Jan. 16, 1962 R. D. TWIGGS, JR 3,016,630

SHOES

Filed May 1, 1958

3 Sheets-Sheet 1

FIG. 1

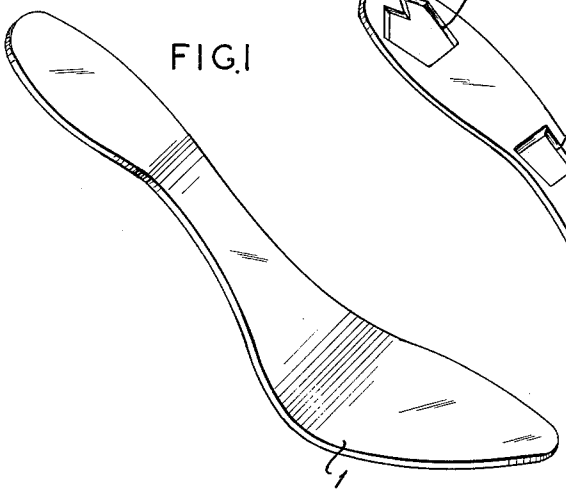


FIG. 2

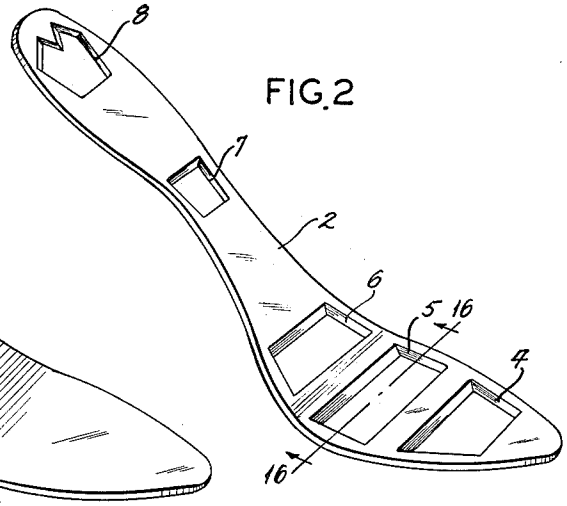


FIG. 3

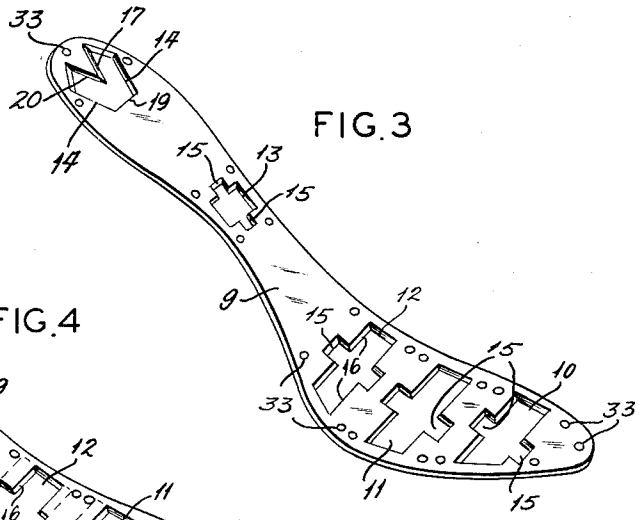
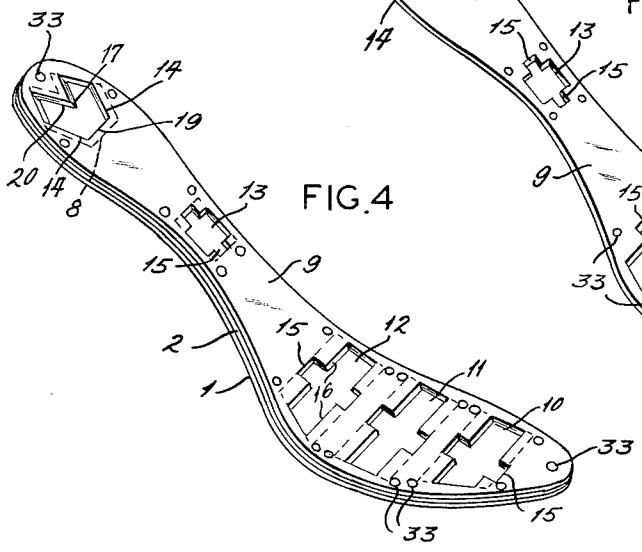


