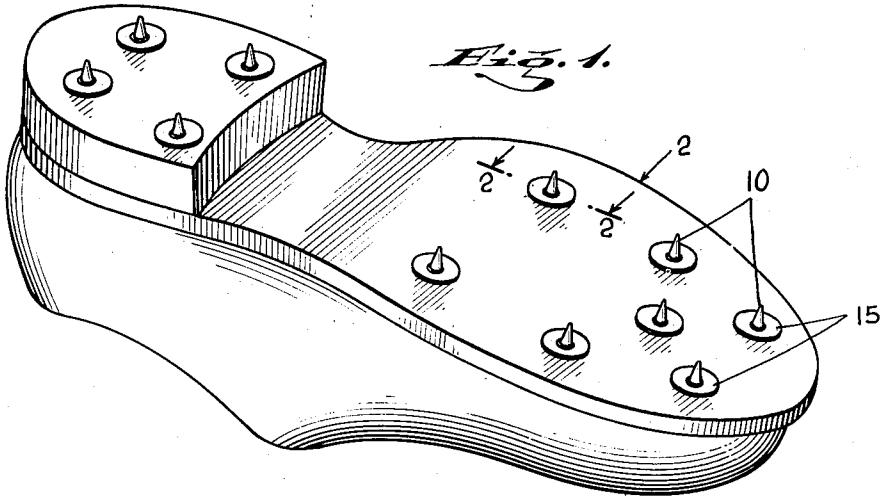
Aug. 19, 1952 A. A. LANGER 2,607,134

CALK FOR FOOTWEAR

Filed May 27, 1949

Fig. 1.



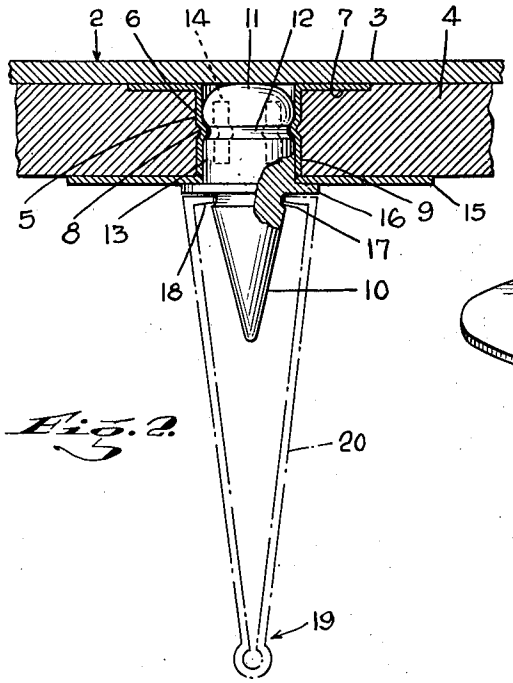


Fig. 2.

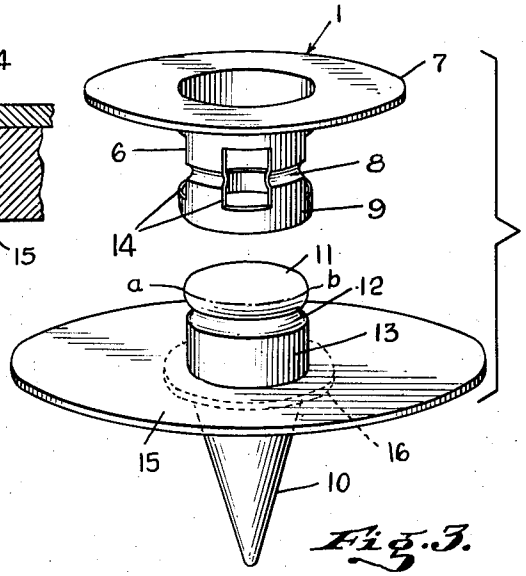


Fig. 3.

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CALK FOR FOOTWEAR

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2 Claims. (Cl. 36—59)

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The invention relates to calks for foot wear, and more especially to calks having spike ends used in climbing, sports, and various other activities. The invention is more particularly concerned with spikes for golf shoes.

A common form of calk with a spike element for golf shoes comprises an internally threaded tubular holder and a spike formed with an externally threaded head which can be screwed into the holder. The shoe has inner and outer soles and the holder is set in an opening formed in the outer sole. At its upper or inner end, the holder is provided with flanges which are adapted to rest upon the inner surface of the outer sole and have prongs which are forced downwardly into the sole, when the holder is being installed in its opening in the sole. These prongs are necessary in order to prevent rotary movement of the holder, when the spike is screwed into the holder or withdrawn therefrom. In resisting movement of the holder, however, when the spike is being installed or removed from the holder, the prongs may cause injury to the sole of the shoe, on occasion so serious that the sole must be removed and replaced by a new sole. Furthermore, in use the head of the spoke may become set in the holder and cannot be removed, thus requiring the replacement of the spoke and holder with new ones, which in turn requires the separation of the outer and inner soles in order to permit such replacement.

