Sept. 21, 1948. H. SIMONETTI 2,449,914

DETACHABLE HEEL

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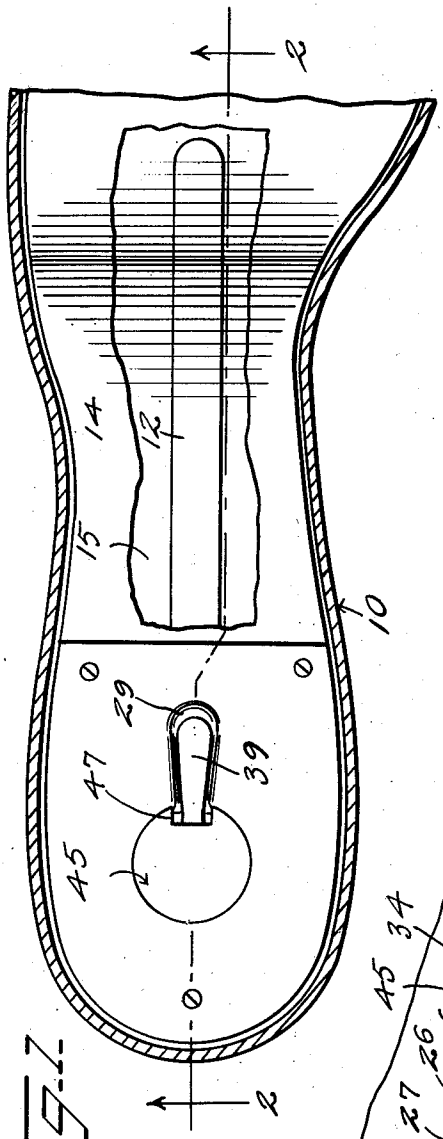

Fig. 1.

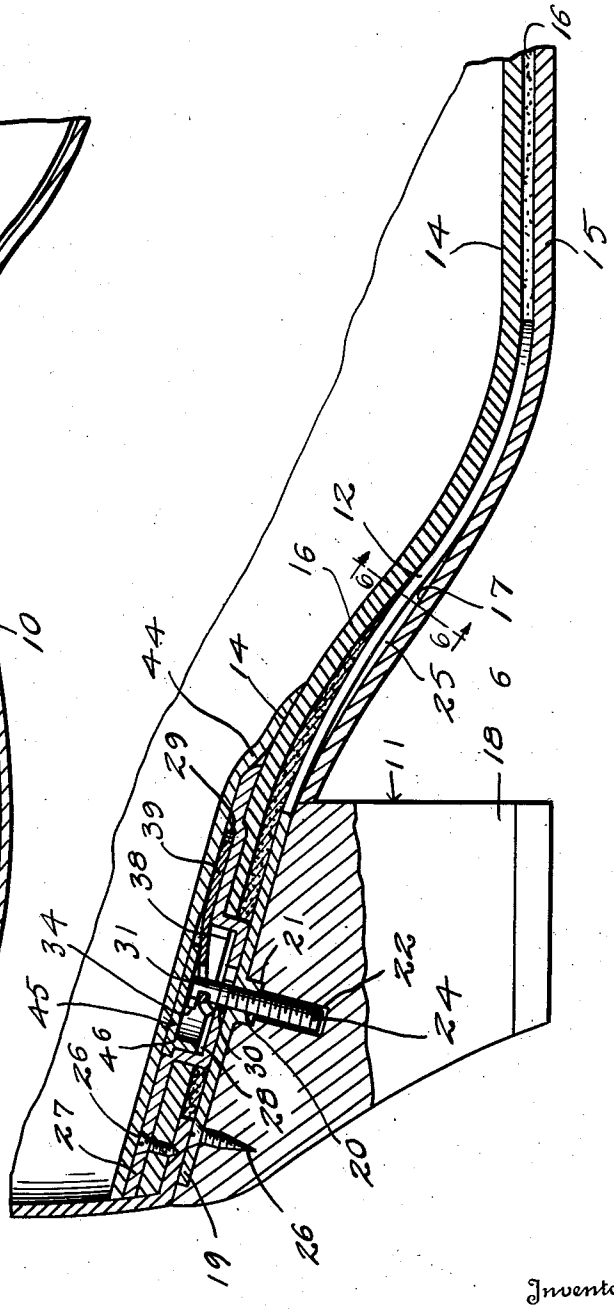

Fig. 2.