FIG. 4



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FIG.5

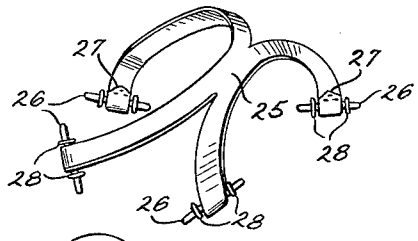


FIG.6

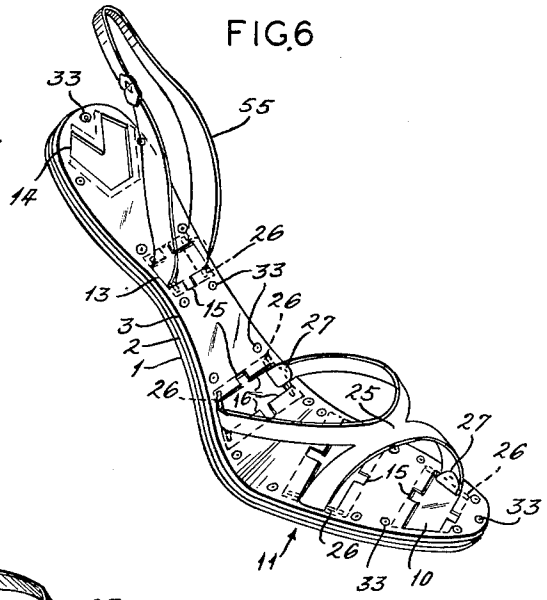


FIG.8

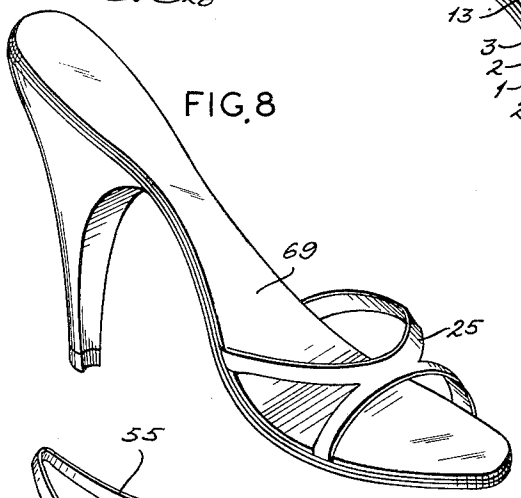


FIG.7

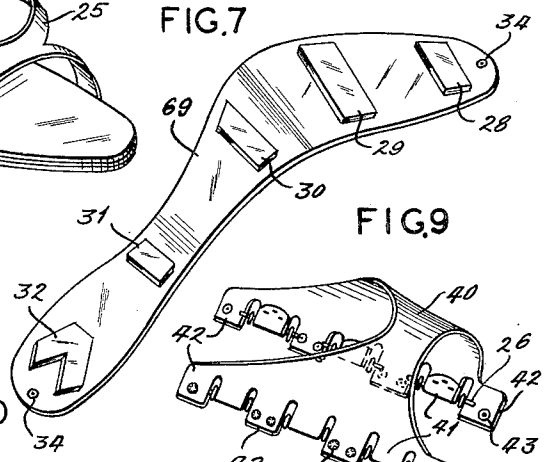
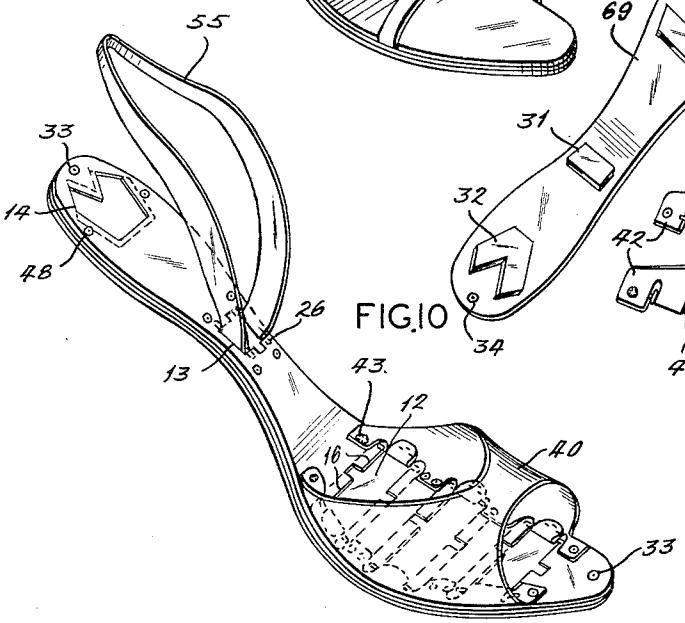


