March 28, 1939. J. T. LANCASTER 2,151,978

HEEL

Filed May 7, 1937

Fig.1

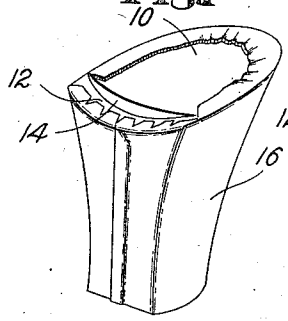
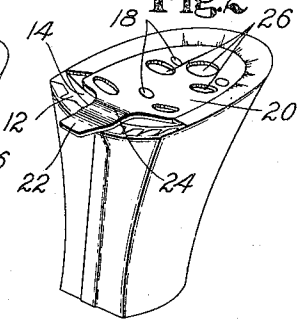


Fig.2



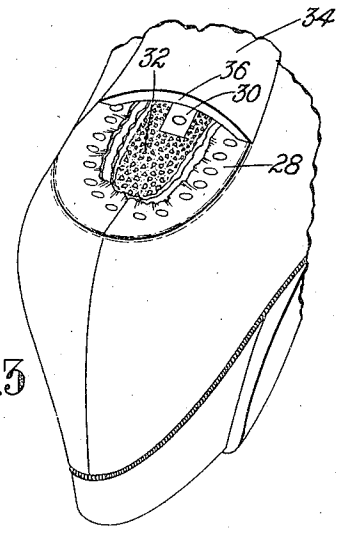


Fig.3

Fig.4

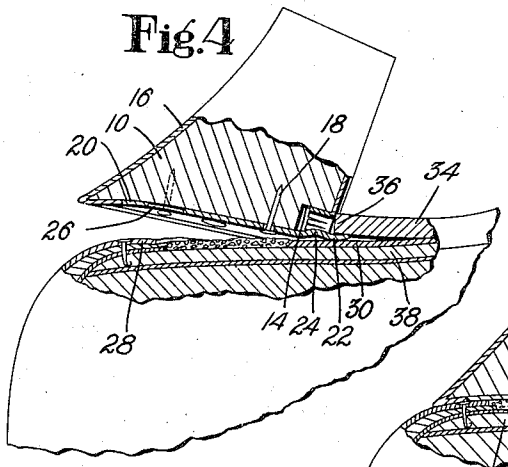


Fig.5

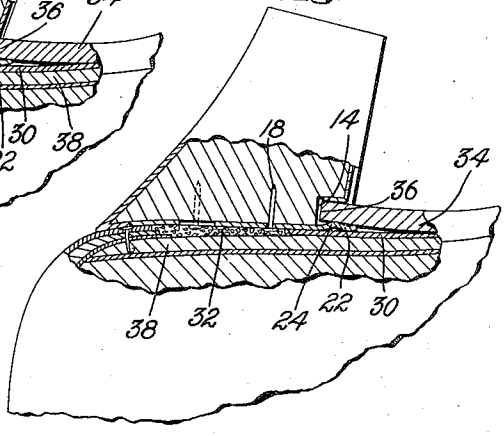


Fig.6

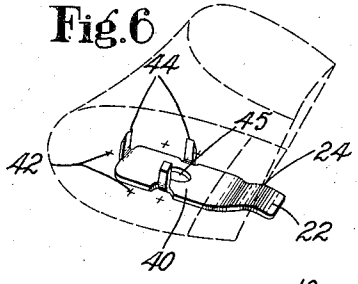
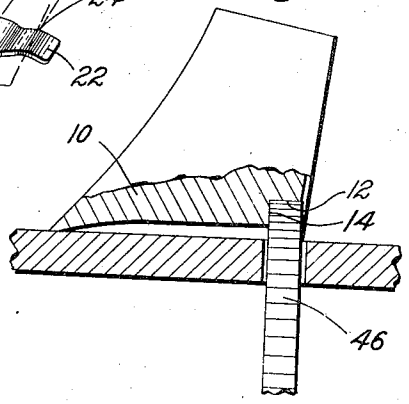


Fig.7



INVENTOR
John T. Lancaster
By his attorney
Victor Cobb

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UNITED STATES PATENT OFFICE

2,151,978

HEEL

John T. Lancaster, Newton, Mass., assignor to United Shoe Machinery Corporation, Paterson, N. J., a corporation of New Jersey

Application May 7, 1937, Serial No. 141,224

6 Claims. (Cl. 36—34)

This invention relates to shoes and heels therefor, and more particularly to shoe heel structures of the type in which the heel and heel end of the outsole are interfitted in such a manner as to produce a strong connection and a tight joint between the two.

A shoe having a heel of this type which is now in successful commercial use is disclosed in United States Letters Patent No. 2,121,172, granted June 21, 1938, on an application filed in the name of Fred C. Lovejoy, and it is an object of the present invention to improve heels of the type disclosed in said application with a view to reducing difficulties and cost both in the manufacture of the heels and in the application of the heels to shoes, and with a view to the production of a permanently tight joint between the heel and the outsole, regardless of variations in the thickness of the latter.

