July 29, 1958 J. MELTZER 2,844,891

SHOE PROVIDED WITH RESILIENTLY YIELDABLE ELEMENT

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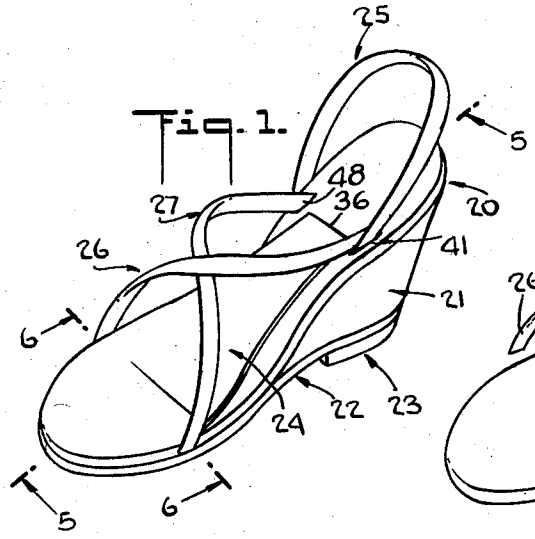


Fig. 1.

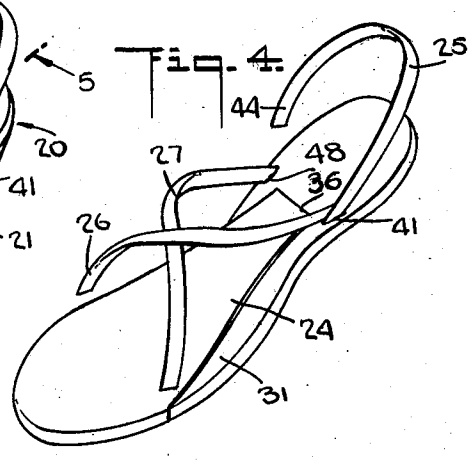


Fig. 4.

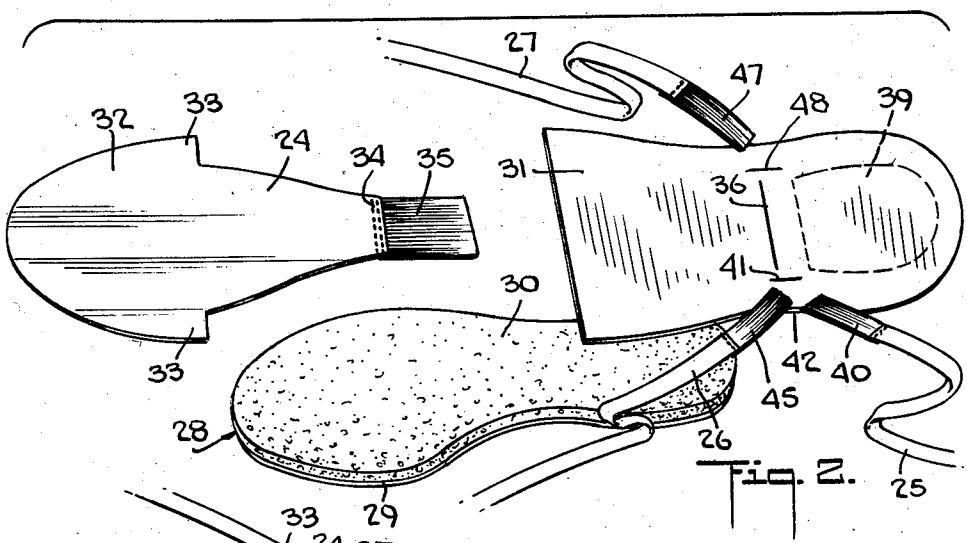


Fig. 2.

