April 8, 1969 M. SACHS 3,436,845

FOOTWEAR

Filed Aug. 12, 1968

Fig. 1.

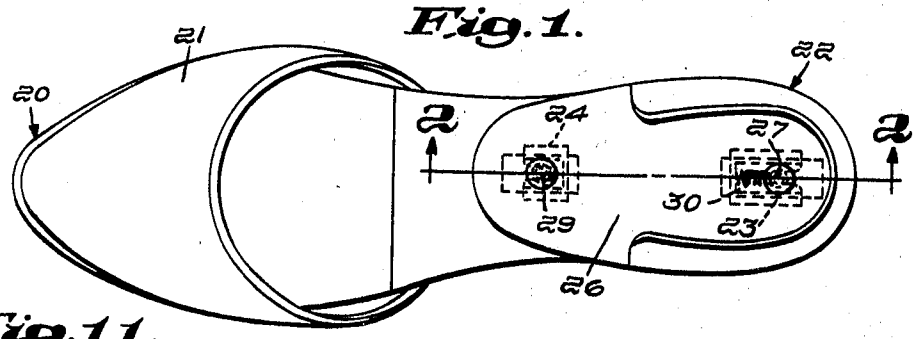


Fig. 11.

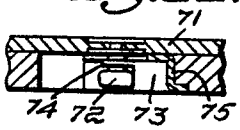


Fig. 2.

Fig. 5.

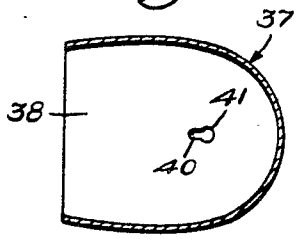


Fig. 9.

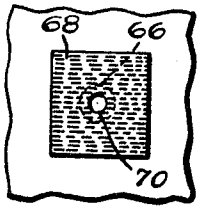


Fig. 3.

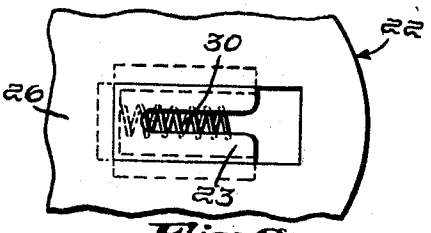


Fig. 10.

Fig. 8.

Fig. 6.

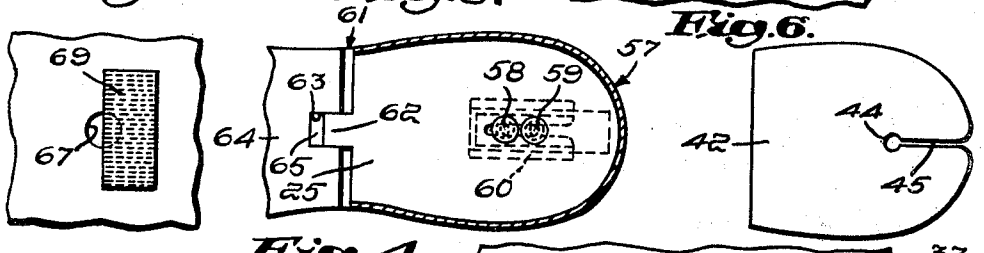


Fig. 4.

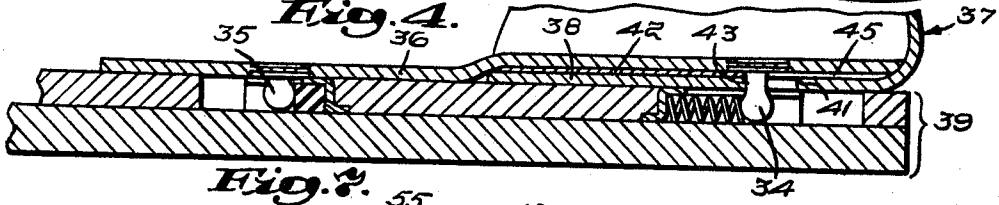
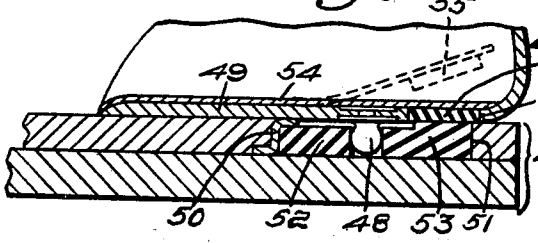


Fig. 7.