Inventor

Harvey Simonetti

By Kimmel & Crowell

Attorneys

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FIG. 3.

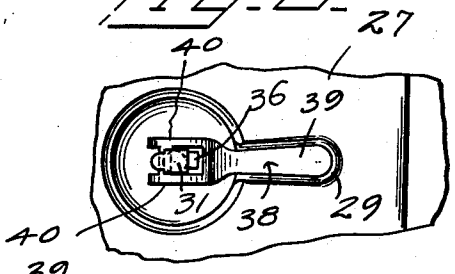
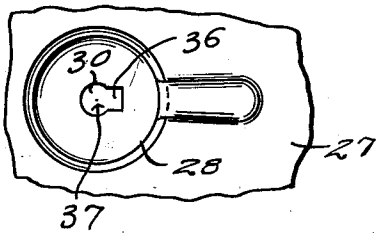


FIG. 7.



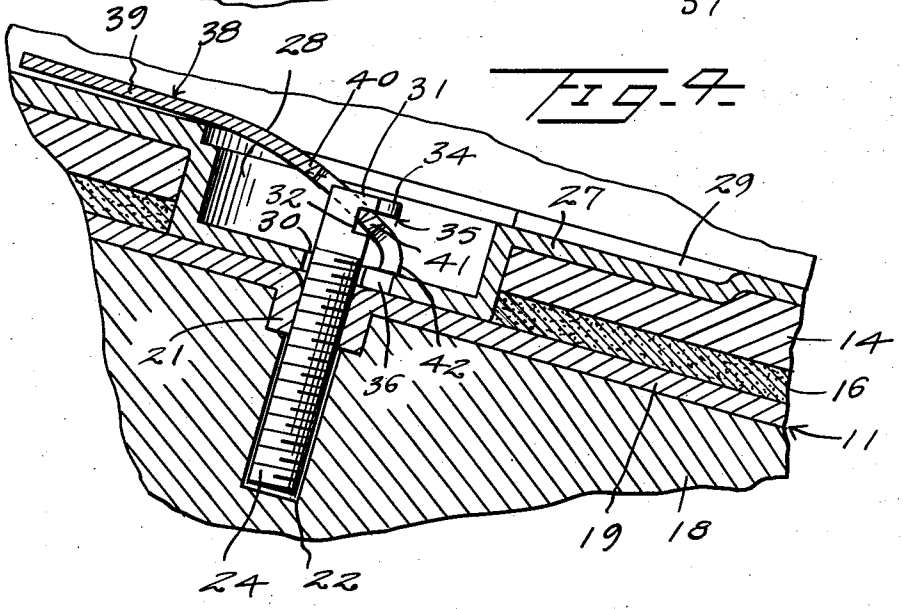


FIG. 4.

FIG. 5.