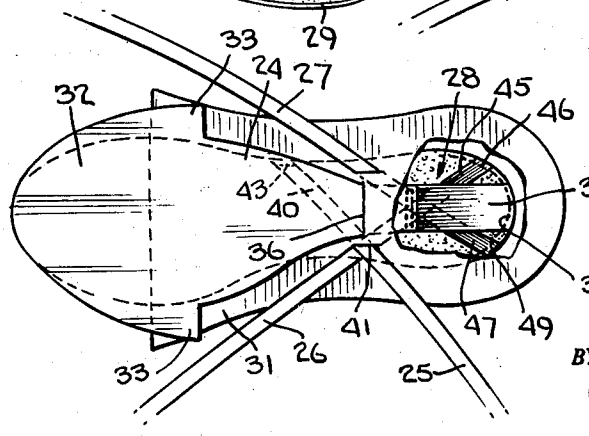


Fig. 3.

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Fig. 5.

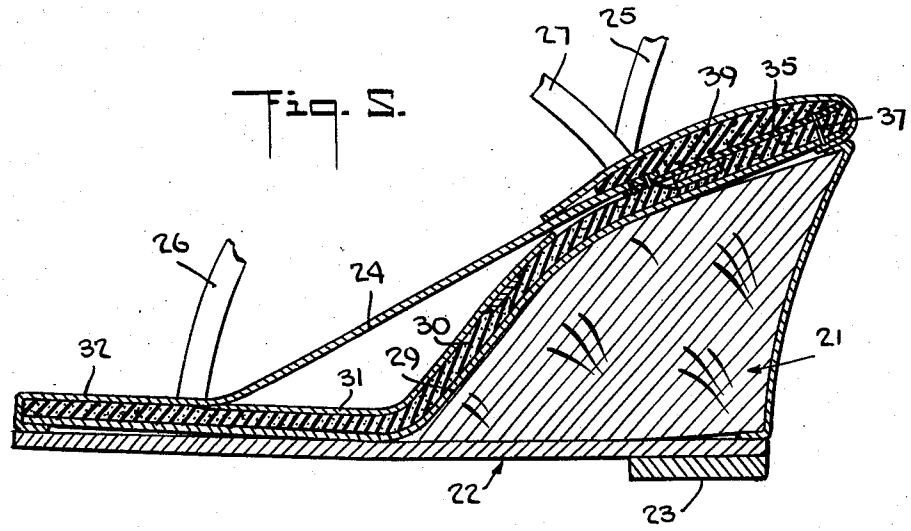
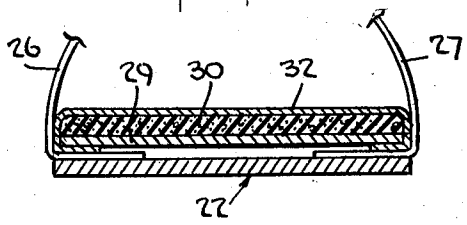


Fig. 6.



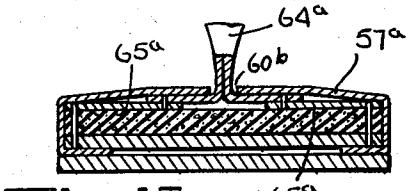


Fig. 12.

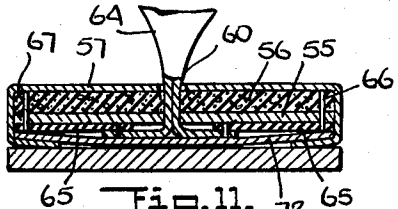


Fig. 11.

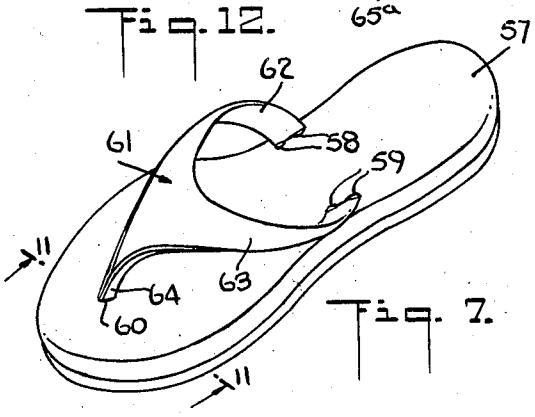


Fig. 7.

