

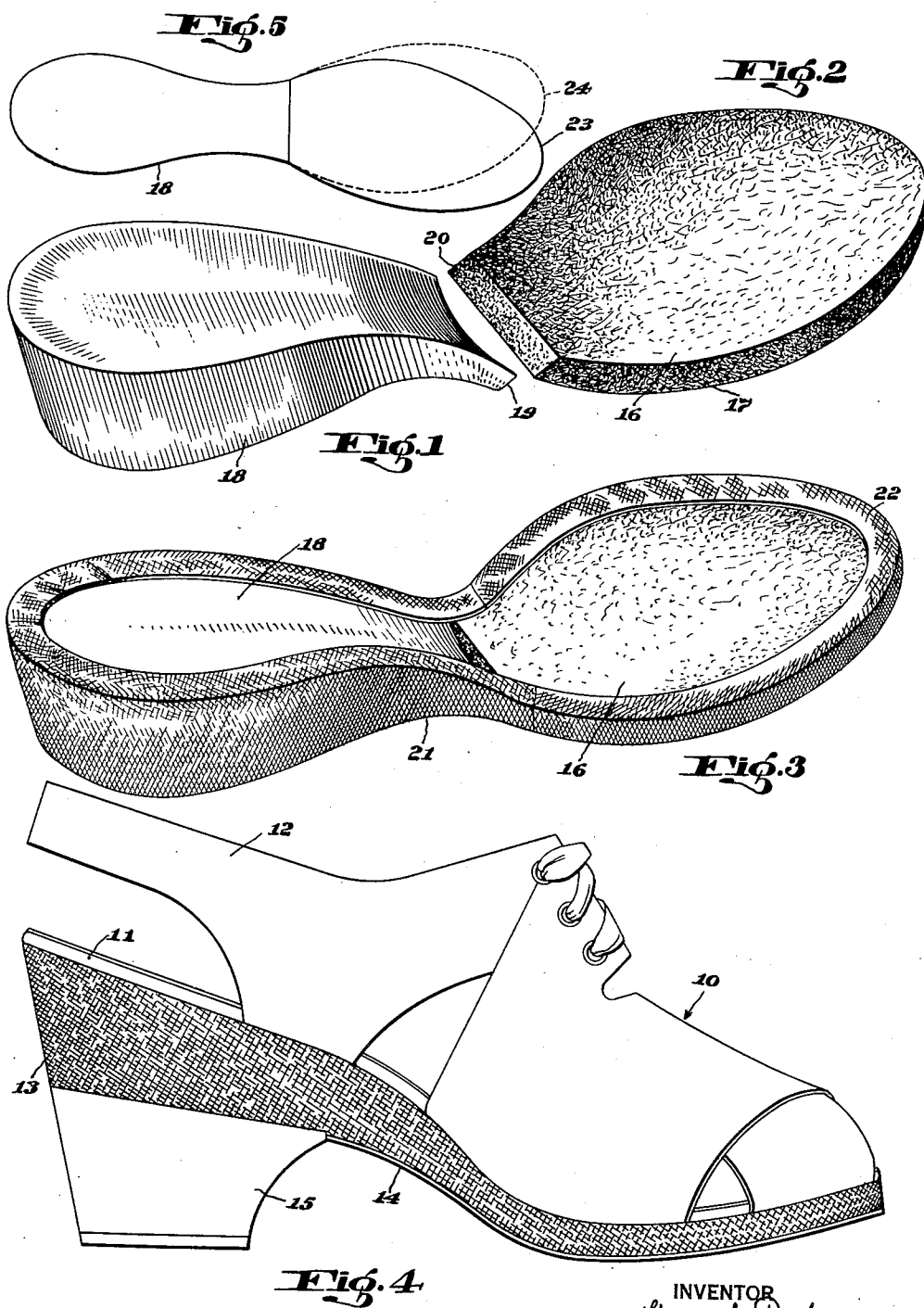
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H. J. RUDNER

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SHOE

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INVENTOR
BY *Harry J. Rudner*
Warren H. Ogden
ATTORNEY

UNITED STATES PATENT OFFICE

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SHOE

Harry J. Rudner, Little Falls, N. Y., assignor to
Melrose Slipper Co. Inc., Little Falls, N. Y., a
corporation of New York

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This invention relates to improvements in shoes and more especially to improvements in mid-soles for shoes and an improved method of making the same.