FIG.9

FIG.10



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FIG.11

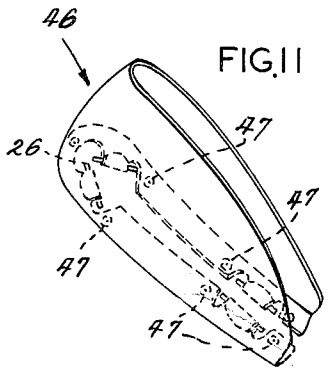


FIG.12

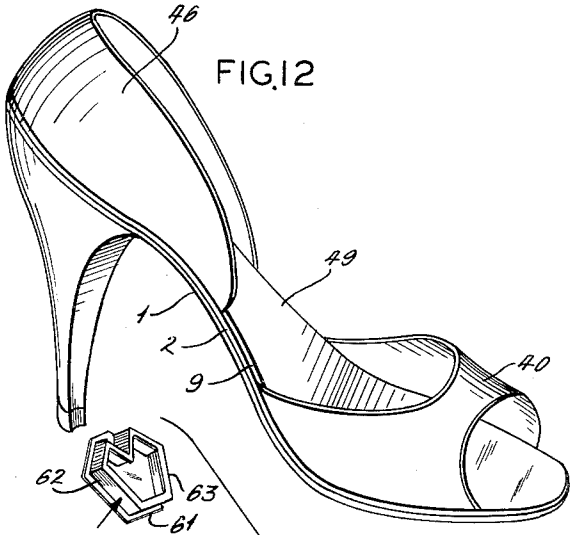
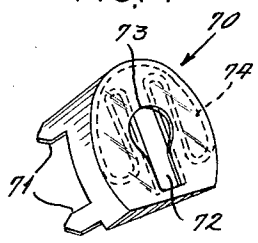


FIG.14



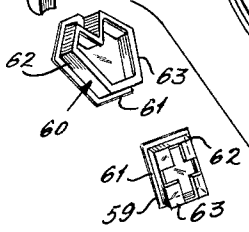


FIG.13

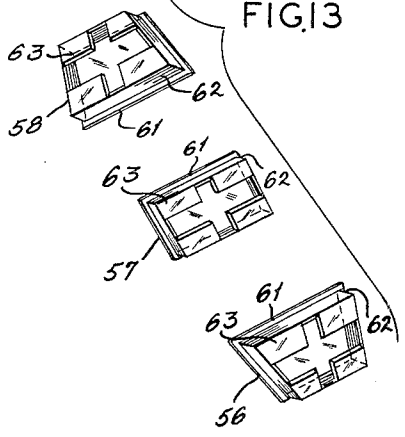


FIG.15

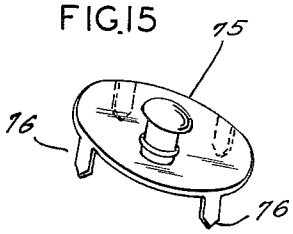
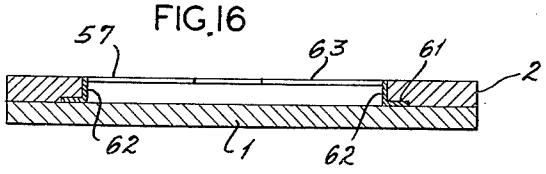


FIG.16



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3,016,630

SHOES

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Filed May 1, 1958, Ser. No. 732,231
5 Claims. (Cl. 36—2.5)

This invention relates to shoes, it being understood that the expression shoes applies to boots, sandals, slippers, mules, etc.

