

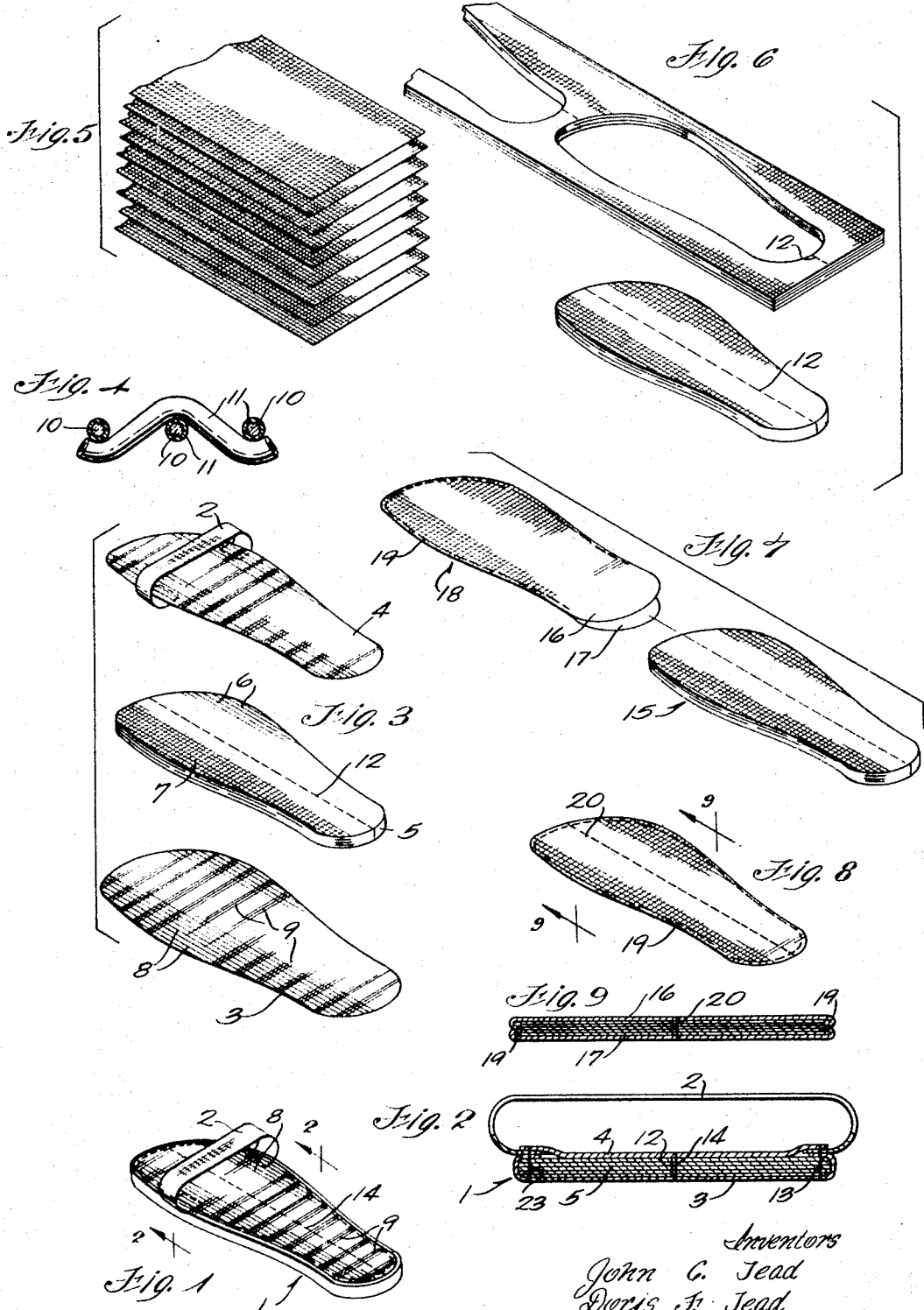
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SOLE FOR FOOTWEAR

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SOLE FOR FOOTWEAR

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ABSTRACT OF THE DISCLOSURE

A beach slipper includes a sole formed of a substantial number of layers of a relatively fine mesh. The edges of the mesh are folded and sewed to form a neat appearing slipper edge. A foot strap is secured to the forward portion of the sole for attachment to a person's foot. The built-up mesh sole provides a generally continuous supporting or foot portion which readily allows water and the like to pass therethrough. The mesh is formed of fiber glass strands coated with plastic.