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FOOTWEAR

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Continuation-in-part of application Ser. No. 618,683, Feb. 27, 1967. This application Aug. 12, 1968, Ser. No. 758,178

Int. Cl. A43b *9/00, 23/28;* A43c *13/00*

U.S. Cl. 36—2.5

24 Claims

ABSTRACT OF THE DISCLOSURE

A footwear upper section detachably attached to a socket depressed in the sole, a resilient section in the socket, a sole-attached tongue-in-groove construction for opposing sideways turning of the upper section, an intermediate layer for snugging the attachment.

My invention pertains to footwear and to parts thereof, including sole and upper sections, and means for imparting variability so as to afford improvements in fit and appearance as well as to provide convenience and adaptability in use. The present application is a continuation-in-part of my co-pending application Ser. No. 618,683, filed Feb. 27, 1967, now abandoned. Application No. 618,683, filed Feb. 27, 1967, was based on the following earlier applications: Ser. No. 601,216, filed Dec. 12, 1966, Ser. No. 601,217, filed Dec. 12, 1966, and Ser. No. 600,872, filed Dec. 12, 1966. Ser. No. 601,216, filed Dec. 12, 1966, was based on the following earlier applications: Ser. No. 562,051, filed June 13, 1966; Ser. No. 417,686, filed Dec. 11, 1964; Ser. No. 414,159, filed Nov. 27, 1964; Ser. No. 284,288, filed May 24, 1963; Ser. No. 37,907, filed June 22, 1960; Ser. No. 755,156, filed Aug. 15, 1958; and Ser. No. 679,887, filed Aug. 23, 1957. Ser. No. 601,217, filed Dec. 12, 1966, was based on the following earlier applications: Ser. No. 562,056, filed June 13, 1966; Ser. No. 399,269, filed Sept. 25, 1964; Ser. No. 306,416, filed Aug. 30, 1963; and Ser. No. 129,891, filed Aug. 7, 1961.

In accordance with the invention, the general objectives are attained by providing an article of footwear in which upper sections are detachably attached to sole sections and means are employed to maintain said upper sections in desired attached positions and to release them from said positions as desired. Slidable attachments, resilient sections, and movable sections as well as other features are employed.

The features of my invention apply to footwear of every type.

In the drawings:

FIG. 1 is a top plan view of a show in accordance with the invention,

FIG. 2 is an enlarged side section along the lines 2—2 of FIG. 1,

FIG. 3 is an enlarged fragmentary top plan view of a rear part of the sole of FIGS. 1 and 2 showing the socket and spring,

FIG. 4 is an enlarged side section of a rear part of a shoe in accordance with the invention,

FIG. 5 is a top plan view of the heel upper section in FIG. 4,

FIG. 6 is a top plan view of the intermediate layer in FIG. 4,

FIG. 7 is an enlarged side section of a rear part of a shoe in accordance with the invention,

FIG. 8 is a top plan view of the rear part of a shoe in accordance with the invention,

FIG. 9 is a fragmentary top plan view of the area around the hole in the bottom layer of a heel upper section such as that of FIGS. 4 and 5, in accordance with the invention,

FIG. 10 is a fragmentary top plan view of the area around the hole in the bottom layer of a heel upper section such as that of FIGS. 4 and 5, in accordance with the invention,

FIG. 11 is a sectional side view of a sole layer with an attaching part having a spacer detachably attached thereto in accordance with the invention.