One of the objects of this invention is to provide a shoe having a sole of such a construction, with an upper of such a construction, that the upper may be detachably connected with the sole.

Another object is to provide a shoe and its upper of such constructions that they may be assembled without the necessity of lasting the upper to the sole.

Another object is to provide a shoe having a sole of such a construction, arranged for attachment thereto of variable uppers of such constructions as to provide a repetoire of shoes.

Further objects will appear from the detailed description taken in connection with the accompanying drawings in which will be described and shown the procedures of building up the shoe; it is to be understood, however, that this invention is not to be restricted as to the embodiments described and shown, except as within the appended claims.

In the drawings:

FIGS. 1, 2, 3 and 4 are perspective views showing a procedure of building up a sole;

FIG. 5 is a perspective view of the fore-part of an upper;

FIG. 6 is a perspective view of the upper as latched to the sole;

FIG. 7 is a perspective view of the bottom of a sole part adapted for placement between the sole and the latched upper of FIG. 6;

FIG. 8 is a perspective view of the complete shoe made in accordance with the proceeding figures;

FIG. 9 is a perspective view of the fore-part of an upper in accordance with another embodiment of this invention;

FIG. 10 is a perspective view similar to FIG. 6 but showing the latching of the upper of FIG. 9 to the sole;

FIG. 11 is a perspective view of the counter-part of a shoe;

FIG. 12 is a perspective view of a shoe with the fore-part and counter attached and with the inner sole, such as that of FIG. 7, placed between the sole and the upper;

FIG. 13 shows a series of perspective views of attachments adapted for incorporation in the soles of FIGS. 6 and 10;

FIG. 14 is a perspective view of a form of snap socket adapted for incorporation in the soles of FIGS. 6 and 10;

FIG. 15 is a perspective view of a snap plug adapted for incorporation with the socket of FIG. 14; and

FIG. 16 is a section of the sole of FIG. 2, across the recess 5, 16—16, but with the attachment 57 of FIG. 13 in place.

In the following description of an illustrative embodiment, the shoe sole is made up of a number of sole parts, however, generally some of the sole parts may be

combined into one piece as will be apparent from the following description.

Referring to the accompany drawings:

FIG. 1 is a perspective view of an outsole 1 which may be of usual construction having no channels or ledges, this outsole serving as a base upon which the other sole parts are built. FIG. 2 is a perspective view of a midsole 2 provided with a series of recesses or channels 4, 5, 6, 7 and 8 of the configuration shown. This midsole may be cemented to the outsole 1, or it may be of one piece with the outer sole thus forming a second sole part, channels 4, 5, 6, 7 and 8 being formed therein in any suitable manner. An inner sole thus forming a second sole part 9, FIGURE 3, is provided with a series recesses 10, 11, 12, 13 and 14, of the same general configuration as are the recesses 4, 5, 6, 7 and 8, except that the recesses 10, 11, 12 and 13 are narrower along the inner sole than are the recesses 4, 5, 6 and 7, along the outer sole. Otherwise stated the crosswise recesses 4, etc., in the sole part 2 are wider along the sole than are the open crosswise recesses 10 etc., in the sole part 9. As shown the recesses 4 etc., as well as the recesses 10 etc., terminate near the outside margins of the sole. The sole which is built-up of sole parts 2 and 9 is, therefore, recessed crosswise thereof at 4 etc., and along and underneath the crosswise edges of the open recesses 10 etc., and along the sole to form an overhanging ledge, specifically, opposed overhanging ledges 16 underneath the open recesses 10 etc. Each of the recesses 10, 11, 12 and 13 may also be provided with one or two key slots 15 extending along the sole. When the inner sole 9 is placed over the midsole 2, as shown in FIG. 4, there will be ledges 16 transverse of the sole and overhanging the recesses 4, 5, 6 and 7 for the purpose to be described. The recesses 8 and 14 of FIGS. 2 and 3 are of special construction as shown, the recess 14 as a whole being smaller than the recess 8, so that the edges 14, 17, 19 and 20 overlie the edges of the recess 8 to form ledges 14, 17, 19 and 20. The key slots 15 enlarge the recesses so as to provide key slots for the purpose to be described. The inner sole 9 may be cemented to the midsole 2, or it may be integral therewith and with the outsole 1, in which case the various recesses 10, 11, 12, 13 and 14 are formed in a manner to provide overhanging ledges 16, 19 and 20 which may be accomplished by suitable tools which are formed to undercut the recesses 10, 11, 12, 13 and 14. In all of the above, the recessing of the sole crosswise thereof, may be termed undercutting so that the sole is undercut cross-wise thereof to provide overhanging ledges.