The top and bottom mesh layer is formed with grouped strands extending in one direction to define the mesh openings.

The sole may be formed by partially sewing the top and lower layers along the edges to form a pocket open at one end and inserting a plurality of inner layers before sewing of the open end.

This invention relates to a sole unit for footwear for a human being and in particular to a sole for a beach slipper or the like.

In many applications, it is desirable to have footwear with the sole portion constructed to readily pass fluid and liquids while adequately protecting the foot against heat or cold and uncomfortable or dangerous objects on the ground. Although a great number of slippers and the like have suggested the use of apertured members, sponge rubber structures and the like, they all have certain disadvantages from the standpoint of operability and/or construction.

The present invention is particularly directed to a simple, relatively inexpensive and reliable sole structure for a beach slipper or other footwear.

Generally, in accordance with the present invention, the sole structure is formed of two or more layers of flexible mesh, a substantially greater number being preferred, suitably shaped to form a lightweight sole for a shoe, slipper or other protective footwear. The mesh structure particularly in a substantial number of layers provides a highly comfortable and essentially continuous protective foot support. Generally, the several layers of mesh are not superposed to form a continuous opening but rather the strands in the several layers will be offset to establish protection against relatively sharp objects. However, the mesh readily permits the transfer of fluids and liquids and thus particularly adapts the foot structure for beach wear and the like. In accordance with a particularly significant feature, the mesh is formed of glass fiber strands or the like to provide strength and is coated with plastic or other material with similar characteristics to provide a long life and highly wear resistant support. The top and bottom layers may be formed with the parallel strands extending in one direction in spaced multiple strand groups for purposes of appearance, wear and the like.

Further, in a highly satisfactory manner of constructing, a number of layers of the mesh are formed and sewn along a plurality of spaced lines generally in accordance with the center lines through adjacent sole patterns to interconnect the mesh layers for subsequent separation and manipulation. The multiple layer mesh is then cut to

the desired shape. The edges may be interconnected and finished in any desired manner to provide a neat appearing sole structure or remain unfinished, if desired. The upper and lower layers of the sole may, for example, be edge connected to form a separate pocket member having at least one opening. The interconnected multiple mesh layers may then be inserted into the pocket or previously been sewn onto the lower layer and the open portion of the pocket closed in any suitable manner to complete the sole structure. Alternatively, the bottom layer can be formed of a special material with the upper edge folded over the top of the multiple layer mesh and a top layer disposed thereover and an edge seam or sewed edge provided.

The drawing furnished herewith illustrates preferred constructions of the present invention in which the above advantages and features are clearly illustrated.

In the drawing:

FIG. 1 is a pictorial view of a slipper constructed in accordance with the present invention;

FIG. 2 is a vertical section through the slipper substantially enlarged to show details of construction;

FIG. 3 is an exploded view diagrammatically illustrating the construction;

FIG. 4 is an enlarged vertical section through a single layer of mesh shown in FIGS. 1-3;

FIG. 5 is an exploded view showing a construction step;

FIG. 6 is an exploded view showing a second construction step;

FIG. 7 is an exploded view showing an alternative method of constructing a slipper sole;

FIG. 8 is a view of the completed slipper sole; and

FIG. 9 is a vertical section taken on line 9-9 of FIG. 8.

Referring to the drawings and particularly to FIG. 1, a simplified basic illustration of a slipper structure including a sole 1 and a foot strap 2 secured to the opposite edges of the sole and extending upwardly therebetween to provide an opening for receiving the foot of a person is shown. A generally oval shape for the sole in shown in the drawing for simplicity of illustration. Any other foot shape can of course be provided.

The sole 1, in accordance with the illustrated embodiment of the present invention, includes a bottom layer 3 and a top layer 4 formed of a similar mesh with a plurality of superimposed inner mesh layers 5 disposed therebetween.

The inner layers, as most clearly shown in FIG. 3, include a first plurality of equally spaced parallel strands 6 extending longitudinally of the sole and a second plurality of similar parallel strands 7 extending laterally of the sole 1 and perpendicular to the first strands 6. The strands 6 and 7 are interwoven or intertwined to form a usual mesh or net structure.

