

June 20, 1961

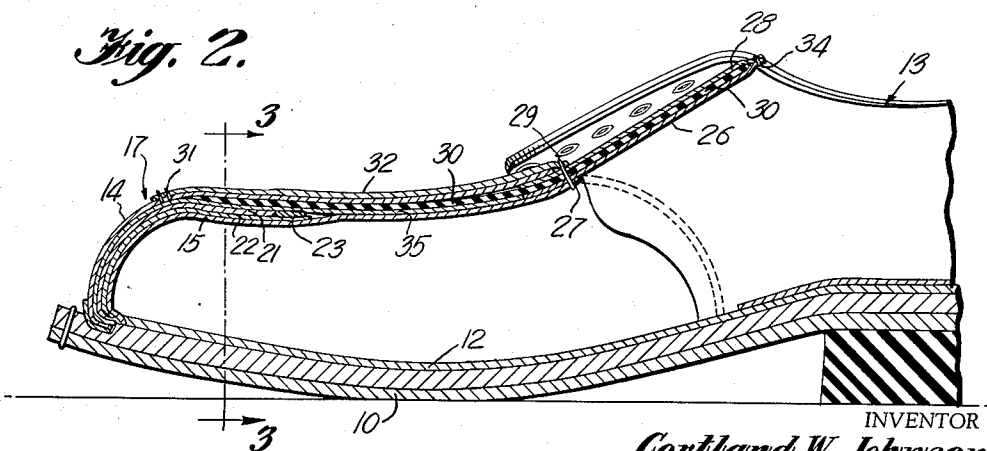
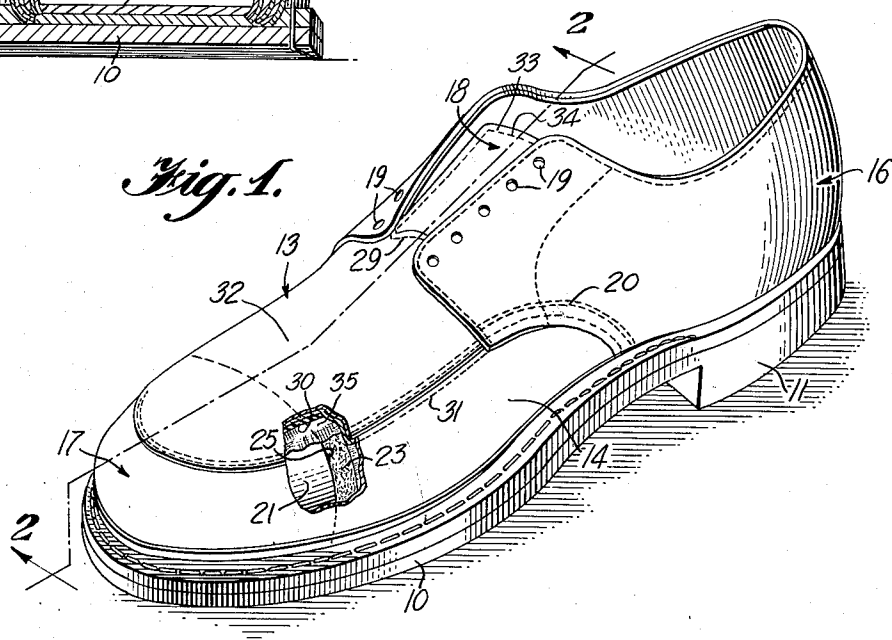
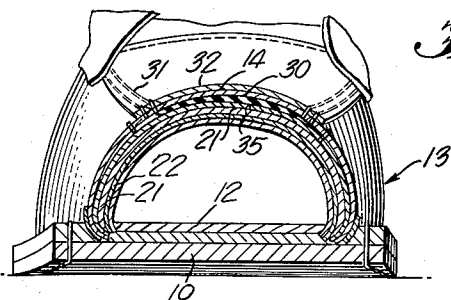
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2,988,829

