

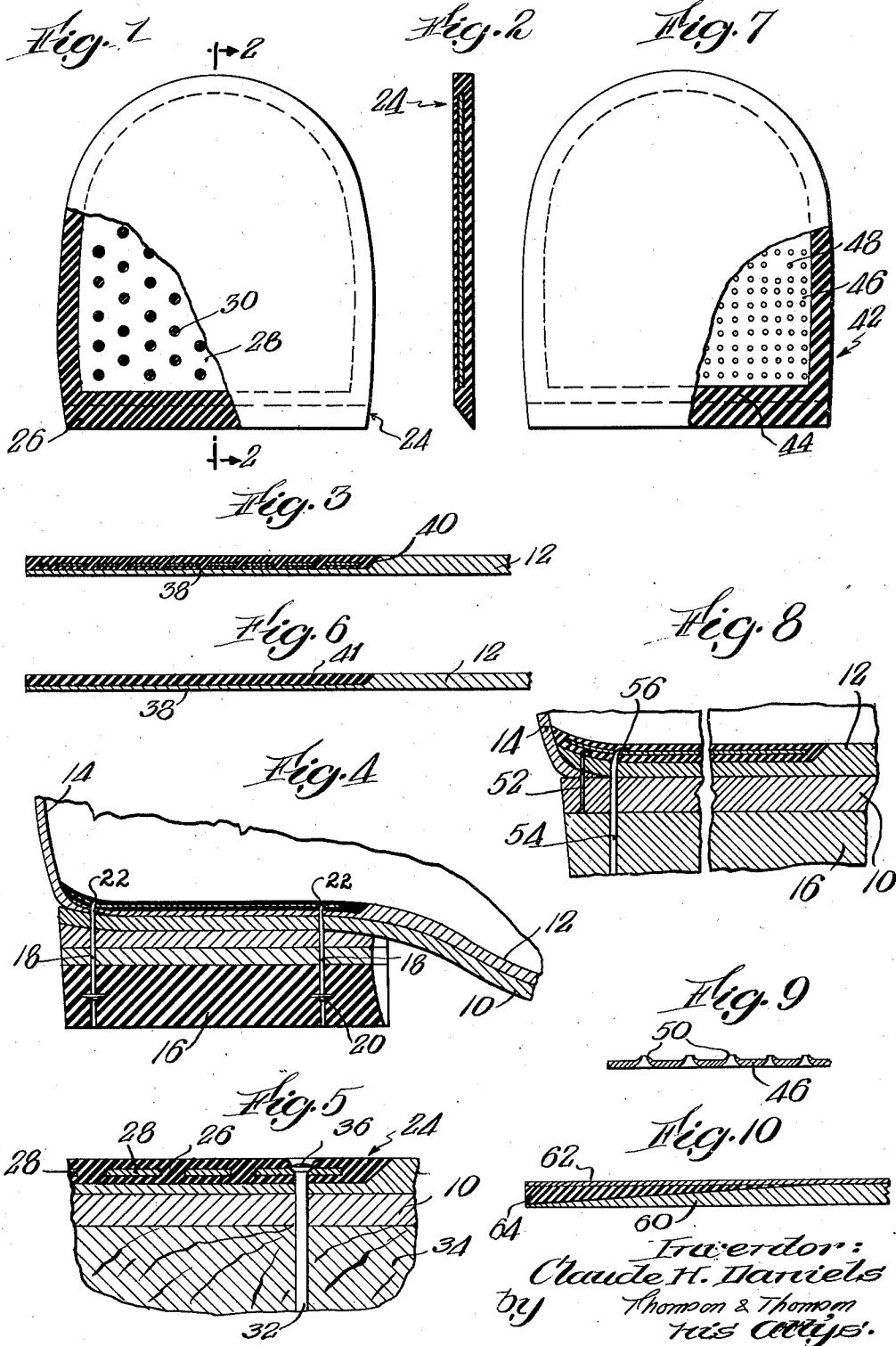
July 5, 1938.

C. H. DANIELS

2,122,809

ANCHORED HEEL PROTECTOR

Filed Oct. 8, 1935



Inventor:
Claude H. Daniels
by
Thompson & Thompson
Attorneys

UNITED STATES PATENT OFFICE

2,122,809

ANCHORED HEEL PROTECTOR

Claude H. Daniels, Wellesley Hills, Mass.