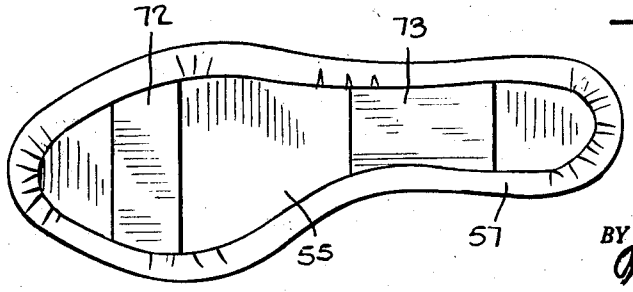


Fig. 10.

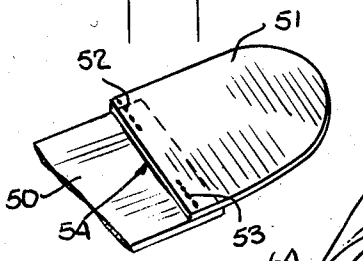
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SHOE PROVIDED WITH RESILIENTLY YIELDABLE ELEMENT

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Fig. 13.



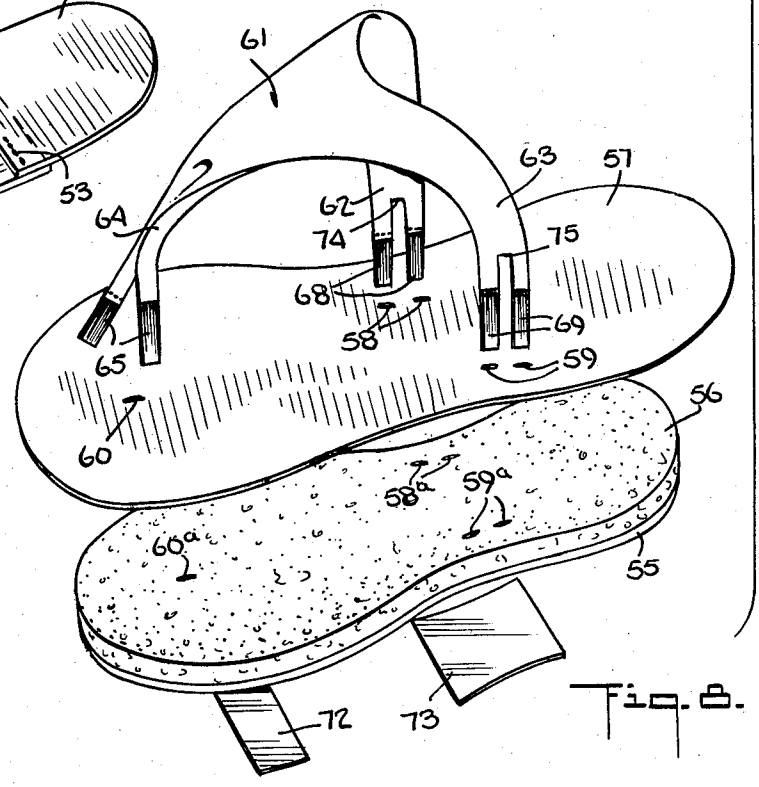
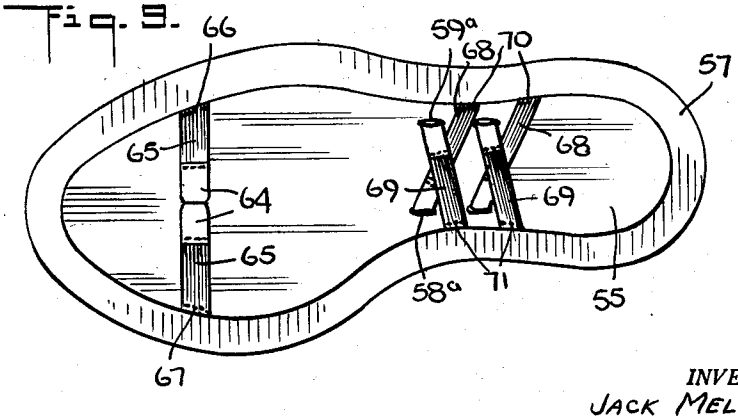


Fig. 8.

Fig. 9.



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Fig. 16.