SAFETY SHOE

Filed July 2, 1958

2 Sheets-Sheet 1



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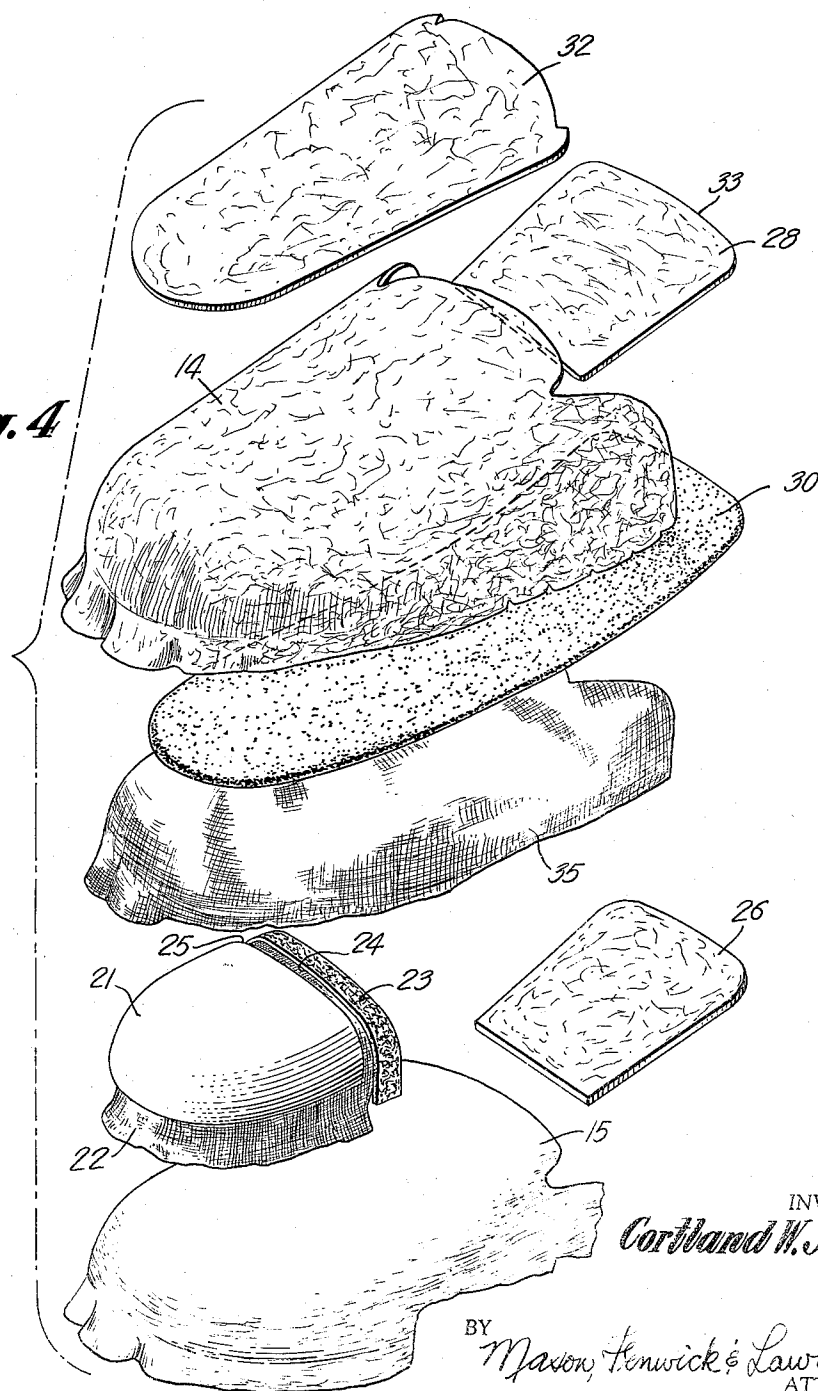
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Filed July 2, 1958

2 Sheets-Sheet 2

Fig. 4



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2,988,829

SAFETY SHOE

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Filed July 2, 1958, Ser. No. 746,203

4 Claims. (Cl. 36-72)

This invention relates to safety shoes, and more particularly to a safety shoe which protects not only the toes of the wearer's foot, but also the instep against objects which may fall thereon.

The provision of a steel metal toe cap in a shoe is well known. It is also well known to provide steel bridges over the ball joint and also steel shields to buckle over the instep. A shoe having a steel bridge and instep shield while providing maximum protection is heavy, uncomfortable and causes unusual attention when worn on the street. Consequently, such shoes are not popular with workmen and they avoid wearing them. Shoes having only a steel toe cap are readily acceptable to workmen, but these offer no protection to the ball joint and metatarsal arch of the wearer's foot.