Application October 8, 1935, Serial No. 44,041

2 Claims. (Cl. 36—37)

This application relates to improvements in heel protectors for shoes which are anchored in place as they are attached.

It is customary practice in shoe construction to attach the heels to the shoe with nails passing through the outsole and clinched to the innersole. In spite of careful construction it is almost always found that the nails form protuberances which can be felt by the wearer of the shoes. Lining pieces have been placed over the innersole at the heel portions of the shoes to cover the nails, but these lining pieces are so thin that the nail protuberances can still be felt, and furthermore the lining pieces, if merely cemented in place, become loose and detached from the shoes.

The purpose of the present invention is to construct the shoes in such a manner that the heads or clinched points of the nails which secure the heels to the shoes, are countersunk below the top surface of the heel protector or pad, and will not form objectionable protuberances as the shoes are worn.

A further object of the present invention is the attachment of the heels to the shoes in such a manner that the nails are held by a nail anchoring portion of the heel protector below the normal level thereof or by a bottom portion of the heel protector that is harder, and to which the nail points will be clinched while passing through the softer upper portion thereof.

A still further object of my invention is the design of heel pads which may be placed upon or fitted in skived out portions of the innersole to receive the heel nails and in which the heel pad includes a nail anchoring section vulcanized in a cushion of rubber whereby the nails when driven in either from the outer or inner sides of the shoe will pass through the soft rubber of the cushion and be anchored on the section so that the nail heads or clinched points will lie beneath the upper level of the rubber cushion.

The heel pads may be built into the shoes when made or put in place after the shoes are finished. The heel pads may be made from various materials such as rubber, sponge rubber, felt or other soft material which is combined with stiffer material such as metal, leather or fabric. The anchoring section may be in one piece or several pieces.

Further objects and advantages of my improvements will be more readily apparent from the following description taken in connection with the attached drawing in which specific embodiments of my invention are disclosed.

In the drawing,

Fig. 1 is a plan view partially shown in section of a composite rubber and fibre-board heel pad;
Fig. 2 is a transverse section taken on the plane indicated 2—2 in Fig. 1;

Fig. 3 is a longitudinal section taken of a portion of the innersole with the heel pad in place;

Fig. 4 is a fragmentary vertical section of the heel portion of a shoe showing the heel nails clinched to the fibre-board of the heel pad;

Fig. 5 is a detail section of the heel portion of a shoe in which the heel nails are driven from the inside of the shoe.

Fig. 6 is a fragmentary longitudinal section similar to Fig. 3 but showing a modified form of the heel pad;

Fig. 7 is a plan view partially shown in section of a further modification of the heel pad;

Fig. 8 is a detail vertical section of the heel portion of a shoe showing the heel pad of Fig. 7 in position;

Fig. 9 is a detail section of the metal plate shown in Figs. 7 and 8; and

Fig. 10 is a longitudinal section of an improved insole.

Referring to Fig. 4, the outsole of the shoe is indicated at 10, the innersole at 12 and a portion of the shoe counter is shown at 14. The rubber heel 16 disclosed in this embodiment is attached in accordance with customary practice by nails 18. The heads 20 of the nails are received within the body of the rubber heel. The heels are attached in a heeling machine which turns over the points 22 of the nails, as illustrated. In ordinary practice these bent over nail points 22 are merely clinched to the upper portion of the innersole, and in spite of careful construction tend to form protuberances within the shoe, especially as the shoes become worn.

According to the present invention, the points 22 of the nails 18 are clinched to heel pads which may be made as parts of innersoles or separate therefrom. One form of heel pad 24 is shown in Fig. 1 and comprises a body of rubber 26 which may be of any desired grade such as soft rubber or sponge rubber which will, however, permit the points 22 of the heel nails to pass through the rubber when turned over against the metal of the last so that the points lie beneath the upper level of the rubber heel pad as the rubber springs back to position after the nailing operation. It will be understood that the rubber will be compressed against the last so that the nail points will countersink in the rubber. According to the preferred embodiment, the heel pad 24 includes

a nail anchoring section 28 therein and adjacent the underside thereof so that there is a thicker layer of rubber above the reinforcement than below the reinforcement. The anchoring section 28 in this form may be of fibreboard and may include small perforations 30, as illustrated, in order that the rubber 26 will flow through the perforations and bind the anchoring section more firmly in position. Thus the turned over points 22 of the heel nails will clinch to the anchoring section 28 thereby holding the heel pad in place and preventing nail protuberances in the shoes.