FIG. 1 illustrates a shoe in accordance with the invention; FIG. 2 is a section along the line 2—2 of FIG. 1; and FIG. 3 is a fragmentary top plan view of the rear part of the sole with socket of FIGS. 1 and 2. The shoe consists of a generally indicated sole **20** to which a vamp **21** is attached and a generally indicated heel upper section **22** is detachably attached. The rear socket **23** depressed in the sole **20** is shown to open rearwardly and the forward socket **24** is shown to open forwardly. The heel upper material is attached to section **26** which rests on the sole **20**. Stud **27** in the heel area of the section **26** and stud **29** in the shank area of the section **26** connect section **26** to sockets **23** and **24** respectively. The openings in opposite directions together with the compression spring **30** in the socket **23** provide means for attaching and detaching conveniently and maintaining the attachment, the stud **27** first entering socket **23** and compressing spring **30** to enable stud **29** to enter socket **24** whose closed rear end **31** will then prevent stud **27** from sliding out of socket **23**. Spacer block **32** in socket **24** is removable to permit heel section **22** to be positioned more rearwardly.

FIG. 4 is an enlarged side section similar to that of FIG. 2, but with rear stud **34** and forward stud **35** connected to a layer **36** which is detachable from the heel upper section generally indicated at **37** with its attached bottom layer **38** resting on the sole generally indicated at **39**.

FIG. 5 is a top plan view of the bottom layer **38** of FIG. 4 with a hole **40** having a larger rear part **41** for insertion of the lower section of the attaching part **34**, the smaller forward part being designed so that the side borders will be closer to the narrow neck of the attaching part **34** when the heel upper section **37** is in a rearward position.

FIG. 6 is a top plan view of the slidable layer **42** of FIG. 4 positioned between the bottom layer **38** and the attaching layer **36** in the heel area for snugging the connection of the heel upper section **37** to the hole **39**. The neck **43** of the stud **34** is shown in FIG. 4 extending through the rear end **44** of the narrow slot generally indicated at **45**, and through the aperture **40** of the bottom layer **38**, the aperture **40** being so designated in FIG. 5.

FIG. 7 is an enlarged side section of the rear part of a sole generally indicated at **46** with a heel upper section **47** detachably attached thereto. The attaching part **48** is shown to connect the bottom layer **49** of the heel upper section **47** to the socket **50**. Resilient spacer block **52**, in the socket **50** between stud **48** and the closed front end of the socket **50**, is removable to enable the heel upper section **47** to be positioned more forwardly. The spacer can comprise two or more sections which may be individually removable for variability in positioning heel upper section **47**. They may be non-resilient; but when the block is long, it should preferably be flexible to facilitate positioning in the socket. Similarly as to spacer block **53** which may be one thickness throughout or may be dimensioned to fill the entire rear of the hole **51** in the heel section **46** as shown. A cover layer **54** is shown to have its rear portion liftable and to have attached thereto a filler portion **55** for filling in the hole **56** in the bottom layer **49** of the heel upper section **47**. The spacer block **53** is inserted into the hole **51** in the sole section **46** through the

hole 56 after the heel upper section is attached to the sole, whereas the spacer block 52 is preferably inserted into the socket before the upper heel section is attached.

FIG. 8 shows a top plan view of a heel upper section 57 attached by two studs 58 and 59 to a socket 60 depressed in the sole section generally indicated at 61. The two studs can be used to oppose sideways turning of the heel upper section. The front end of the bottom layer 25 of the heel upper section 57 is shown to have a tongue 62 projecting forwardly into a channel or groove 63 in the top layer 64 of the sole 61. A removable spacer block 65 keeps the heel upper section positioned rearwardly of the position it would have if the spacer block were removed. The tongue-in-groove arrangement can be used to oppose sideways turning of the heel upper section.