To this end the invention comprises a heel having a spring tongue overlying a sole receiving recess at the junction of its breast and attaching faces and so disposed that it may be forcibly lifted when the heel is being applied to a shoe but will permanently press the sole firmly against the bottom of the recess, regardless of the thickness of the sole, and thus produce a tight joint between the sole and the heel without difficulty and without requiring the reduction of all soles to an exactly uniform thickness.

In the illustrated forms of the invention the tongue is shown as secured to the attaching face of the heel back of the recess and projects forward and down somewhat into the space provided by the recess. In order to provide for easy engagement of the tongue under the rear end of an attached sole it is preferable that the tongue is sufficiently long to protrude in front of the heel breast, and this has the additional advantage that it affords a substantial brace for supporting and stiffening the heel against tipping relatively to the shoe.

The attachment of the tongue member to the heel may be by separate, driven fastenings or by spurs formed upon the member itself, and the portion of the member which lies upon the attaching face of the heel may either be positioned at the center of the heel, inside of the pattern of the heel attaching nails, or it may cover a large portion of the attaching face of the heel and be provided with a clearance opening or openings to permit such nails to pass freely through it.

By reason of its resiliency, the projecting portion of the tongue may lie closer to the bottom of the sole receiving recess in the heel than the thickness of the thinnest sole and still be capable of yielding sufficiently to permit even the thickest sole to be inserted beneath it, with the result that soles of all thicknesses will be pressed and held firmly against the bottom of the recess and a tight joint between the sole and heel will be maintained.

The present invention makes possible a very substantial economy in the manufacture of heels of the type referred to since, in the case of Cuban and military heels, it is not necessary to use an over-sized block to provide material for the usual forwardly projecting lip, and the formation of an open sole receiving recess of the kind shown is easier than the formation of the arcuate slot heretofore employed. The tongue member, being made separately from the body of the heel, may be of metal and will be much stronger than a wooden lip, with the result that there will be no loss from splitting or breakage. Furthermore, the attachment of the tongue member to the heel body may, if desired, be deferred until just before the heel is to be attached to a shoe so that heels which have been covered may be handled in bulk, kept in storage or transported without danger of scarring or damage to the covering material by projecting lips of other heels.

The above and other features and advantages of the invention will be better understood and appreciated from reading the following detailed description in connection with the accompanying drawing, in which

Fig. 1 is an angular view of a recessed heel to which a cover has been applied;

Fig. 2 is a similar view of the heel with a tongued plate embodying the invention secured to its attaching face;

Fig. 3 is an angular view of the heel end of a shoe having a short outsole which is ready to receive the heel shown in Fig. 2;

Fig. 4 is a side elevation, partly in longitudinal section, of the shoe shown in Fig. 3 showing the heel in process of being applied to the shoe;

Fig. 5 is a view similar to Fig. 4 showing the heel completely applied to the shoe;

Fig. 6 is an angular view showing an alternative form of tongued plate; and

Fig. 7 is a partly sectional view showing one way in which the recess may be formed in the heel blank.

In Figs. 1 and 2 there is illustrated a heel 10 of the Cuban type in the upper breast portion of which is formed a recess defined by a curved bottom 12 and a vertical wall or shoulder 14. The ends of the recess, considered transversely

of the heel, lie in the attaching face of the heel within the space bounded by the side faces thereof and the recess, therefore, is not visible at the sides of the heel. Vertically, the recess is as deep as, or deeper than, the thickness of the thickest sole with which the heel is to be associated and is adapted to receive the rear end portion of a sole of any thickness not exceeding its depth.

The heel may be covered with leather or other sheet material 16 or not, as desired.

Secured to the attaching face of the heel 10 by nails or screws 18 is a strong plate 20 which may be made of spring steel. This plate is formed with a stiff, resilient tongue 22 which projects forward as a continuation of the attaching face and overlies the sole receiving recess, extending downward into the said recess, as shown in Figs. 2 and 4, so that it is spaced from the bottom 12 thereof by a distance somewhat less than the thickness of a shoe sole. Preferably, though not necessarily, the tongue 22 will protrude some distance in front of the heel breast, especially in the case of a Cuban heel, to brace the heel against tipping relatively to the shoe to which it is attached.

A single large central opening or several suitably placed smaller openings 26 may be provided in the plate 20 to afford clearance for the nails or screws commonly used to attach the heel to a shoe. These are generally driven from the inside of the shoe, through the heel seat and into the heel.

The tongued plate 20, 22 may be secured to the attaching face of the heel either before or after the heel is covered. If it is not applied until just before the heel is to be attached to the shoe any danger of the covering upon one heel being marred by the projecting tongue of another heel will be avoided.