The shoe of the present invention is most useful to mechanics and workmen, such as plumbers, carpenters, and the other construction workers who do a considerable amount of moving around in the course of their work and also those workmen, such as refrigeration repairmen and movers who go into private homes and offices in connection with their work. A workman wearing a shoe having a steel bridge and instep shield would not only create unusual attention but would become very foot weary in the course of a day's work.

Consequently, it is an object of the present invention to provide a safety shoe for workman which offers the protection of a steel toe cap and lighter and comfortable protection over the ball joint and instep of the wearer's foot.

It is a further object of the present invention to provide such a safety shoe which is conventional in appearance and may thus be worn to and from work as well as in the course of a day's work without creating unusual attention.

Other objects and advantages of the present invention will become apparent to those skilled in the art from the following description when read in conjunction with the accompanying drawing wherein:

FIGURE 1 is a perspective view of a shoe in accordance with the present invention, a portion being cut away to show the construction of the upper;

FIGURE 2 is an elevational sectional view of the toe and vamp portion taken on the line 2-2 of FIGURE 1;

FIGURE 3 is a transverse sectional view taken on the line 3-3 of FIGURE 2;

FIGURE 4 is an exploded view of the toe and vamp portion of a shoe upper in accordance with the present invention.

Adverting now to the figures and particularly to FIGURES 1 and 2, there is shown a man's shoe having the conventional appearance of a street shoe of the simulated moccasin type and having an outer sole 10, a heel 11, an insole 12 and an upper 13. The upper 13 has a leather outer portion 14 and a leather liner portion 15, and comprises a quarter portion 16, a toe portion 17, a tongue 18 and a lacing means 19 in the vamp portion.

The present invention is concerned with the construction of the toe portion 17 and tongue 18. The toe portion 17 extends from the toe of the shoe to the instep where it is joined to the heel portion 16 by a line of stitching 20.

A metal toe cap 21 is positioned over the liner 15 at the front of the shoe as shown in FIGURE 4. A cap liner 22 of soft thin flexible material such as cotton flannel is interposed between the leather liner 15 and the

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metal toe cap 21 to prevent chafing of the liner 15 and to add to the cushioning between the metal and the wearer's foot. A strip of felt 23 which extends from the insole 12 on one side of the shoe to said insole on the other side is positioned so that its forward edge 24 is in edge abutting relation with the rear edge 25 of the metal toe cap 21. The felt strip 23 acts as an additional cushioning means in the region of the break line of the shoe upper so that the wearer's foot will be protected against the hard relatively sharp edge of the metal toe cap 21 when his foot is bent at the toe joints in walking. The cap liner 22 extends rearwardly beyond the metal toe cap 21 to the rear edge of the felt strip 23.

The tongue 18 has an inner ply 26 attached by a line of stitching 27 to the liner portion 15, and an outer ply 28 attached by a line of stitching 29 to the outer portion 14 of the upper 13.

A safety pad 30 made of a thickened piece of tough, flexible resilient material, such as foamed rubber or one of the foamed synthetic plastic resins as for example, foamed polyurethane synthetic resin or the like, is attached to the outer portion 14 as by a line of stitching 31. This may conveniently be done at the time the moccasin cap 32 is adjoined to the outer portion 14.

The safety pad 30 extends longitudinally of the shoe from the forward top of the toe portion 17 to the free end 33 of the tongue 18 as shown in FIGURE 2. It is held within the tongue 18 by the line of stitching 34 joining together the plies 26 and 28. The safety pad 30 extends substantially transversely across to the top of the shoe in the region between the metal toe cap and the base of the tongue 18 as shown in FIGURE 1. Thus, the safety pad 30 lies in substantially a foldable plane and is easily flexed at the break-line of the shoe.

An insert 35 of cotton flannel cloth or similar material is interlaved between the metal cap assembly comprising the metal cap 21, the liner portion 15, the cap liner 22, the felt strip 23, and the inner ply 26 of the tongue 18 and the outer portion assembly comprising the outer portion 14, safety pad 30, moccasin cap 32 and outer ply 28 of the tongue 18. The insert 35 extends longitudinally from the toe of the shoe to the base of the tongue 18. Thus, the metal toe plate is encompassed with a soft napped cloth which will prevent the shoe from squeaking, which might result from frictional rubbing of leather or foamed plastic on the metal toe cap.