With the foregoing and other defects of the art in view, the present invention contemplates providing a calk structure of improved design which will permit the calk to be pushed into the holder with a direct axial translatory or non-rotary movement and to be pulled from the holder with a similar movement in reverse, thus avoiding any tendency to impart a rotary movement to the holder during the said installing and removing operations. To aid in effecting these operations, the holder and the shank of the calk are relatively so formed that, when the shank is enclosed within the holder, there will be a close frictional engagement between the members which will tend to prevent any relative lateral movement between the calk and the holder which otherwise might occur when the shoe is being worn.

A calk assembly embodying the principles of the invention will in a simple form set forth a longitudinal hollow holder comprising a collar having a lower portion formed with a transverse surrounding groove, said grooved portion being adapted to expand and contract, and a calk having a shank with a depending reduced neck, said grooved part and neck being relatively so formed as to present surfaces which are adapted to be opposed and closely engaged and prevent relative lateral movement between the holder and calk, and said holder and calk being adapted to permit the shank of the calk to be thrust into the holder through and beyond the grooved part with a direct axial non-rotary movement and to be pulled therefrom with a similar reverse movement.

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According to a feature of the invention, the holder is formed immediately below the grooved part with a lower collar which is adapted to surround a correspondingly shaped part of the calk immediately below the neck thereof, the frictional engagement between said part and the collar being such that no relative lateral movement between the calk and the holder can occur. And to facilitate its expanding and contracting operations, the groove is formed with transverse slots.

These and other objects, features and advantages of the invention will in part be obvious and in part be more fully set forth in the following description, when read in connection with the accompanying drawing, of which:

Fig. 1 is an enlarged bottom plan view of a shoe provided with calks made according to the invention;

Fig. 2 is a fragmentary sectional view taken on the line 2—2 of Fig. 1 and partly in elevation, and of the hole of the shoe, showing a holder and calk of the invention embedded therein and a tool to be used with the calk; and

Fig. 3 is an exploded view, showing perspective of the holder and calk.

A preferred embodiment of the invention is illustrated in the drawing and comprises a longitudinal hollow holder 1, made of resilient material, as spring steel, and of suitable dimensions to fit, with other holders, in the sole of a shoe 2. Preferably, the holder is tubular in shape but it may be of any desired practicable contour. The shoe is constructed with inner and outer soles 3 and 4, respectively, the outer sole being formed with a plurality of holes 5 in each of which is mounted a holder 1. The holder comprises an upper collar 6 from the top of which extends outwardly an annular flange 7, which abuts against the outer surface of the inner sole 3 and rests upon the adjacent inner surface of the outer sole 4, the holder being thus secured against significant vertical movement, to which further reference will be made.

At its lower portion the upper collar 6 is formed

with an annular transverse groove 8 below which depends a lower collar 9. Further reference to these parts will be made in now describing the spike proper.

A calk 10 made in accordance with the invention will comprise a shank with a head 11 which, to facilitate its passage through the grooved portion of the holder, will be knob-shaped, and which will have, depending from its lower surface, a reduced annular portion or neck 12 formed by a circumferential groove in the surface of the shank. The collar 6 and groove 8 of the holder and the head 11 and neck 12 of the calk are relatively so formed that, when the head and neck of calk are in operative position in the upper collar 6 and groove 8, respectively (with the top of the head abutting against the surface of the inner sole 3), they will be held in close frictional engagement and any relative lateral movement between the calk and holder will be prevented. Further reference to this subject will presently be made.

In order, however, to make secure in high degree the engagement between the holder and the calk, the part 13 of the calk 10 immediately below the neck 12, see Figs. 2 and 3, is expanded circumferentially and formed with perpendicular sides, matching the lower collar 9. The said part 13 and lower collar 9, when in operative position, make a close and secure contact which alone would preclude lateral movement between the calk and holder.

The body of the calk is provided with an annular flange 15 which, as shown in Fig. 2, is seated upon a shoulder 16 formed by a slight circumferential extension of the body of the calk. This flange 15 is similar to the flange 7 but preferably is of greater circumference, and the two flanges serve between them firmly to clamp the outer sole 4 of the shoe. This flange 15 may be attached to the calk in any suitable way but, preferably, it is constructed of such inner circumference with relation to the body of the calk that it is placed on the calk with a forced fit.