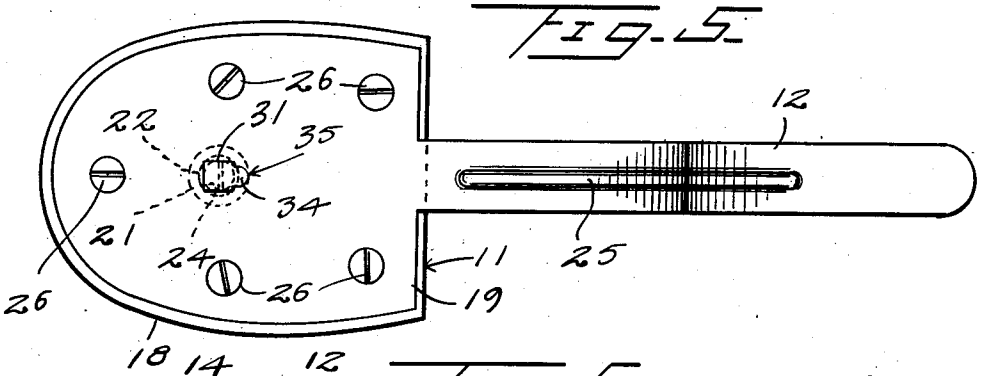
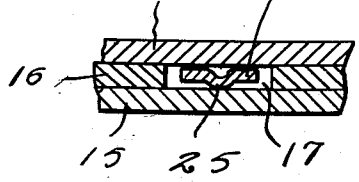


FIG. 6.



Inventor

Harvey Simonetti

By Kimmel & Crowell

Attorneys

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2,449,914

DETACHABLE HEEL

Harvey Simonetti, Hyattsville, Md.

Application February 21, 1947, Serial No. 729,920

6 Claims. (Cl. 36—36)

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This invention relates to shoes and more particularly to an improved shoe construction providing for the ready removal or attachment of the heel.

It is an object of this invention to provide an improved shoe construction of the kind to be more specifically described hereinafter, which will permit of the removal of the heel whereby the shoe may be soled without tearing the heel from the shoe, and whereby the heel may readily be replaced and locked securely in position without the use of nails or other permanent attaching devices.

Another object of this invention is to provide a shoe construction of this kind which is readily applicable to men's and women's shoes without modification.

Still another object of this invention is to provide a shoe construction of this kind wherein the heel is locked on a shoe by a lever above the outsole of the shoe, engaging a bolt or keeper fixed on the heel extending through the sole, the shoe being so constructed and arranged that the lever will lie substantially flush with the insole whereby the shoe may be worn with all the comfort of a continuous insole.

Yet another object of this invention is to provide an improved shoe construction of this kind whereby a shank stiffener is fixed to or carried by the heel for suitably supporting the shank of the shoe and for stabilizing the removable heel, the supporting bar being removable with the heel, whereby the shoe may be more readily repaired with the heel and supporter removed without tearing these members from the shoe as is the prevalent practice.

A further object of this invention is to provide an improved shoe of this kind having a novel locking means for securing the heel removably on the shoe, whereby the heel may be readily removed by rocking and rotating the lever. The locking means and necessary modifications of the shoe are of such construction and arrangement as to be readily and economically manufactured and assembled without increasing greatly the cost of the completed shoe, and at the same time providing for the speedy and ready removal of the heel for repairs, thus saving appreciable time and expense in the repair of such shoes.

With the above and other objects in view, my invention consists in the arrangement, combination and details of construction disclosed in the drawings and specification, and then more

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particularly pointed out in the appended claims.

In the drawings,

Figure 1 is a longitudinal section, partly broken away, of a shoe embodying a form of this invention,

Figure 2 is a vertical section taken on the line 2—2 of Figure 1,

Figure 3 is a top plan view, partly broken away, of the locking lever with the cap removed,

Figure 4 is a vertical section, partly broken away and enlarged, showing the locking lever in locked position,

Figure 5 is a top plan view of the heel and shank stiffener removed from the shoe,

Figure 6 is a transverse section taken on the line 6—6 of Figure 2,

Figure 7 is a top plan view of the plate in the shoe, with the heel and locking lever removed.

Referring to the drawings, the numeral 10 designates generally the body of a shoe, having a detachable heel and shank stiffener 11 secured thereon. In the art of repairing shoes, it is necessary to remove the heel for either soling or half-soling the shoes. It is desirable to provide a means for readily removing the heel from the shoe so that the shoe may be repaired. Many types of shoes are provided with shank stiffener as 12, and this too must be removed for repairing the shoes. It is the purpose of this invention to provide a shoe having a combined heel and shank stiffener 11, and means for locking the heel to the shoe in such a manner that it may be readily removed. The shoe 10, having an insole 14, and an outer sole 15, separated by a filler 16, is formed without the heel, and having the insole and outsole spaced apart near the rear end of the outsole to provide a rearwardly opening passage 17 in which the shank stiffener 12 may be slidably engaged.