The bottom layer 3 and the top layer 4 are similarly formed with parallel and intertwined strands. In the illustrated embodiment, the longitudinally extending strands 8 are spaced with a slightly greater distance between each third strand. The strands extending laterally of the bottom and top layer are formed in groups 9 of a plurality of closely or immediately adjacent strands. The laterally extending grouped strands 9 provide a greater support area and with the longitudinal placement of the strands 9 provide a very pleasing appearance.

The individual strands 6-9 of the several layers of mesh are all similarly formed of a fiber glass thread 10 or similar material having an outer covering or coating of a suitable wear-resistant material such as a suitable plastic 11. The mesh is thus not damaged by water and similar elements and can be readily employed on the beach or the like.

The multiple layers of the mesh are generally stacked with the strands of the several layers offset or the size and shape of the mesh may be varied from one layer to another to provide a substantially continuous support structure. The layered mesh however will remain highly porous and readily allows passage of fluids such as air, liquid and the like.

For production purposes a plurality of sole units may be built up as follows. A plurality of large sheets of the mesh are disposed in stacked or superimposed relation, generally as shown in FIG. 5. An interconnecting thread 12 is applied by sewing along a line through the longitudinal center of the multiple mesh in the final slipper and a plurality of inner layers 5 of the soles are formed to the desired shape, as shown in FIG. 6.

The bottom layer 3 is formed slightly larger than the formed layers of inner mesh and folded over the peripheral edge thereof, as shown in FIG. 2. The top layer 4 is disposed thereon and the assembly connected by sewing to locate an edge securing thread 13 along the outer peripheral edge, as shown in the drawing. A central longitudinal thread 14 is applied to prevent separation of the central portions of the top and bottom layers. The mesh layers have been shown interconnected by threads as sewing is one convenient and practical method of construction. Any other suitable means might also be employed; for example, cementing or other bonding of layers to each other.

The strap 2 can be interconnected between the overlap of the bottom layer edge and the top layer 4 as shown for purposes of convenience and simplicity of construction.

An alternative embodiment of the invention is shown in FIGS. 7-9 having an inner multiple layer mesh assembly 15 similar to that of the first embodiment. The top and bottom layers 16 and 17 however are formed of a mesh similar or identical to that of the inner layers and are preformed into a pocket member 18 with one portion, shown as the heel end, open to receive assembly 15. In the illustrated embodiment of the invention, the edges of the top and bottom layers 16 and 17 are folded inwardly between the two layers and connected by thread 19 by a suitable sewing operation. The preformed inner multiple layer mesh assembly 5 is inserted into the pocket and the sole completed by folding the free portion of the top and bottom layer inwardly adjacent the top side of the inner assembly 15 and connecting the edges to each other and also providing a longitudinal central interconnecting thread 20 as in the first embodiment.

The multiple layers will protect the foot from hot surfaces as well as sharp and blunt objects and the like such as encountered in the yard, street and beach areas while readily permitting the draining of water and the like from them. Further, forming of the multiple layer meshes from the plastic encased fiber glass or the like will provide very rapid dissipation of water and drying of the slipper.

The invention has been illustrated in its preferred constructions. However, the invention broadly only requires

multiple layer mesh forming a completed sole with some means for interconnecting of such layers. For certain applications, a single pair of mesh layers might be satisfactorily employed.

It has been found that this structure provides a very reliable and highly satisfactory slipper construction particularly for a beach slipper.

Various modes of carrying out the invention are contemplated as being within the scope of the following claims particularly pointing out and distinctly claiming the subject matter which is regarded as the invention.

We claim:

1. A sole for footwear comprising a substantial multiple of layers of essentially identical mesh material having intersecting strands spaced to define unrestricted openings and with the strands of the several layers offset to establish a continuous support structure which is highly porous and readily allows passage of liquid, said layers being shaped to define a sole, and connecting means to interconnect the layers of mesh to form a completed sole which protects the sole portion of a foot and permits the ready transfer of liquid therethrough.

2. A sole for footwear comprising a substantial multiple of layers of a similar mesh material having intersecting strands spaced to define unrestricted openings and with the strands of the several layers offset to establish a continuous support structure which is highly porous and readily allows passage of liquid, said layers being shaped to define a sole, and connecting means to interconnect the layers of mesh to form a completed sole which protects the sole portion of a foot and permits the ready transfer of liquid therethrough.

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