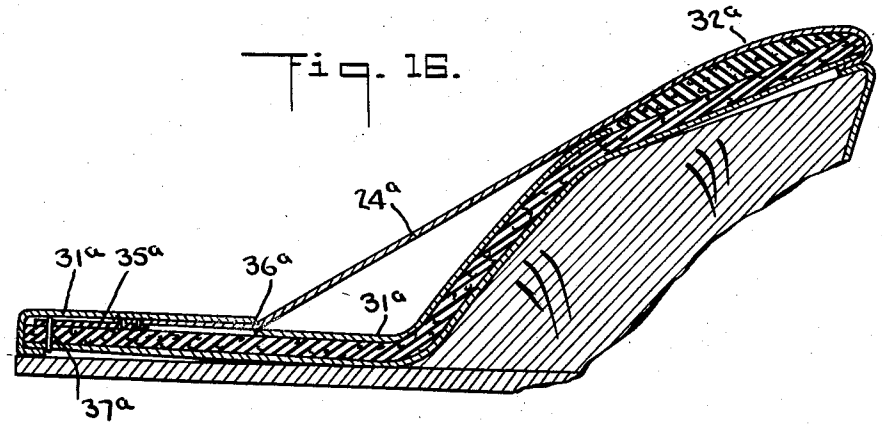


Fig. 15.

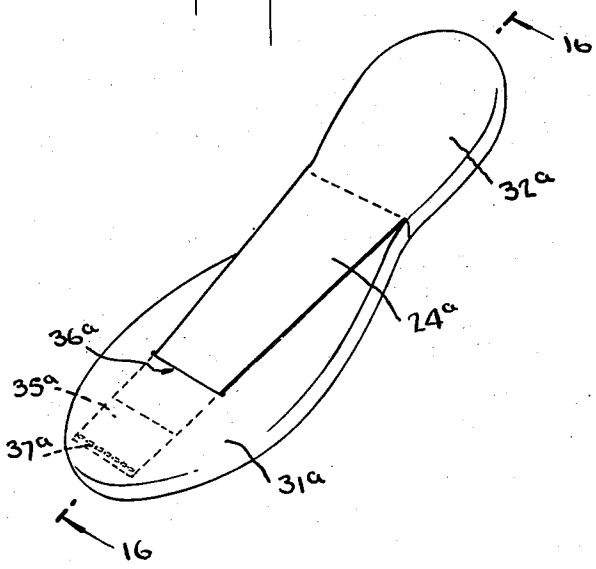
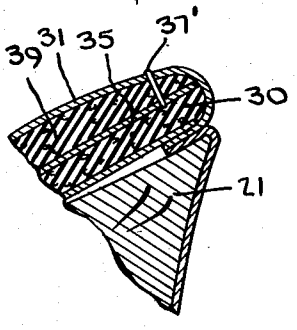


Fig. 14.



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SHOE PROVIDED WITH RESILIENTLY YIELDABLE ELEMENT

Jack Meltzer, Hollywood, Calif.

Application August 2, 1955, Serial No. 526,001

11 Claims. (Cl. 36—58.5)

The present invention relates generally to shoes, and has particular reference to the type of shoe in which the sole structure includes a sock lining, and in which there is at least one shoe element above the sock lining adapted to yield resiliently when the shoe is worn.

One type of yieldable shoe element is exemplified by the elastic bridging piece that is sometimes used in the shank region to lie beneath the foot of the wearer and to exert a continuous resilient upward pressure upon the foot. Other shoe elements of the resiliently yieldable type are straps adapted to extend around the foot when the shoe is worn, or thongs that extend upwardly from the forward part of the sole structure in certain types of shoes and lie between the toes of the foot. It is a general object of the invention to improve the appearance, wearing quality, and comfort of an article of footwear in which such yieldable elements are employed, either singly or in combinations.

A more specific object of the invention is to provide the desired yieldability by elastic means that are firmly anchored to the sole structure, yet do not impair the softness and attractive appearance of the exposed part of the sole structure. The invention is for this reason particularly useful in shoes of the presently fashionable kind in which a covered insole body is completely exposed except for relatively thin stripping or the like adapted to extend around the foot and constituting a skeleton type upper. It is this general type of footwear in connection with which the provision of resiliently yieldable shoe elements, such as bridging pieces and thongs and foot-enveloping straps are especially desirable.