FIGS. 9 and 10 show enlarged sectional top plan views of holes 66 and 67 respectively with elastic sections 68 and 69 respectively. The elastic section 68 has a hole 70 which is smaller than the inelastic hole 66, while the elastic section 69 covers part of the hole 67. These combinations are alternatives for the keyhole shape of hole of FIG. 5, and serve similarly to facilitate the passage of the larger lower portion of an attaching part through the hole and still have material close to opposite sides of the narrow neck when attached. The resilient material can have vertical resiliency as well as horizontal elasticity, assisting in providing snugness of the attachment as well as horizontal positional resiliency for the heel upper section. The elastic section 69 of FIG. 10 can be positioned to cover other areas of the hole 67, as, for instance, the forward part. The resilient material can be attached to either the top or bottom of the heel upper section bottom layer.

FIG. 11 shows an enlarged sectional side view of a sole layer 71 with a stud 72 attached thereto and a spacer block 73 detachably attached to the neck of the stud 72 by an elastic loop 74. This is a conventient way for inserting a spacer block in a socket between the side of the lower portion of the attaching part 72 and the closed end of the socket 75. The part attaching the spacer to the stud could also be a flat elastic material with a hole in it similar to the elastic section 68 of FIG. 9. The lower section of the stud is shown to have a rectangular shape. This serves to prevent sideways turning of the stud in the socket, and consequently serves to oppose sideways turning of the heel upper section to which the stud is attached, when the sidewall of the socket is close to the flat side area.

Spacers can be used with or without a spring or other resilient material in the same socket, and can themselves be resilient or non-resilient depending upon the effect desired. The springs and spacers can be used in others of the sockets than those in which they are shown. For instance, in a construction such as that of FIG. 2, if a spacer or similarly positioned spring in the forward socket were sufficiently resilient to permit the heel section to be removed from the rear socket, a removable block such as the block 53 of FIG. 7 could be used in the rear socket, with or without a spring, to prevent the stud from slipping out of the hole.

In this connection, when the innersole material itself closes the rear end of the hole in the innersole, it provides a rear stop that is structurally simple and preserves the normal appearance of the sole from the rear. As for the compression spring in a lengthwise channel, it can provide a tautening effect regardless of the nature of the second attachment, offsetting any loosening resulting from stretching of the connecting material as a result of wear.

Other details may be similarly recombined or may be varied. For instance, features of FIGS. 8 and 11 could be used in conjunction with FIG. 7 to prevent sideways turning of the heel upper section. Also, while spacers can be used between an attaching part and any part of the closed rear end of a socket or slot, it is preferable to contain them entirely within the socket itself. As for the compression springs, these can be blocks of resilient material, or they can be of any equivalent composition or construction.

From the foregoing it will be seen that footwear in accordance with the invention will be improved in variability, functioning, comfort, and adaptability as well as other features.

I claim:

1. An article of footwear including a sole with a section of upper attached thereto forwardly of the heel area, a socket depressed in said sole in said heel area, said socket having a rearward entrance and a forward closed end, a heel section including a section of upper and a section of material attached to said upper and resting on said sole in said heel area, said section of material having a part detachably attached to said heel area socket, said section of material extending forwardly and being detachably attached to said sole forwardly of said heel area socket, and a horizontally compressible resilient section positioned in said heel area socket between said attaching part and said closed forward end of said heel area socket.

2. The article of claim 1 in which said forward detachable attachment includes a socket depressed in said sole and having a closed rear end and a forward entrance.

3. The article of claim 2 with a removable section of material in said forward socket between the rear end of said socket and the detachable attaching part.