The construction illustrated is just as satisfactory when used with shoes in which the heel nails are driven from the inner side of the shoes, as shown in Fig. 5, in which the outsole 10, inner-sole 12 and heel cushion 24, including rubber 26 and perforated reinforcement 28, are the same as previously described. The nails 32 are driven from the inner side of the shoe into the heel 34 so that the heads 38 of the nails are forced through the softer rubber 26 to anchor upon the section 28, thus the nail heads are countersunk in pockets, and it is impossible for the wearer to feel the nails in spite of long continued use of the shoes.

The heel pads could, of course, be placed over the innersole, but it is preferable to set the pads into the innersoles, as illustrated, thus the innersole 12 is skived away at its rear portion to leave a thin section 38, and there is a bevel surface 40 between the skived portion and the full thickness of the innersole. The heel pad is formed to fit into the skived out portion of the innersole so that the upper side of the heel pad will be substantially on a level with the upper face of the full thickness innersole, although it is to be understood that the pad may extend above the insole if desired. The heel pad, of course, may be cemented in place to form a part of the insole prior to nailing the insole into the shoe.

In Fig. 6 the innersole 12 is skived at its rear portion to have a thin portion 38 in the same manner as in Fig. 3, but in this form the pad may be of solid rubber vulcanized to the innersole as indicated by 41. Furthermore, in this form the rubber pad 41 may be formed with a harder layer of rubber at its bottom portion than at its upper portion so that the nails will clinch to the harder portion of the rubber beneath the soft top surface of the rubber pad.

In Fig. 7 the heel cushion 42 is composed of rubber 44 and a thin metal plate 46 which may be in a single piece, as shown, or in separate pieces. The metal plate is punctured from the underside to provide small perforations 48 through the plate and burs 50 on the upper side of the plate. The rubber is applied to form a thin layer on the underside of the plate and a

thicker layer on the upper side of the plate which will be securely anchored by the burs 50. The plate is shown in detail in Fig. 9.

Fig. 8 illustrates the heel cushion of Fig. 7 built into a shoe and shows the outsole 10, insole 12, upper 14 and heel 16 as in Fig. 5. The lasting tacks 52 do not go through the plate 46 but the heel nails 54 are driven through the plate and the points 56 are turned over to clinch on the plate. The turned over points will be beneath the upper surface of the heel cushion.

It is to be further understood that the same result of obtaining a soft heel cushion may be obtained by making the entire insole in two layers instead of just the heel portion, as shown, and in this form the upper layer would be of soft material and the under layer of stiffer material, and a nail anchoring strip would be used in the same manner as above described.

Fig. 10 illustrates another form of construction in which the insole is composed of a stiff bottom ply 60 and a thin, more flexible upper ply 62. At the heel portion the plies 60 and 62 are separated to receive a soft rubber insert 64. The parts are cemented together and the insole is nailed into the shoe in the regular manner. The nails will countersink through the top layer 62 and the rubber 64 to anchor on the bottom layer 60.

I have disclosed several embodiments of the manner in which my invention may be carried out in practice, but it is to be understood that various modifications may be resorted to in commercial practice without departing from the spirit of my invention, as expressed in the appended claims.

I claim:

1. In a boot or shoe having an insole, outsole and heel, a heel protector covering the heel portion of the insole composed of a body of rubber and a nail anchoring plate in the body of rubber and nails attaching the heel to the outsole, said nails extending through the heel, outsole, insole and the anchoring plate of the heel protector, the points of the nails being clinched to the anchoring plate and lying beneath the outer rubber surface of the heel protector.

2. In a boot or shoe having an insole, outsole and heel, a heel protector attached to the heel portion of the insole composed of a body of rubber and a thin metal plate embedded in the rubber body and nails attaching the heel to the shoe, the heads of the nails being anchored in the heel and the points of the nails extending through the metal plate, said points being turned over and clinched to the metal plate so as to lie within the body rubber beneath the upper surface thereof.

CLAUDE H. DANIELS.