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SHOE CALK

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6 Claims. (Cl. 36—67)

This invention relates to shoe calks more particularly adapted to be applied to shoes or boots having rubber soles of the types used by miners, loggers, golfers and others who work or exercise outdoors.

Heretofore it has been customary to equip rubbers or rubber soled shoes with leather cleats into which calks are driven or screwed. Cleats so mounted have been found unsatisfactory as snow balls up between the cleats, thus causing the sole to become stiff and slippery to walk on.

It is, therefore, one object of the invention to provide calks which may be driven directly into a rubber shoe sole and firmly secured by nails which are clinched in the rubber sole. It will thus be seen that the cleats may be easily applied directly to the shoe sole and the sole will remain flexible since it is free from cleats against which snow has a tendency to gather and make the shoe stiff and slippery.

Another object of the invention is to provide calks which are so constructed that when they are applied to companion discs or collars, a firm union will be established between the calks and collars which reinforce the portions of the shoe sole into which the shanks of the calks are embedded.

Another object of the invention is to provide an improved calk which is simple in construction, easy to apply, and of such construction that it will be firmly held in place when applied to a shoe sole.

In the invention illustrated in the accompanying drawing, wherein:

Fig. 1 is a view showing a miner's hob nail in side elevation and applied to a shoe sole shown in section.

Fig. 2 is a view on an enlarged scale showing the calk of Fig. 1 in section.

Fig. 3 is a view similar to Fig. 1, showing a logger's calk applied to a shoe sole.

Fig. 4 is a view of the logger's calk on an enlarged scale.

Fig. 5 is a view looking at the inner face of the disc through which the calk is mounted.

Fig. 6 is a view looking at the outer face of the disc.

Fig. 7 is an elevation showing a golfer's spike applied to the disc.

Fig. 8 is a perspective view of a modified form of calk with the washer omitted.

Fig. 9 is a perspective view of another modified form of calk.

Fig. 10 is a side view of a set used for driving calks and nails into a shoe sole.

The hob nail or calk 1 shown in Figs. 1 and 2 is intended for use on the sole 2 of a miner's boot or shoe and has a head 3 and a shank 4, the head being shaped to form a plurality of stepped portions or shoulders 5 extending circumferentially of the head concentric to each other. This provides the head of the calk with a plurality of sharp-edged shoulders which serve very effectively to bite into ice, snow and the like and prevent slipping, also serving to take wear that would be taken by a shoe sole not equipped with hob nails. A neck 6 integrally connects the head with the shank 4 and has its outer end portion formed with a curved surface merging into the under face of the lower stepped portion of the head.

The calk is mounted through a washer 7 which is formed of stamped metal and has an inwardly extending collar 8 surrounded by an outstanding annular rib 9 which is arcuate transversely, as shown in Fig. 2, and concentric to the collar which it surrounds and into which it merges. The curvature of the annular rib and the portion of the collar into which it merges conforms to the curvature of the outer portion of the neck 6 to establish a close fit between the calk and washer. When the washer is applied to the calk, the collar is swedged about the neck for abutting engagement with the circumferentially extending lip or shoulder 10, and from an inspection of Fig. 2, it will be seen that the calk and washer will be firmly held in engagement with each other. The calk is then ready to be applied to shoe sole 2 which is formed of rubber and when so doing, the sharpened end of the shank is placed against the outer or under face of the shoe sole and driven into same until the washer is in flat contacting engagement with the under face of the shoe sole. Nails 11 are then driven into place through openings 12 formed in the washer in spaced relation to each other circumferentially thereof with reduced ends 13 of the nails clinched as shown in Fig. 1. The openings 12 are cup-shaped to form sockets and the heads 14 of the nails are of hemispherical formation to provide a ball and socket fit allowing the washer to have tilting movement when a shoe sole is flexed. Therefore, the nails will not be broken or loosened by strains when walking.