4. An article of footwear including a sole with a section of upper attached thereto forwardly of the heel area, a socket depressed in an aperture in said sole in said heel area, said socket having a rearward entrance and a forward closed end in said heel area, said aperture having a closed rear end and an opening in the top of said sole in sai heel area, a heel section incluing a section of upper and a section of material attached to said upper and resting on said sole in said heel area, said section of material having a part detachably attached to said socket, the entrance to said socket being through said opening of said aperture; in the top of said sole in said heel area, a part connected with said innersole and opposing the removal of said attaching part said socket, said part being removable from its opposing position, said part which is detachably attached to said socket being detachable from said socket independently of the attachment to the sole said section of upper which is attached to said sole forwardly of said heel area.

5. The article of claim 4 in which said opposing part comprises a removable section in said aperture between said attaching part and said closed rear end of said aperture.

6. The article of claim 4 and a removable section of material in said socket between said attaching part and said closed forward end of said socket.

7. The article of claim 4 and a part connected to said sole and opposing sideways turning of said heel section.

8. The article of claim 5 and an opening in said section of material attached to said upper and resting on said sole in said heel section, said opening being designed to accommodate the passage of said removable section.

9. An article of footwear including a sole with a section of upper attached thereto forwardly of the heel area, a socket depressed in said sole in said heel area, said socket having a rearward entrance and a forward closed end, a heel section including a section of upper and a section of material attached to said upper and resting on said sole in said heel area, an aperture in said section of material in said heel area, an attaching layer of material detachably attached to said sole forwardly of said heel area socket and extending rearwardly over said aperture, an attaching part attached to said attaching layer in said heel area, said attaching part passing downward through said aperture in said section of material and being detachably attached to said rear socket, and a horizontally compressible resilient section in said rear socket between said closed forward end of said rear socket and said attaching part.

10. The article of claim 9 in which said forward detachable attachment of said attaching layer includes a socket depressed in said sole and having a closed rear end and a forward entrance.

11. An article of footwear including a sole with a section of upper attached thereto forwardly of the heel area, a socket depressed in said sole in said heel area, a heel section including a section of upper and a section of material attached to said upper and resting on said sole in said heel area, an aperture in said section of material in said heel area, attaching layer of material attached to said sole forwardly of said heel area socket and extending over said aperture, an attaching part connected to said attaching layer and passing downward through said aperture, said attaching part including a narrow neck and a lower wider portion maintaining said part detachably connected to said heel area socket, and a slidable layer extending in an intermediate area between said attaching layer and said sole in said heel area, said slidable layer having a narrow slot, said slot being closed at one end open at the other, the sides of said slot extending on opposite sides of said narrow neck of said attaching part.

12. A article of footwear including a sole with a section of upper attached thereto forwardly of the heel area, a socket depressed in said hole in said heel area, a heel section including a section of upper and a section of material attached to said upper and resting on said sole in said heel area, an aperture in said section of material in said heel area, an attaching layer of material attached to said sole forwardly of said heel area socket and extending rearwardly over said aperture, an attaching part connected to said attaching layer and passing downward through said aperture, said attaching part including a narrow neck and a lower wider portion maintaining said part detachably connected to said heel area socket, the rear border of said aperture being spaced from said neck of said attaching part, said heel section being separable from said sole and from said attaching layer when said attaching part is detached from said heel area socket.

13. An article of footwear including a sole with a section of upper attached thereto forwardly of the heel area, a socket depressed in said sole in said heel area, a heel section including a section of upper and a section of material attached to said upper and resting on said sole in said heel area, an aperture in said section of material in said heel area, an attaching layer of material attached to said sole forwardly of said heel area socket and extending rearwardly over said aperture, an attaching part connected to said attaching layer and passing downward through said aperture, said attaching part including a narrow neck and a lower wider portion maintaining said part detachably connected to said heel area socket, an area of the border of said aperture being resilient.

14. An article of footwear including a sole with a section of upper attached thereto forwardly of the heel area, a socket depressed in said sole in said heel area, a heel section including a section of upper and a section of material attached to said upper and resting on said sole in said heel area, an aperture in said section of material in said heel area, an attaching layer of material attached to said sole forwardly of said heel area socket and extending rearwardly over said aperture, an attaching part connected to said attaching layer and passing downward through said aperture, said attaching part including a narrow neck and a lower wider portion maintaining said part detachably connected to said heel area socket, and vertically compressible resilient material on opposite sides of said narrow neck in an intermediate level between said attaching layer and said sole.