Fig. 3 shows the heel portion of a lasted shoe prepared for the attachment of my improved heel. The overlasted upper 28, shank stiffener 30, and bottom filler 32 are as in a conventional shoe but the rear end of the outsole 34 is merely cut off square, as shown at 36, a very short distance back of the heel breast line, instead of extending back over the heel seat and being fitted for the reception of the attaching face of the heel. Thus a considerable saving of outsole stock is realized and the heel seat fitting operation is entirely eliminated, it not even being necessary to split the rear end of the sole to a predetermined, exact thickness in order to produce a snug joint with the heel.

The manner of applying the heel to the shoe is illustrated in Figs. 4 and 5. The tongue 22 is inserted between the outsole 34 and the shank stiffener 30 or insole 33, as shown in Fig. 4, and the heel is then lifted sufficiently, against the tension of the spring tongue 22, to permit the rear end 36 of the shoe sole to enter the recess in the heel and the heel to be pushed forward to the position shown in Fig. 5 where it may easily be adjusted in position until its rim coincides accurately with the outline of the overlasted upper at the heel end of the shoe. The work is then ready for completion of the attachment of the heel to the shoe, which may be by nails or screws driven from the inside of the shoe through the clearance holes 26 and into the heel.

In Fig. 6 is shown one of several possible alternative forms of tongued plate. In this case the tongue 22, 24 is similar to that shown in Fig. 2 but the body portion of the plate, shown at 40, is of a size and shape to lie inside of the pattern of the heel attaching nails the positions of which are indicated by the crosses 42. Prongs or spurs 44, which are integral with the plate, are designed to be driven into the heel to secure the plate thereto, and a central opening 45 in the plate affords clearance for a temporary or permanent heel attaching screw. Obviously, either form of plate may be secured to the heel by either spurs, nails, screws or any other adequate fastening means, and the size, shape and arrangement of openings in such plate may be varied as required.

Fig. 7 illustrates how the sole receiving recess in the heel 10 may be easily and almost instantaneously formed in the heel block 10 by a simple circular cutter 46 such as a milling cutter or a thick saw. Such cutters are cheap and durable, and give much less trouble than the tubular cutters or routers necessary for cutting curved slots.

The resilient tongue 22 will be of such thickness and stiffness that it will permanently press the rear portion of the shoe sole tightly against the bottom 14 of the recess in the heel and maintain a snug joint between the sole and the heel throughout the life of the shoe, regardless of compression or shrinkage in the thickness of the sole. Being made of metal and securely affixed to the wooden heel, the tongue will also have a powerful effect in strengthening the heel and bracing it against tipping relatively to the shoe, and it may be of any length suitable to produce the desired stiffening and strengthening effect since the space between the outsole and the shoe bottom will permit its insertion therebetween even though the tongue be long enough to extend forward into the shank of the shoe, in which case it may serve the purpose of the shank stiffener 30 and make the use of the latter unnecessary.

Having described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A heel adapted for interengagement with the heel ends of short soles of different thicknesses, said heel having a sole receiving recess with a transversely curved bottom and a depth greater than the thickness of the sole, and a spring tongue overlying the recess and spaced from the bottom thereof by a distance less than the thickness of the sole.

2. A heel adapted for interengagement with the rear end of a short sole, said heel having a breast face, a concave attaching face and a sole receiving recess at the junction of said faces, said recess extending rearwardly from the breast face of the heel, terminating laterally within the attaching face of the heel, and being deeper than the thickness of the sole, and a stiff, resilient tongue secured to the attaching face of the heel back of said recess and projecting forward over the recess, the projecting portion of said tongue extending downward into the recess and being spaced from the bottom thereof by a distance less than the thickness of the sole.

3. A heel adapted for interengagement with the heel ends of short soles of different thicknesses, said heel having a sole receiving recess which is deeper than the thickness of a sole at the transverse center of the heel breast and diminishes to nothing at the sides of the heel breast, and a resilient tongue projecting forward from the attaching face of the heel over the central portion of the recess and spaced from the bottom thereof by a distance less than the thickness of the sole.

4. A heel adapted for interengagement with the heel ends of short soles of different thicknesses, said heel having at the junction of its breast and attaching faces a sole receiving recess which is deeper than the thickness of a sole, and a resilient tongue secured to the attaching face of the heel and projecting forward and downward into the recess and beyond the breast face of the heel, said tongue being spaced from the bottom of the recess by a distance less than the thickness of the sole.

5. An unattached heel adapted for interengagement with the heel end of a short sole upon a shoe, said heel having at the junction of its breast and attaching faces a recess to accommodate the end of the sole, and a spring metal tongue member secured to the attaching face of the heel body and having a tongue portion projecting forward through the recess and protruding beyond the breast face of the heel.

6. A wooden heel having a sole end receiving recess at the junction of its breast and attaching faces, and a plate of spring metal secured to its attaching face, said plate covering the majority of said attaching face, being provided with clearance openings for the passage of heel attaching fastenings, and having a forwardly projecting tongue portion which overlies the bottom of the recess and protrudes beyond the breast face of the heel.

JOHN T. LANCASTER.