The basic features of the new construction are applicable to a wide variety of shoe styles, and the embodiments of the invention herein chosen for illustration are merely examples. As will be pointed out, the construction can be employed in shoes manufactured in accordance with the well-known "slip-lasting" process, if desired.

These general objectives and advantages can be achieved in the manner illustratively exemplified in the drawings, in which—

Fig. 1 is a perspective view of a shoe embodying the features of this invention;

Fig. 2 is an exploded view of some of the parts entering into the construction of Fig. 1;

Fig. 3 is a plan view of the parts of Fig. 2 shown in partially completed assembly, one region of Fig. 3 being broken away to reveal the parts that lie beneath;

Fig. 4 is a perspective view of the parts shown in Figs. 2 and 3, at a further stage of completion;

Fig. 5 is an enlarged cross-sectional view substantially on the line 5—5 of Fig. 1;

Fig. 6 is a cross-sectional view on the line 6—6 of Fig. 1;

Fig. 7 is a perspective view of some of the elements entering into a modified construction, shown in partially complete relationship;

Fig. 8 is an exploded view of the parts entering into the assembly of Fig. 7;

Fig. 9 is a bottom plan view of the assembly of Fig. 7, with the shields omitted;

Fig. 10 is a view similar to Fig. 9 with the shields in position;

Fig. 11 is an enlarged cross section along the line 11—11 of Fig. 7;

Fig. 12 is a view similar to Fig. 11 illustrating a modification;

Fig. 13 is a fragmentary perspective illustrating a slight modification in the construction shown in Fig. 2;

Fig. 14 is a fragmentary view similar to the right-hand end of Fig. 5, illustrating a modification;

Fig. 15 is a view similar to Fig. 4 illustrating a modification; and

Fig. 16 is a cross-sectional view similar to Fig. 5, taken substantially along the line 16—16 of Fig. 15 and showing the assembly of Fig. 15 as part of a complete shoe.

In the shoe I have chosen for illustration in Fig. 1 the sole structure consists of the inner sole **20**, a "wedgie" type heel **21**, and an outer sole **22** (which may or may not be provided with the additional underlying outer heel **23**). The structure includes a bridging piece **24** normally elevated above the level of the sock lining beneath it, and constantly exerting an upward pressure on the foot of the wearer. The upper of the shoe illustrated consists of the so-called "sling quarter" or heel-engaging strap element **25**, and a pair of straps **26** and **27** adapted to extend around the foot of the wearer.

The inner sole **20** consists essentially of an insole body and a sock lining that envelops it. The insole body **28** (Fig. 2) may consist of two or more layers of selected material, and I have chosen to show a bottom layer **29** of relatively thin but stiff material such as leather, fiber composition, or the like, and a relatively thick but resiliently soft upper layer **30** composed, for example, of foam rubber or the like. The insole body may include also a resiliently soft heel padding element **39** which is best shown in Fig. 5.

The covering for this insole element consists of a sock lining part **31** adapted to overlie and extend around the central and rear part of the insole body **28**, and a forward piece **32**. The latter is of a size and shape to extend around the forward end of the insole body **28**, and at the stepped regions **33** the piece **32** narrows and the rear part tapers as shown. This narrower tapered part of the element **32** constitutes the bridging piece **24** which, in the finished shoe, lies above and normally spaced from the sock lining **31**. The rear end of the bridging piece **24** is stitched as at **34** to an elastic or stretchable member **35**. The sock lining **31** is provided with a transverse aperture **36** having a length just sufficient to permit the rear end of the bridging piece **24** to pass through it (see Fig. 3). The rear end of the stretchable member **35** is anchored to the sole structure either by stitching it as shown at **37** to the insole body **28**, or by stitching it as shown at **37'** (Fig. 14) to the rear region of the sock lining **31**.

It is to be observed that the stretchable element **35** lies in its entirety beneath the sock lining **31**. This is a feature of the invention because the exposed surface of the inner sole assembly is thus completely unmarred by the presence of extraneous unattractive material such as elastic ribbing or the like. Also the freedom of movement of the rear end of the bridging element **24** through the aperture **36** is reliable and sure.

