which has stable engagement with the inner surface of the associated calkable member, and a

series of outwardly directed, peripherally located anchoring teeth on said flange;

(e) hard, metallic calks threaded into the respective cone nuts of each applied calkable member, each calk being of one-piece construction, and including a cylindrical body portion having an external thread of low pitch extending from end to end thereof and complementary to the internal thread of an associated cone nut, a sharp pointed conical tip at the outer end thereof, and a collar portion of substantial thickness and rigidity located between the threaded body portion and the outer conical tip of the calk, said collar having an inner, calkable-member-engaging face of substantial area which makes an angle of not more than ninety degrees with the external surface of the body portion, said collar portion having a non-circular peripheral configuration adapting it to have a driven fit with a wrench socket, and

(f) each calk having at its inner end a sharp pointed, conical tip adapted to be driven into the associated conventional sole or heel of the boot by the screwing home of the calk into the associated cone nut,

the construction and arrangement being such that the calks may be driven one by one into firm and unyielding clamping engagement with the outer surface of the associated calkable member so that the calkable member is solidly and firmly clamped between the calk collar and the flange of the associated cone nut, and the normal boot structure is penetrated to a substantial depth for helping in stabilizing the calk against tipping, but the calks when dulled can be individually unscrewed and replaced while still using the original calkable member and cone nuts.

References Cited

UNITED STATES PATENTS

2,517,179	8/1950	Daniels	36—67 D
325,194	8/1885	Buck	36—67 D
1,855,452	4/1932	Jones	36—67 D
2,689,417	9/1954	Bernstein	36—67 D

PATRICK D. LAWSON, Primary Examiner