5 The use of relatively thin mid-soles of rubber, cork, or other suitable materials, in the ordinary shoe, is attended with no difficulty and the shoe structure, except for the addition of the mid-sole, may remain unchanged. However, the use of
10 mid-soles or platforms in shoes of the platform type presents many problems especially as in this type of shoe various styles which have been adopted require the use of platforms not only of greatly increased thickness in their foreparts but
15 of variable thickness in their shank and heel parts. It is, of course, highly essential that the foreparts of the platforms be as flexible as possible while a reasonable amount of stiffness or rigidity is required in the shank and heel portions not only to properly support the foot of
20 the wearer, but to enable the shoe to maintain its shape and to form a suitable seat for the attachment of a heel.

Probably the most common material used for
25 mid-soles or platforms of platform shoes is felt, although cork has also largely been used as has sponge rubber, fibre and other flexible materials. It is manifest that materials which will have a suitable amount of flexibility to permit their use
30 in the forepart of a platform cannot be depended upon to give the necessary stiffness to the shank nor will materials such as sponge rubber, felt, etc. form suitable attachment seats for wooden or other heels. As a result, it has heretofore been
35 impossible to embody in shoes of the platform type certain styles which would otherwise be desirable.

One of the more general objects of the present invention is to bring about a form of shoe, and
40 more especially a mid-sole for a shoe, wherein the thickness of the mid-sole may be varied as desired at the heel, shank and forepart without sacrifice of flexibility in the forepart or strength or rigidity in the heel and shank portions.

45 Another object of the invention is to bring about a form of mid-sole for a shoe and a method of making the same wherein the above ends may be obtained without the use of shank or other stiffening devices.

50 In a specific aspect, the invention relates to a form of mid-sole consisting of a flexible forepart joined, at the forward end of the shank, to a heel and shank portion formed of material having a reasonable amount of stiffness, and a fea-
55 ture of the invention resides in a shoe in which

is an arrangement for attaching the heel, shank and foreparts of the mid-sole together so as to form a construction which is embodied as a unit in a shoe provided with an attached heel.

A further feature of the invention resides in
5 a form of construction which lends itself to the use of fabric or other coverings for the marginal edges of the mid-sole in accordance with the novel designs of shoes now in use.

To these and other ends the invention resides
10 in the novel features and combinations of parts hereinafter described and claimed.

In the drawing:

Figures 1 and 2 are perspective views of the heel, shank and foreparts of the improved mid-
15 sole prior to assembly into a mid-sole unit;

Fig. 3 is a perspective view of a completed mid-sole according to the invention;

Fig. 4 is a side elevational view of a shoe hav-
20 ing one of the improved mid-soles embodied in the structure thereof; and

Fig. 5 is a diagrammatic view illustrating the method of forming mid-soles for right and left shoes.

Referring to the drawing in which a preferred
25 form of the invention is shown for illustrative purposes, the reference numeral 10 (Fig. 4) indicates, in general, one form of shoe in which a mid-sole having the features of the invention has been embodied and, as shown, it will be observed
30 that the shoe 10 includes an inner sole 11 over which an upper 12 has been pulled and secured, a mid-sole or platform 13 being applied to the bottom of the inner sole and over lasted portions of the upper, an outer sole 14 and heel 15 being
35 applied to the bottom of the mid-sole. In the specific shoe illustrated, it will be further noted that the mid-sole 13 is provided with a forepart of relatively great thickness and that the thick-
40 ness of the mid-sole increases markedly through the shank and heel portions thereof.

In order to avoid any compromise in the de-
45 gree of flexibility of the forepart of the mid-sole 13 and in the degree of stiffness and strength in the shank and heel portions thereof, I prefer to form these portions of the mid-sole initially as
50 separate units each being formed out of material having characteristics adapting it to the demands of the specific portion of the shoe structure in which it is to be embodied. Thus the fore-
55 part 16 (Fig. 2) may be formed out of flexible material, such as felt, having the required thickness and may be rounded so as to give its peripheral edge portions 17 the required shape, the combined shank and heel portion or unit 18 being

formed out of relatively stiff or rigid material, such as wood, the unit 18 being turned, molded or otherwise fashioned to give the required shape to the heel and shank portions of the shoe. In accordance with one of the features of the invention, to be hereinafter described, the heel and shank unit 18 terminates at its forward end in an attaching face 19 which is at right angles to the medial line of the heel and shank.