Under certain circumstances it might be desirable to reverse the arrangement of parts **31** and **32**. This is shown in Figs. 15 and 16. A sock lining piece **31*a*** is shaped to fit around the forward end of the insole body,

and is provided with a transverse aperture 36*a*. The bridging piece 24*a* is a forwardly extending integral part of the rear sock lining element 32*a* and is thus firmly anchored at the rear of the shoe. The forward end of the bridging piece passes downwardly through the aperture 36*a* and is secured to an elastic 35*a* lying underneath the part 31*a* and anchored by stitching 37*a*. This arrangement has the advantage that the aperture may be concealed from view by the vamp portion of the upper, also the action of the bridging piece would have a massaging effect upon the toes of the wearer. In Figs. 15 and 16 the upper or vamp, including straps or the like intended to engage around the foot of the wearer, have been omitted for the sake of simplicity of illustration.

The strap 25 is provided at one end with a stretchable member 40, and this elastic also lies in its entirety beneath the sock lining. With this objective in view the sock lining is provided, in addition to the transverse aperture 36, with the longitudinal relatively short aperture 41 adjacent to the side edge 42 of the sock lining. The extreme end of the stretchable member 40 is stitched at 43 (Fig. 3) to the opposite side edge of the sole structure, and the strap 25 extends upwardly through the aperture 41, loops around to define the desired heel-engaging "sling" and the opposite end 44 of this strap is anchored in any suitable or desired manner beneath the inner sole 20, preferably being adhesively anchored between the inner sole 20 and the underlying heel piece 21. Obviously, if desired, the end 44 of the strap 25 may be provided with elastic means similar to that shown at 40, and similarly anchored in position, but in most cases it is sufficient to have one end only of the strap 25 yieldably anchored.

The aperture 41 may be employed also to permit passage through it of one end of the strap 26, this end being stitched to a stretchable member 45 which lies in its entirety beneath the sock lining 31 and is secured to the insole body by stitching, as shown at 46 (Fig. 3).

A similar construction is employed to anchor the strap 27, one end of which is stitched to a stretchable member 47 that lies in its entirety beneath the sock lining 31. The strap 27 extends up through the sock lining through a longitudinal aperture 48 similar to the aperture 41 but adjacent to the opposite side edge of the sock lining. The elastic member 47 is stitched to the insole body at its end as indicated at 49 in Fig. 3.

The opposite or forward ends of the straps 26 and 27 may be anchored in position without benefit of elasticity, in any desired manner, and I have found it suitable to secure these ends adhesively in sandwiched relationship between the inner sole 20 and the outer sole 22.

The finished shoe is attractive in appearance and extremely comfortable and wearable, notwithstanding its skeleton-like upper No ugly elastics are apparent. The top surface of the inner sole at its rear end is free of encumbrances, soft and comfortable. The strap 25 will cling to the heel of the foot of the wearer, more comfortably and more efficiently than any buckle or buckling arrangement could achieve. Similarly, the shoe is held to the forward part of the foot by the yieldably elastic straps 26, 27, coupled with the gentle upward pressure of the bridging piece 24.

As heretofore mentioned in connection with the elastic 35, the elastics 40, 45 and 47 may be anchored to the sock lining itself, as distinguished from the underlying insole body, but the construction illustrated is preferable in most cases. The anchorage to the sock lining itself may be expeditious where the shoe is constructed in accordance with "slip-lasting" procedures.

In Fig. 13 I have illustrated a construction in which the transverse aperture in the rear region of the sock lining (corresponding to the aperture 36 in Fig. 2) is formed by constructing the sock lining of two overlapping areas 50 and 51. By stitching the overlapping parts only partially, as indicated by the stitches at the sides 52 and 53, the unattached region between, designated 54, constitutes an aperture through which the rear end of the bridging element may extend.

Under certain circumstances the yieldably resilient element can be advantageously extended downwardly not only through an aperture in the sock lining but through a registering aperture in the underlying insole body, the elastic means being disposed entirely in the region beneath the insole body. Such a construction is illustrated in Figs. 7–11, these illustrations showing also some additional features of the invention.