During the lasting of the shoe the lower ends of the liner portion 15, the cap liner 22, the felt strip 23, the insert 35, and the outer portion 14 are brought together and joined to the sole of the shoe.

By interposing the safety pad 30 between the metal toe cap and the outer portion 14 and attaching it to the outer portion by means of a line of stitching 31, the outer portion 14 being securely attached to the sole of the shoe, the forward end of the safety pad is securely anchored. Also, the safety pad 30 is securely anchored to the quarter portion 16 by the line of stitching 20. Thus, the safety pad 30 is raised above the wearer's foot so that the force of an object striking the shoe in the region of the vamp is cushioned not only by the compressibility of the safety pad, but also the tensile strength of the safety pad.

The safety shoe of the present invention is comfortable and light in weight; and at the same time it affords maximum protection for the toes of the wearer, while protecting the ball joint and arch of his foot against serious injury from all but a crushing blow. Thus a workman of the class described who might inadvertently drop a tool, an appliance part, a piece of lumber, or the like, on his foot while wearing a shoe of the present invention would in all probability not suffer a broken bone or serious injury to the ball joint or arch of his foot. Since

the shoe may be given the conventional appearance of a dress slipper, workmen will not object to wearing the safety shoe of the present invention.

While there has been disclosed in the foregoing description a practical embodiment of the safety shoe in accordance with the present invention, it will be understood by those skilled in the art that variations in the implementation of the concept of the invention are within the purview and scope of the invention.

What is claimed is:

1. In a safety shoe for workmen having an upper made of an outer portion and an inner liner, and having a toe and quarter portion, the improvement comprising, in combination, a tongue having inner and outer plies attached respectively to said outer portion and said inner liner of said toe portion, a metal toe cap in the forwardmost portion of said shoe between said outer portion and said inner liner of said toe portion, a safety pad of tough resilient flexible material interposed between said metal toe cap and said outer portion and extending therebeyond to terminate between the plies of said tongue, said safety pad overlying said metal toe cap and having one end securely anchored to said toe portion of said upper and the other end securely anchored to said quarter portion of said upper.

2. In a safety shoe for workmen having an outer portion and an inner liner as claimed in claim 1, a felt strip extending transversely of said shoe in edge to edge abutting relation with the rear edge of said metal toe cap.

3. A safety shoe for workmen comprising, inner and outer soles, a heel, an upper having an outer portion and an inner liner, said upper including a toe portion, a quarter portion, and a tongue having inner and outer plies joined respectively to said inner liner and outer portion of said upper, a metal toe cap rigidly reinforcing and capping the forwardmost portion of said toe portion of said upper, a felt strip in edge to edge abutment with the rear edge of said metal toe cap, a resilient flexible safety pad extending across the top of said toe portion from the forwardmost portion of said top of said toe portion and terminating between said plies of said tongue, said safety pad overlying said metal toe cap, and said

safety pad and said metal toe cap interposed between said outer portion and inner liner of said upper, said safety pad, said outer portion and said inner liner being securely anchored to said quarter portion and said toe portion.

4. In a safety shoe for workmen having the appearance of a simulated moccasin type slipper having inner and outer soles, a heel, an upper having a toe portion and a quarter portion with a vamp therebetween, said upper having an outer portion and an inner liner, a tongue having outer and inner plies joined respectively to said outer portion and said inner liner, and means for fastening said shoe on the foot of the wearer, the improvement comprising, a metal toe cap in the forwardmost portion of said shoe, a liner insert for said metal toe cap, a felt strip in edge to edge abutting relation with the rear edge of said metal toe cap, a moccasin cap overlying said metal toe cap, a safety pad attached to the inner side of said outer portion to overlie said metal toe cap, said safety pad being superposed on said metal toe cap and extending rearwardly across the top of the vamp to the free end of said tongue, said safety pad being a thickened piece of foamed synthetic rubber, and said moccasin cap stitched to the outer side of said outer portion to extend over an area coincident with the area of said safety pad over the vamp of said shoe, said safety pad, said outer portion, said inner liner and said moccasin cap being securely anchored in said toe portion and to said quarter portion of said upper.

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