In the assembly of the mid-sole unit (Fig. 3) the transversely extending shank end 20 of the forepart 16 is brought into contact with the face 19 of the heel and shank unit 18 and the two units properly aligned are temporarily supported in a clamp or press while the binder 21 is applied to the peripheral edges of the mid-sole.

The binder 21 may be of any suitable fabric satisfying the requirements of the particular style or design of the shoe and is of a width great enough that its marginal edges may be pulled over the upper and bottom faces of the unit and cemented or otherwise attached thereto. In the drawing, the reference numeral 22 indicates that portion of the binder which has been pulled over and cemented to the upper faces of the heel and shank unit 18 and the forepart 16, but it will be understood that, although not shown herein, the lower marginal edges of the binder are similarly pulled over and cemented to the bottom faces of the mid-sole. Moreover, the binder as a whole is cemented to the peripheral edges of the mid-sole, the joint or joints between the ends of the binder being spaced from the joint between the forepart and the heel and shank part a sufficient distance such that a relatively strong joint between these parts will be formed. The mid-sole, when thus completed, is ready for assembly in a shoe.

The assembly of the mid-sole in a shoe will be readily understood by those skilled in the art and need not be described herein in detail. Suffice it to say that a leather outer sole 14 may be secured by cement or in any other convenient manner to the bottom of the mid-sole, and the heel 15 of wood covered with any suitable material may also be cemented or otherwise attached to the rearward end of the mid-sole.

The materials forming the composite parts of the mid-sole may be varied within the invention. Hair felt forms a desirable material for the forepart and the bottom of this portion of the mid-sole may be slashed, if desired, to give it added flexibility. Furthermore the forepart, when formed of hair felt, may be sprayed or soaked with rubber latex to increase its wear resistance, to make it substantially water-proof, and to give it that firmness and stability desirable in a shoe. While I prefer to form the heel and shank unit out of wood, this portion of the mid-sole may be fashioned out of cork or rubber or other materials having satisfactory characteristics.

The heel and shank portion of the mid-sole may

be used for both rights and lefts as its side edges are symmetrical with respect to the medial line thereof and, as pointed out above, the forward end is substantially at right angles to the medial line. Thus, when a mid-sole for a shoe for the left foot is to be assembled, a forepart corresponding to the full lines 23 will be attached to the shank and heel part 18 while, in the case of a mid-sole for the right foot, a forepart corresponding to the dotted lines 24 will be attached.

From the above description of the invention it will be readily understood that the heel and shank portions of the mid-sole may be varied greatly as to size and shape while still maintaining the desired degree of stiffness and strength necessary not only to give comfort to the wearer, but to enable the shoe to stand up under use, the forepart of the mid-sole, notwithstanding any variation in the heel and shank portions, remaining constantly flexible.

While I have shown and described a preferred embodiment of the invention it will be understood that the same is not limited to the precise details shown and described but is capable of modification and variation within the spirit of the invention and scope of the appended claims.

What I claim as new, is:

1. In a shoe construction having the usual inner sole and out-sole, the combination therewith of a mid-sole extending the full length of the shoe, interposed between said parts and having its forepart materially thicker than the inner sole and out-sole and tapering rearwardly from said forepart to substantially increased thickness at the rear portion of the heel, said mid-sole being composed of a shank part of rigid material and a forepart of flexible material, and joined together at an intermediate point thereof, a binder applied to the marginal edges of the mid-sole and overlapping the upper and bottom faces to hold the parts of the mid-sole together, and a shoe heel attached to the rearward end of the mid-sole.

2. In a shoe construction having the usual inner sole and out-sole, the combination therewith of a mid-sole extending the full length of the shoe, interposed between said parts and having its forepart materially thicker than the inner sole and out-sole and tapering rearwardly from said forepart to substantially increased thickness at the rear portion of the heel, said mid-sole being composed of a shank part of rigid material and a forepart of flexible material, and joined together at an intermediate point thereof, said mid-sole being longitudinally arched at the shank of the shoe at the bottom surface thereof, a binder applied to the marginal edges of the mid-sole and overlapping the upper and bottom faces to hold the parts of the mid-sole together, and an additional thickness of material below the heel portion of the mid-sole forming a heel.

HARRY J. RUDNER.