The fore-part 25 of the upper, FIG. 5, may be of suitable or usual construction and is provided with projections in the form of cross pins 26 which are attached to the edges of the fore-part in any suitable manner by folding over those edges as shown at 27. The pins may be held in place by enlargements 28, which may be integral therewith or in the form of washers forced thereon. These pins form projections which can enter the recesses 10, 11, 12 and 13, and underneath the ledges 16. The recesses are of sufficient dimensions to bodily receive the projections or pins for engagement underneath the ledges. The recesses are therefore so constructed to receive the latches for engagement underneath the ledges. The fore-part of the upper is therefore attached to the composite

sole, FIG. 6, by slipping the projections 26 through the key slots 15 beneath the ledges 16 and moving them outwardly so as to extend to near the edge of the composite sole. In order to retain the projections in place, a sock liner 49, FIG. 12, may be placed over the composite sole, FIG. 6, and over the inturned edge 27 of the upper. A form of sock liner is shown at 69, FIG. 7, which has at its bottom lugs 28, 29, 30, 31 and 32, which take into the recesses 10, 11, 12, 13 and 14 and engage the projections 26 so as to securely hold the upper in place. In order to secure the sock liner 69 to the composite sole, the insole 9 may be provided with a series of sockets 33, while the inner sole may be provided with a series of plugs 34, which parts 33 and 34 may be of the usual snap fastener construction well known in the art. In that way the sock liner 69 is detachably secured to the composite sole of FIG. 6. The complete shoe will therefore appear as in FIG. 8 with the inside surface of the sock liner 69 smooth.

Referring to FIGS. 9, 10, 11 and 12, 40 designates a fore-part of another form of upper whose ends are provided with pins 26 on the same character as shown in FIGS. 5 and 6 but which in this case are attached to tabs 41. Other tabs 42 are provided with elements 43 of snap fasteners to engage with the corresponding parts (not shown) on the insole 9. In this manner after the projections 26 are inserted into the recesses and moved out to the edges of the sole, the snap fasteners 43 are closed to hold the upper in place. A counter 46 of any usual construction is provided with projections 26 similar to that in FIGS. 9 and 10 which take under ledges at the heel part. The whole may then be secured by snap fasteners of which the parts are shown at 47 and 48. After the upper and the counter are in place, an ordinary sock liner 49, FIG. 12, may be placed over the composite sole because the upper and counter are held not only by the projections, but also by the snap fasteners; however, a socket liner like 69, FIGS. 7 and 8, may again be employed. FIG. 12 then shows the complete shoe.

In FIGS. 6 and 10, a heel strap 55, again provided with projections 26 engaging under the ledges of the recess 13 may be employed in connection with either the upper part 25 and/or with the counter 46.

FIG. 13 shows a series of attachments which may be in the form of metal stampings and are generally the form of the channels 10, 11, 12, 13 and 14, that is being respectively designated generally by 56, 57, 58, 59 and 60. Each of these has a flange 61, an upstanding part 62 and an overhanging part 63 with key slots. These attachments may be built into the shoe in the following manner: They are placed in the recesses 4, 5, 6, 7 and 8 of the midsole 2, FIG. 2; the inner sole 9, FIG. 3, is then placed over these attachments so as to take up the vertical spaces of the parts 62. These attachments will then be held in place by cementing the inner sole 9 to the midsole 2. They will again form recesses with key slots and ledges as in FIGS. 6 and 10 into which the projections 26 may be placed. The shoe is then completed as in FIG. 6 to FIG. 8 and as in FIG. 10 to FIG. 12. FIG. 16 shows a cross section of the sole of the shoe showing in what manner the stampings 56–60 will be positioned in the shoe; FIG. 16 showing the position of stamping 57. These stampings may, of course, be of metal or plastic.

