

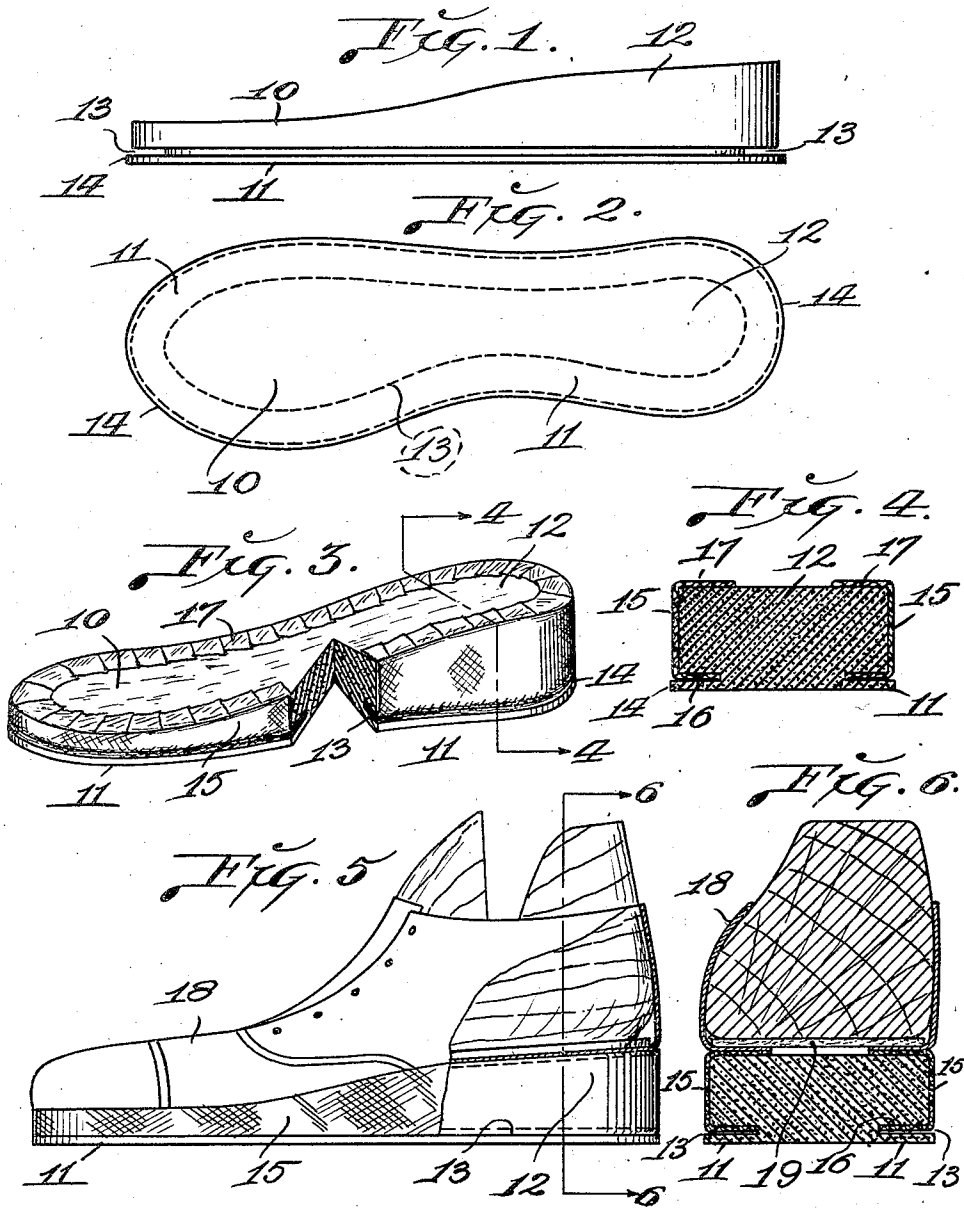
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SHOE MIDSOLE CONSTRUCTION

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## SHOE MIDSOLE CONSTRUCTION

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1 Claim. (Cl. 36—25)

My invention relates generally to footwear and more particularly to a shoe midsole construction and my present invention is an improvement on the shoe covered by U. S. Letters Patent No. 2,110,521 issued to me March 8, 1938, also the shoe construction forming the subject matter of my copending application for patent filed February 7, 1940, Serial No. 317,641.

The principal objects of my present invention are, to generally improve upon the shoe constructions disclosed in my aforesaid issued patent and copending patent application and further, to provide a one-piece sole construction for shoes that combines a midsole, an outsole and heel lift.

By forming the midsole, outsole, and heel lift, from a single piece of material, for instance, rubber or other flexible material, a more speedy, simple and inexpensive method of manufacturing midsole shoes is provided and at the same time imparting to the shoe increased flexibility and durability and in addition giving added comfort to the wearer of the shoe.

A further object of my invention is, to provide an improved midsole construction that will enable shoe manufacturers to greatly simplify the forming and assembly of the midsole, heel lift, and outsole, and at the same time reducing the costs of material and labor involved.