The rear opening of the passage 17 coincides with the forward edge of the heel 18 where it abuts the lower side of the shoe. The heel 18 is formed with an upper plate 19, having a central opening 20 formed by the depression or downwardly extending walls 21. A bore or opening 22 extends downwardly in the heel 18, below the opening 20, in the plate 19, and a bolt 24 is rotatably secured in the downwardly extending walls of the plate 19.

The bolt 24 is threadably engaged in the plate 19 and extends downwardly into the opening 22 of the heel. The plate 19 is formed integrally with the forwardly extending shank stiffener 12 which extends into the passage 17 between the insole and the outsole. The shank stiffener 12 is

formed longitudinally thereof with a rib 25 struck from or formed in the center thereof for strengthening the supporting member throughout its arcuate length.

The plate 19 may be fixed to the heel 18 by screws 26, or other suitable fastening devices. The rear portion of the shoe above the heel, is provided with a plate 27 fixed to the insole by screws 26 or other suitable fastening devices, and is formed with an annular recess 28 in substantially the center thereof. The plate 27 is also formed with a recess 29 extending forwardly from the recess 28, and the bottom of the recess 29 is spaced upwardly from the bottom of the recess 28.

An opening 30 is formed in the bottom of the recess 28 and is substantially annular, through which the bolt 24 is adapted to extend. The bottom of the recess 28 is adapted to overlie and abut the plate 19. The bolt 24 is formed at its upper end with a rectangular shank 31. The shank 31 is formed with a groove 32 on one side thereof, and a head as 34 on the extreme upper end of the shank is adapted to extend over the groove 32 to provide an enlarged head on the bolt 24. The lower side of the head 34 and the groove 32 form a hook 35 on the upper end of the bolt 24.

The bottom of the recess 28 is formed with a rectangular opening 36 on one side of the opening 30, and communicating therewith, whereby the head of the bolt may be extended through the opening 37 formed by the openings 30 and 36 in one rotated position of the bolt 24. In other positions of the bolt 24, the head 34 will not be in proper alignment with the opening 37 and may not be inserted through the opening for attaching or removing the heel.

A lever 38 is engaged with the hook 35 for locking the heel to the shoe. The lever 38 is formed with an elongated arm 39 at one end, and a pair of bifurcated arms 40 at the other end. A connecting bar 41 is fixed between the arms 40 near the lower end thereof. The arms 40 at their extreme end are bent as at 42, to provide a cam surface below the connecting bar 41. The arms 40 are spaced outwardly of the opening 37 so that pivotal movement of the lever 38 will effect locking of the heel to the shoe, or in another position will provide for the removal of the lever 38.

The connecting bar 41 is adapted to be engaged in the groove 32 below the head 34 in the hook 35. In one pivoted position of the lever, as shown in Figure 4, the connecting bar 41 is firmly engaged in the hook 35 and the extreme ends of the arms 42 engage the upper surface of the plate 27 within the recess 28 for locking the heel to the shoe.

In the reversed or opposite position of the lever 38, the cam 42 will be moved to the oppositely pivoted position, whereupon the bolt 24 and the lever 38 will be raised free from engagement with the plate 27 to be removed from the hook 35. The bolt 24 may be rotated by the lever 38 in either position of the lever when the connecting bar 41 is engaged in the hook 35. The arm 39 of the lever 38 is bent downwardly to lie flush with the plate 27 in the locked position. In the properly locked position of the lever 38 and bolt 24, the arm 39 will lie in the recess 29 of the plate 27.