There are supplied to manufacturers of golf shoes outer soles of uniform thickness which will permit the use of a holder part of standard size for the calk element. It is possible that the leather of the outer sole will expand, when wet, and when this occurs pressure may be exerted against the annular flanges 7 and 15 of the holder and calk, respectively, which pressure will tend to separate the calk and holder. To overcome this tendency, in these conditions, the calk 10, as heretofore stated, is formed with the reduced neck 12, said knob or head 11 convexedly tapering towards said neck from a section *a—b* of the knob substantially midway of its height. The grooved portion of the holder is correspondingly shaped snugly to receive the described portion of the spike, all as clearly shown in Figs. 2 and 3. When the knob of the spike is in place in the holder, frictional engagement between the knob and neck of the calk and the corresponding parts of the holder will take place. With this engagement of the holder and calk it will readily be seen that, should the leather of the outer sole expand because of dampness or said sole be of excessive thickness because of error in manufacture, the calk will readily adjust itself to the slight change of position required, and this without any significant vertical movement of the calk, as heretofore stated. Below the flange 15 the calk is formed with an annular groove 17 to which further reference will be made, and below said groove the calk tapers to the usual spike point.

In order to facilitate its resilient operation, as heretofore mentioned, the holder is formed with longitudinal slots 14 which traverse the groove 8 and, preferably, extend into the upper and lower collars 6 and 9. These slots permit the outward and inward spring actions of the grooved portion of the holder and thus make possible passage therethrough by the calk head.

In the process of making the shoe the holders are installed in the openings in the outer sole; the inner and outer soles are then bound together, as by stitching; and the calk is inserted in the holder in the manner heretofore described.

Any suitable tool may be used to withdraw the calk from the holder, when desired. Preferably and as shown, however, the body of the calk, as stated, is formed with the annular groove 17 into which jaws 18 of pincers 19 can enter in a usual manner and the calk be withdrawn by pulling with the arms 20 of the pincers in a direct axial translatory movement as heretofore described.

The calk of this invention has been described as being applied to the sole of a shoe but it will be understood, of course, that the calk can be and usually is applied to the heel of the shoe and in a similar manner. Openings will be formed in a lift of the heel and the calk applied as heretofore detailed, all of which will be fully understood by those skilled in the art. The calks may be applied to the sole and heel of the shoe in any desired and convenient number.

The invention in its broader aspects is not limited to the precise construction shown and described as many changes may be made in the details thereof without departing from the main principles of the invention or sacrificing its chief advantages.

I claim:

1. A calk assembly for foot wear including a metal socket for attaching to the sole of a shoe with the entrance to the socket at the bottom face of the sole, said socket being of continuous extent around the entire periphery of its lower end, and said socket having a cylindrical inside wall for a substantial distance upward from its entrance and throughout at least the greater part of the height of the socket, a calk having a shank portion with a shoulder at the lower end of the shank portion in position to contact with the end face of the socket around the entrance to the socket for limiting the axial movement of the calk into the socket, said shank portion having a cylindrical wall corresponding to the inside wall of the socket and of substantially equal cross section to the inside of the socket so that the shank portion of the calk fits snugly in the socket and is held by the cylindrical wall against tilting movement in any plane through the longitudinal axis of the calk and socket, a circumferential groove in the cylindrical surface of the shank portion of the calk at a substantial distance above the shoulder, but below the upper end of the cylindrical wall of the calk so that the cross section is equal to that below the groove, a downwardly extending spike portion of the calk below the shoulder, and resilient spring means in the socket in position to engage the groove in the shank portion of the calk when the shoulder is in contact with the bottom end face of the socket to yieldably hold the calk against downward axial displacement in the socket.

2. A calk structure for insertion in a metal socket attached to the sole of a shoe with the entrance to the socket opening through the bottom face of the sole, said calk structure having a

spike portion with a pointed end, a shank portion, and a shoulder at the juncture of the spike portion and shank portion to limit axial movement of the calk into the socket, the shank portion of the calk having a cylindrical side wall of a cross section to fit snugly within the socket to resist tilting of the calk in any plane through the longitudinal axis of the socket, a circumferential groove in the side wall of the shank portion intermediate the upper and lower ends of the cylindrical wall for receiving spring means in the socket to retain the calk therein, the cross section of the shank portion above the groove being as great as the cross section of the shank portion below the groove so that the wall of the shank portion both above and below the groove contact the wall of the socket to resist tilting of the calk.

ADOLPH ARTHUR LANGER.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,868,729	Crap	July 26, 1932
2,260,138	Feinberg	Oct. 21, 1941

FOREIGN PATENTS

Number	Country	Date
11,592/09	Great Britain	Feb. 10, 1910
138,399	Great Britain	Feb. 12, 1920
415,882	Great Britain	Sept. 6, 1934
436,615	Germany	Nov. 5, 1926
674,959	France	Oct. 28, 1929
792,111	France	Oct. 14, 1935