In Figs. 3 and 4 there has been shown a calk 15 for use on loggers' shoes substituted in lieu of the calk 1 of the hob nail type. This calk has an elongated head 16 tapered toward its outer end and a neck 16 which passes through the collar 8 of the washer and conforms to the curvature of the annular rib 9. A shank 17 which is to be

driven into the shoe sole is formed integral with the neck 16 and, after the neck has been passed through the collar, sufficient metal is stripped from the shank to form the extension 18 indicated by dotted lines in Fig. 4. This extension engages the end edge of the collar and firmly holds the calk and collar in proper relation to each other. This embodiment of the invention is applied as previously explained) the shank being driven into the shoe sole and nails 11 driven through the openings 12 of the washer and clinched to hold the nails firmly in place.

In order to equip golf shoes with spikes, a calk 19 is used. This calk has a neck which fits snugly through the collar 8 of the washer and after the neck has been passed through the collar, it is formed with a clinching head 21 which engages the edge of the neck and holds the calk and washer firmly in engagement with each other. The golf spike is applied to the sole of a shoe merely by placing it against the shoe sole and then driving nails through the openings of the washer and clinching the nails to firmly hold the spikes against the shoe sole.

In Figs. 8 and 9 there have been shown other modified forms of calks which may be used. These calks, which are indicated at 22 and 23, are similar in construction and each has a head 24, a neck 25 and a shank 26. The only difference between these calks is the shape of the head 24, the head of calk 22 being of hexagon formation and the head of the calk 23 being square. Either of these calks may have a washer 7 applied to it and used in place of the calks previously described.

In Fig. 10 of the drawing, there has been illustrated a set by means of which the various forms of calks may be driven into place when they are applied to a shoe sole. This set 27 is formed of strong metal and has a shank or stem 28 and a head 29 at one end of the stem formed with a recess or pocket 30 shaped to receive the calk and washer surrounding the calk. During use of the set, the calk and the companion washer are fitted into the pocket, the shank of the calk disposed against the shoe sole and the end of the stem struck with a hammer to drive the calk into place. By using the set, the head of the calk will not be deformed by blows of a hammer. After the calk has been driven into place the nails will be driven through the openings of the washer and the set then again employed for driving all the nails into place with equal force and clinching their reduced ends.

Having thus described the invention, what is claimed is:

1. In a device of the character described, a calk

having a head and a neck extending therefrom, a washer fitting about the neck and having marginal portions formed with nail openings constituting cup shaped sockets, and nails for passing through the nail openings having hemispherical portions fitting within the sockets and co-operating therewith to provide ball and socket joints permitting tilting of the washer and calk when a shoe sole is flexed during walking.

2. In a device of the character described, a calk having a head and a reduced neck extending therefrom, and a washer surrounding the calk and having a center opening surrounded by a collar and an outstanding rib surrounding the collar, said collar being arcuate transversely and merging into the collar and neck conforming to the contour of the collar and adjoining portion of the rib, and means for securing the washer about the calk in close fitting engagement with the neck.

3. In a device of the character described, a calk having a head formed with a reduced neck and a shank extending therefrom, a washer surrounding said calk and formed with an outstanding annular rib merging into an inwardly extending collar fitting snugly about the neck, and means at the junction of the neck and shank for engagement with the collar to firmly hold the collar and washer in engagement with each other.

4. In a device of the character described, a calk having a head formed with a reduced neck and a shank extending therefrom, a washer surrounding said calk and formed with an outstanding annular rib merging into an inwardly extending collar fitting snugly about the neck, and an outstanding extension at the junction of the shank with the neck overlying the end edge of the collar for holding the collar firmly in place about the neck.

5. In a device of the character described, a calk having a head formed with a reduced neck and a shank extending therefrom, a washer surrounding said calk and formed with an inwardly extending collar fitting snugly about the neck, the head being progressively reduced in diameter to form stepped concentric shoulders for biting engagement with slippery surfaces, and means for securing the washer in place about the neck.

6. In a device of the character described, a calk having a head formed with a reduced neck and a shank extending therefrom, a washer surrounding the calk and formed with an inwardly extending collar fitting snugly about the neck, the head being formed with sharp edges for biting engagement with slippery surfaces, and means for securing the collar about the neck.

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