15. The article of claim 14 in which said vertically compressible resilient material extends between said attaching layer and said section of material.

16. An article of footwear including a sole with a section of upper attached thereto forwardly of the heel area, a socket depressed in said sole in said heel area, a heel section including a section of upper and a section of material attached to said upper and resting on said sole in said heel area, said section of material being detachably attached to said socket, the attaching part including a narrow neck and a lower wider portion maintaining said attaching part detachably connected to said socket, a vertically compressible resilient material on opposite sides of said narrow neck in an intermediate level between said section of material and said sole.

17. An article of footwear including a sole with a section of upper attached thereto forwardly of the heel area, a socket depressed in said sole in said heel area, a heel section including a section of upper and a section of material attached to said upper and resting on said sole in said heel area, said section of material being detachably attached to said socket, said section of material extending foarwardly toward a section of an upper portion of said sole, one of said sections having a channel extending inwardly from its edge, and the other of said sections having a section extending into said channel.

18. The article of claim 17, and a removable section in said channel between the inner end of said channel and the end of said section extending into said channel.

19. An article of footwear including a sole with a section of upper attached thereto forwardly of the heel area, a socket depressed in said sole in said heel area, said socket extending lengthwise of said sole, said socket being closed at one end and having an entrance at its opposite end, a heel section including a section of upper and a section of material attached to said upper and resting on said sole in said heel area, said section of material being detachably connected to said socket, and a spacing section of material detachably connected to the connecting part and being detachably positioned in said socket between said connecting part and said closed end of said socket.

20. The article of claim 19 in which said connecting part includes a narrow neck extending downward and a wider lower section, said spacing section having a part extending around said narrow neck.

21. The article of claim 10 and a removable section of material in said forward socket between said closed rear end of said forward socket and the attaching part of said attaching layer.

22. An article of footwear including a sole with a section of upper attached thereto forwardly of the heel area, a socket depressed in said sole in said heel area, a heel section including a section of upper and a section of material attached to said upper and resting on said sole in said heel area, an aperture in said section of material in said heel area, an attaching layer of material attached to said sole forwardly of said heel area socket and extending rearwardly over said aperture, an attaching part connected to said attaching layer and passing downward through said aperture, said attaching part including a narrow neck and a lower wider portion maintaining said part detachably connected to said heel area socket, a section of the border of said aperture being spaced from said neck of said attaching part.

23. An article of footwear including a sole with a section of upper attached thereto forwardly of the heel area, a socket depressed in said sole in said heel area, a heel section including a section of upper and a section of material attached to said upper and resting on said sole in said heel area, an aperture in said section of material in said heel area, an attaching layer of material attached to said sole forwardly of said heel area socket and extending rearwardly over said aperture, an attaching part connected to said attaching layer and passing downward through said aperture, said attaching part including a narrow neck and a lower wider portion maintaining said part detachably connected to said heel area socket, said forward attachment of said attaching layer to said sole including a socket depressed in said sole and having a forward entrance and a rearward closed end.

24. An article of footwear including a sole with a section of upper attached thereto forwardly of the heel area, a heel section including a section of upper and a section of material attached to said upper and resting on said sole in said heel area, a socket depressed in said sole in said heel area, said section of material having a part detachably attached to said heel area socket, said section of material extending forwardly and being detachably attached to said sole forwardly of said heel area socket, said forward attachment including a socket depressed in said sole and having a forward entrance and a rearward closed end, and a part connected with one of said sockets and opposing rearward sliding of said heel section.

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PATRICK D. LAWSON, *Primary Examiner.*

U.S. Cl. X.R.

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