FIGS. 14 and 15 show a snap fastener, which may be again of sheet metal stampings or plastic stampings. This may be in the form of a shallow flanged part 70, having prongs 71 to secure the same to the midsole 2 and with a slot 72 which is enlarged at 73 and is provided with a convolute spring 74. This forms a socket of a snap fastener. The plug of a snap fastener is shown in FIG. 15 and has a disc 75 provided with prongs 76 for attachment to the inner sole 9 and with a plug 74 to engage the socket of FIG. 14. This snap fastener is particularly useful for employment in the toe of the shoe. As with the stampings, FIG. 13, they are shallow so as to take up little space vertically of the sole. In lieu of the stampings 70 and 75, ordinary snap fasteners may be employed.

It will therefore be seen that this invention accomplishes its objects. Generally, the shoe comprises a sole, an upper, a keeper, in the form of a ledge or ledges, FIGS. 4 and 6, positioned near the edge of and at the top side of the sole, a projection, viz, 26, FIGS. 5, 6, 9 and 10 on the edge of the upper and adapted to releasably engage underneath a ledge 16 and means separate from the ledge, viz., the parts 28, 29 and 30, FIG. 7 or the snap fasteners 43, FIGS 9, 10 and 11, or the snap fasteners 33 or the snap fasteners, FIGS. 14 and 15, adapted to retain the projection 26 in engagement with the keeper. The above provides means for releasably engaging a selected upper with a sole and enables a series of uppers to be releasably attached to the sole in order to provide a repetoire of uppers with the sole. As previously described, the sole may be of separate parts, although the sole may be of one piece, which is suitably channeled to provide ledges 16 with key slots 15.

Having thus described the invention, what is claimed and desired to be secured by Letters Patents is:

1. A shoe, comprising, a first sole-part, an upper having inturned edges, said first sole-part having an open recess extending therethrough and crosswise thereof, a second sole-part underneath said first sole-part, said second sole-part having a second recess extending crosswise thereof but wider therealong than said first recess extends along said first sole-part in order to form ledges on said first sole-part overhanging said second recess crosswise of said second sole-part, and projections on the edges of and extending along said upper and insertable through said second recess and under said ledges, said recesses being of sufficient dimensions to bodily receive said projections for engagement with and underneath said ledges.

2. A shoe, comprising, a first sole-part, an upper having inturned edges, said first sole-part having an open recess extending therethrough and crosswise thereof, a second sole-part underneath said first sole-part, said second sole-part having a second recess extending crosswise thereof but wider therealong than said first recess extends along said first sole-part in order to form ledges on said first sole-part overhanging said second recess crosswise of said second sole-part, projections on the edges of and extending along said upper and insertable through said second recess and under said ledges, said recesses being of sufficient dimensions to bodily receive said projections for engagement with and underneath said ledges, and means adapted to retain said projections in said second recess and underneath said ledges.

3. A shoe, comprising, an outer sole, an inner sole attached to said outer sole, an upper having inturned edges, said outer sole having a recess extending crosswise thereof, said inner sole having an open recess extending crosswise thereof above said first recess but narrower along said sole to form a ledge overhanging said first recess and extending to but stopping near the edge of said sole, and a projection on the edge of said upper and insertable through said second recess and under said ledge, said second recess being of sufficient dimensions to bodily receive said projection for engagement with and underneath said ledge.

4. A shoe, comprising, an outer sole an inner sole attached to said outer sole, an upper having inturned edges, said outer sole having a recess extending crosswise thereof, said inner sole having an open recess extending crosswise thereof above said first recess but narrower along said sole to form opposed ledges overhanging said first recess, and projections on the opposite edges of said upper and insertable through said second recess and under said ledges, said first recess being of sufficient dimensions to bodily receive said projections for engagement with and underneath said ledges.

5. A shoe, comprising, an outer sole, an inner sole

attached to said outer sole, an upper having inturned edges, said outer sole having a recess extending crosswise thereof, said inner sole having an open recess extending crosswise thereof above said first recess but narrower along said sole to form opposed ledges overhanging the said first recess and extending to but stopping near the edge of said sole, and projections on the opposite edges of said upper and insertable through said second recess and under said ledge, said first recess being of sufficient dimensions to bodily receive said projections for engagement underneath said ledges, and a sole engaging the inner edges of said upper adapted to retain said projections in engagement with said ledges.

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