The present method of construction of midsole shoes involves the lasting of the shoe upper directly onto the insole. The heel lift is then formed to fit onto the rear portion of the midsole and said heel lift and midsole are then properly secured to each other. An edge covering is now formed and attached directly to the midsole and heel lift by means of a suitable adhesive. The outsole of proper size and shape is now formed and attached to the under sides of the midsole, the heel lift, and to that portion of the covering underlying said midsole and heel lift.

The assembled midsole, heel lift, covering, and outsole, are now attached to the lasted upper and insole by a suitable adhesive.

The materials used in forming the midsole and heel lift are generally composed of felt, cork, paper, or wood. The felt and paper have a tendency to cause the covering to wrinkle and thereby detract materially from its appearance. The wood and cork when beveled thin at the edges and which beveling is necessary, frequently crack and break, particularly where any appreciable degree of pressure is utilized in attaching the assembled midsole, heel lift, covering, and outsole, to the lasted upper and insole.

These undesirable results reduce the shoe readily susceptible to damage and the shoe in addition to being uncomfortable to the wearer has a relatively short life or period of service.

In my improved midsole construction, the midsole, heel lift, and outsole, are formed from a single piece of flexible material and there being a continuous channel formed entirely around the marginal portion of the one-piece body and extending inwardly from the edge thereof, which channel receives the lower portion of the covering member for the midsole and heel lift, which covering is usually formed of fabric, and that portion of the body below the channel performing the functions of an outsole.

With the foregoing and other objects in view, my invention consists in certain novel features of construction and arrangement of parts that will be hereinafter more fully described and claimed and illustrated in the accompanying drawing in which:

Fig. 1 is a side elevational view of a combined midsole, heel lift, and outsole, constructed in accordance with my invention.

Fig. 2 is a view looking against the under side of the combined midsole, heel lift, and outsole.

Fig. 3 is a perspective view of the midsole construction, with the fabric covering member in position on the marginal portions of the midsole and heel lift and with a portion of the structure near the center thereof broken away.

Fig. 4 is a vertical cross section taken on the line 4—4 of Fig. 3.

Fig. 5 is a side elevational view of a shoe assembled on a last, with a portion of the upper and cover for the midsole and heel lift broken away.

Fig. 6 is a vertical cross section taken on the line 6—6 of Fig. 5.

Referring by numerals to the accompanying drawing which illustrates a preferred embodiment of my invention, 10 designates the midsole, 11 the outsole, and 12 the heel lift. These parts are formed in a single piece from elastic or flexible material, for instance, sponge rubber, a flexible composition of which rubber is an ingredient, or other suitable flexible material, either elastic or non-elastic.

The heel lift portion is provided by gradually increasing the thickness of the midsole from its intermediate portion toward its rear end, and thus in longitudinal section the entire structure is substantially wedge-shape as illustrated in Fig. 1.

Formed between the marginal portions of the

midsole 10 and outsole 11 is a narrow channel or groove 13 that projects inwardly from the side faces of said midsole and outsole, said channel being provided for the reception of the lower portion of the fabric cover for the midsole and heel lift portion of the structure.

To compensate for the thickness of the fabric covering on the sides of the midsole and heel lift, the outsole 11 is extended a slight distance beyond the side faces of the body of material forming the midsole and heel lift as designated by 14 and thus when the cover is properly applied to the midsole and heel lift, the outer edge or face of the outsole 11 lies practically flush with the outer face of the cover (see Figs. 3 and 4).

The cover for the side faces of the midsole and heel lift and which is designated by the numeral 15 is preferably formed from a single piece of fabric or the like and it overlies all portions of the side and end faces of the midsole and heel lift, with the lower portion of said cover extending into the groove or channel 13 as designated by 16, and the upper portion of said cover overlies the marginal portions of the upper faces of the midsole and heel lift as designated by 17. This cover is secured to the body of material forming the midsole and heel lift and to the upper face of the outsole below the channel 13 by a suitable adhesive.

Thus after the covering is applied to the midsole structure, its intumed lower edge is very firmly held in the channel 13 and the intumed upper edge is clamped between the upper surfaces of the midsole and heel lift and the intumed portion of the upper.

After the midsole structure has been completed and the side covering applied thereto, said struc-

ture is secured to the lasted upper 18 as illustrated in Figs. 5 and 6 and with the insole 19 positioned on top of the midsole and heel lift structure and upon the intumed edges of said upper.

Thus it will be seen that I have provided, in shoe construction, a member formed in a single piece and which member comprises a midsole, a heel lift, and an outsole, and with a separately formed cover firmly secured to the side faces of the midsole and heel lift.

The one-piece midsole, heel lift, and outsole, embodying my invention, is relatively simple in construction, inexpensive of manufacture and very effective in performing the functions for which it is intended.

It will be understood that minor changes in the size, form and construction of the various parts of my improved shoe midsole construction, may be made and substituted for those herein shown and described, without departing from the spirit of my invention, the scope of which is set forth in the appended claim.

I claim as my invention:

As a new article of manufacture a combined sole and heel construction formed from a single piece of composite material and comprising a midsole that gradually increases in thickness toward its rear end so as to provide a heel lift, a flat outsole on the underside of said midsole and heel lift, the marginal portion of said outsole being separated from the midsole and heel lift by a continuous channel of uniform width and depth and a cover secured on the faces of said midsole and heel lift with the lower portion of said cover extending into and fastened within said channel.

JOHN H. DAVIS.