To provide for the added comfort of the shoe, a cover of flexible material as leather 44, is adapted to be placed over the plate 27. An annular cover plate 45, having depending flanges 46 is adapted to engage in the recess 28 for closing it when the heel is locked. The cover plate 45 is provided with a rectangular opening 47 on one edge thereof, through which the lever 38 will be engaged when in the locked position.

In the use and operation of this locking device, when the heel and shank stiffener are removed from the shoe, the first step in assembly is to insert the shank stiffener 12 into the passage 17 between the insole and outsole, and slide the heel down to its approximate position on the shoe. The bolt 24 may be rotated prior to the first step so that the head 34 extends forwardly of the heel, whereby the head of the bolt may be slidably engaged through the opening 37 in the plate 27. The lever 38 is then disposed with the connecting bar 41 engaging in the hook 35. The lever 38 is then pivoted about the connecting bar 41 for tensioning the bolt 24. The lever 38 may then be rotated about the axis of the bolt 24, effecting rotation of the bolt. The arm 39 will then be engaged in the opening 29 and the heel and shank stiffener locked in place. The cover plate 45 may then be inserted in place and the cover 44 placed over the assembly.

I do not mean to confine myself to the exact details of construction herein disclosed, but claim all variations falling within the purview of the appended claims.

What I claim is:

1. A shoe comprising an upper, an insole, an outsole, a heel, a plate in the rear of said shoe above said insole, said plate formed with a recess centrally thereof, said recess extending downwardly through said insole, a plate on said heel between said heel and said insole, a bolt carried by said heel extending upwardly through said latter plate and into said recess, a squared shank on said bolt in said recess, said shank formed with a groove on one side below the upper end thereof forming a hook, a bifurcated lever, a cross bar between the arms of said lever engageable in said hook, said lever extending beyond said cross bar forming a cam on said lever whereby pivotal movement of said lever in one direction about said cross bar engaged in said hook will effect locking of said heel on said shoe, and rocking of said lever in the opposite direction will permit removal of said lever from said hook and removal of said heel from said shoe.

2. A shoe as set forth in claim 1, including a shank stiffener on said latter plate extending forwardly from said heel, engageable between said insole and said outsole.

3. In a shoe having an upper, a sole, and a removable heel, means securing said heel on said shoe including a bolt on said heel extending upwardly therefrom, a notched shank on the upper end of said bolt forming a hook, an apertured plate in said shoe about said shank, a bifurcated lever, a cross bar between the arms of said lever intermediate the length thereof engageable in said hook, said arms engageable with said plate in one position of said lever for locking said heel on said shoe and removable from said hook in the opposite position of said lever permitting the removal of said heel.

4. In a shoe having a removable heel, means for locking said heel on said shoe, said means including an apertured recessed plate in said shoe, a bolt on said heel extending upwardly through said plate, a lever pivotally mounted on said bolt above said plate intermediate the length of said lever, and a cam on said lever engaging said

plate in one position of said lever for locking said heel on said shoe, said lever in another position thereof permitting the removal of said heel from said shoe.

5. In a shoe having a removable heel releasable means for locking said heel on said shoe, said means including a recessed plate in said shoe, said plate formed with an annular opening therethrough and an offset opening on one side of said annular opening communicating therewith, a bolt rotatably carried by said heel, a squared shank on said bolt extensible through said openings in one rotated position thereof, said shank partially overlying said plate in other rotated positions holding said heel against removal, a lever pivotally engaging said shank, a cam on said lever engageable with said plate in one pivoted position of said lever tensioning said bolt between said heel and said plate, said lever in another

position permitting rotation of said bolt and removal of said heel.

6. In a shoe having an upper, a sole, and a removable heel, a bolt on said heel extending upwardly therefrom, a plate in said shoe formed with an upwardly opening recess therein, said bolt engageable through said recess, a lever rockably carried by said bolt for securing said heel to said shoe in one pivoted position thereof.

HARVEY SIMONETTI.

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