The insole body may consist, as before, of a lower layer 55 and an upper soft layer 56 (Fig. 8). Overlying this insole body and enveloping it around its periphery is a sock lining 57 which, in this case, extends for the full length of the shoe in the form of a single piece of material. Near the heel region the sock lining is provided with a pair of spaced but aligned apertures 58 adjacent to one side edge of the sole structure, and with a similar pair of apertures 59 adjacent to the opposite side edge. In the medial part of the forward region a single longitudinal aperture is provided. In the insole body itself there are registering apertures 60*a*, 58*a*, and 59*a*.

The upper structure in this case consists of a single element 61 shaped to define downwardly extending straps 62 and 63 in the rear region, and a single downwardly extending thong 64 in the forward region. In each case, the strap ends are bifurcated, and each fork is secured to a length of stretchable elastic. The stretchable members 65, secured to the thong 64 are passed downwardly through the registering apertures 60 and 60*a* and then extend laterally in opposite directions as best indicated in Fig. 9. One of the stretchable members 65 is secured by stitching 66 to the insole body adjacent to one side edge thereof, and the other elastic 65 is similarly secured as at 67 to the opposite side edge.

Similarly the strap 62 is provided with stretchable members 68, and the strap 63 with elastic members 69. After being passed downwardly through the registering apertures 58 and 58*a*, the elastics are anchored as at 70 to one side edge of the sole structure (see Fig. 9), and in a similar fashion the stretchable members 69 are anchored to the opposite side edge as shown at 71.

In this construction, shielding strips 72 and 73 are laid over the elastics in the forward and rear regions of the assembly prior to the completion of the enveloping procedure. That is, the marginal parts of the sock lining 57 are not drawn around and adhesively secured in position, as shown in Fig. 10, until after the shielding pieces 72 and 73 have been laid in position. This prevents adhesive from interfering with the smooth stretching movements of the members 65, 68 and 69. Obviously, if desired, the shields 72 and 73 may be merged in the form of a single shielding piece extending for the full length, or almost the full length, of the sole structure. Or, if desired, the shields may be omitted, but in that case special care must be taken during the application of the outer sole, to prevent adhesive from impairing the smooth functioning of the elastics.

The bifurcation of the thong 64 avoids any one-sided downward pull upon the thong, and strengthens the anchorage. The bifurcation of each of the straps 62 and 63 fulfils a different purpose, in that the apertures in this region may be made shorter, and also the downward movements of the straps 62, 63 is limited in extent, being halted when the regions 74 and 75 encounter the upper surface of the sock lining 57.

In Fig. 12 I have shown the possibility of modifying the construction by anchoring the elastics 65 (designated 65*a* in Fig. 12) to the sole body without extending the thong entirely through the sole body. In this case, the thong extends downwardly only through an aperture 60*b* in the sock lining 57*a*, and the thong ends and the elastics 65 are disposed in the space between the insole body and

the sock lining. Under certain circumstances this modified construction may be desirable.

It will be understood that some of the features described and illustrated in connection with Figs. 1–6 may be incorporated in a shoe of the kind indicated in Figs. 7–11, and vice versa. Many variations in style and design are obviously possible, while still employing some or all of the basic features of the invention. In general it will be understood that many of the details herein described and illustrated may be modified by those skilled in the art without necessarily departing from the spirit and scope of the invention as expressed in the appended claims.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a shoe, a sole structure including a sock lining, the rear part of the sock lining having an aperture therein extending along a transverse line just forward of the heel region, a bridging element having its front end anchored to the forward region of the sole structure and a rear end extending downwardly through said aperture to a concealed position beneath said socket lining, and a stretchable elastic connecting said rear end of the bridging element to the rear edge portion of the sole structure.

2. In a shoe including a sock lining and an underlying sole body, said sock lining having margins enveloping the edges of said sole body and being anchored thereto, said sock lining having a transverse aperture therein, a bridging element adapted to underlie the foot of the wearer and having a concealed part extending rearwardly down through said aperture into the space between the sole body and the overlying sock lining, the bridging element having a medial region overlying and disconnected from said sock lining and a forward region anchored to said sole body, and an elastic connector between said concealed part of the bridging element and the rear end edge region of the sole body, said connector being secured to said sole body by stitching extending therethrough.

3. In a shoe, the structure defined in claim 2, in which the medial region of the bridging element is narrower than the sole body and the forward region is wider and is anchored by having its margins extend around and envelope the edges of the sole body.

4. In a shoe, a sole structure including a sock lining with a transverse aperture therein, a bridging piece having one end anchored to the sole structure at one end of the shoe and its opposite end extending downwardly through said aperture, and a stretchable elastic connecting said last-mentioned end of the bridging piece to the sole structure, said elastic lying in its entirety beneath said sock lining, the medial part of said bridging piece being narrower than said sole structure and free of connection thereto except at the front and rear.

5. In a shoe, the combination of parts defined in claim 4, said aperture terminating short of the side edges of the sock lining, said sock lining comprising one piece of material lying rearward of said aperture and another piece of material lying forwardly thereof, said pieces being only partially secured to each other so that the unattached parts define said aperture between them.

6. In a shoe, a sole structure including a sole body and a sock lining overlying said sole body, the margins of the sock lining extending around and enveloping the edges of the sole body in the medial and rear regions of the shoe, said sock lining having a transverse aperture along a line just forward of the heel region thereof, a bridging piece having a forward end anchored to the sole body at the front end of the shoe, said forward end of the bridging piece having margins extending around and enveloping the edges of the sole body in the forward region of the shoe, said bridging piece having a medial part narrower than the sole structure and free of connection thereto except at the front and rear, said bridging piece having a rear end extending downwardly through said aperture, and a stretchable elastic lying in its entirety beneath the heel region of the sock lining and connecting the rear end of the bridging piece to the rear end edge of the sole body.

7. In a shoe, a sole structure including an insole body and a sock lining overlying it and having a marginal part extending around and enclosing the edges of the insole body, said sock lining having an aperture therein, a shoe element above the sock lining and having an end extending downwardly through said aperture, and an elastic stretchable element sandwiched in its entirety between said sock lining and insole body and connecting said end to an edge portion of the sole structure relatively remote from said aperture, said shoe element being a bridging piece adapted to underlie the foot of the wearer.

8. In a shoe, a sole structure comprising an insole body, a sock lining overlying said body and extending from one end thereof to a point short of the other end thereof, said sock lining having a marginal part extending around and enclosing the edge of the body, said sock lining also having a transverse aperture therein, another insole-covering piece overlying the other end of said body and having a marginal part extending around and enclosing the edge of the body, said covering piece including a bridging part in the medial region of the shoe overlying the sock lining and free of attachment thereto, said part having its end extending downwardly through said aperture, and elastic means lying in its entirety beneath said sock lining and connecting said end to the end edge portion of the sole structure.

9. In a shoe, the sole structure defined in claim 8, said sock lining overlying the rear end of said insole body and said covering piece overlying the forward end thereof.

10. In a shoe, a sole structure including a sock lining, said sock lining having an aperture therein, a shoe element above the sock lining and having an end extending downwardly through said aperture to a position beneath said sock lining, and elastic means entirely beneath said sock lining and connecting said end to a relatively remote portion of the sole structure whereby said shoe element is adapted to yield resiliently when the shoe is worn, said sole structure including an inner sole and an outer sole, said shoe element being a bridging piece adapted to underlie the foot of the wearer, said bridging piece extending forwardly from said aperture and including a medial region free of attachment to the sole structure and a forward region whose margin envelopes the edge of the inner sole and extends into anchored disposition between the inner and the outer sole.

11. In a shoe including a sock lining and an underlying sole body, said sock lining having margins enveloping the edges of said sole body and being anchored thereto, said sock lining having a transverse aperture therein, a bridging element adapted to underlie the foot of the wearer and having a concealed part extending rearwardly down through said aperture into the space between the sole body and the overlying sock lining, the bridging element having a medial region overlying and disconnected from said sock lining and a forward region anchored to said sole body, and an elastic connector between said concealed part of the bridging element and the rear end edge region of the sock lining, said connector being secured to said sock lining by stitching extending therethrough.

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