

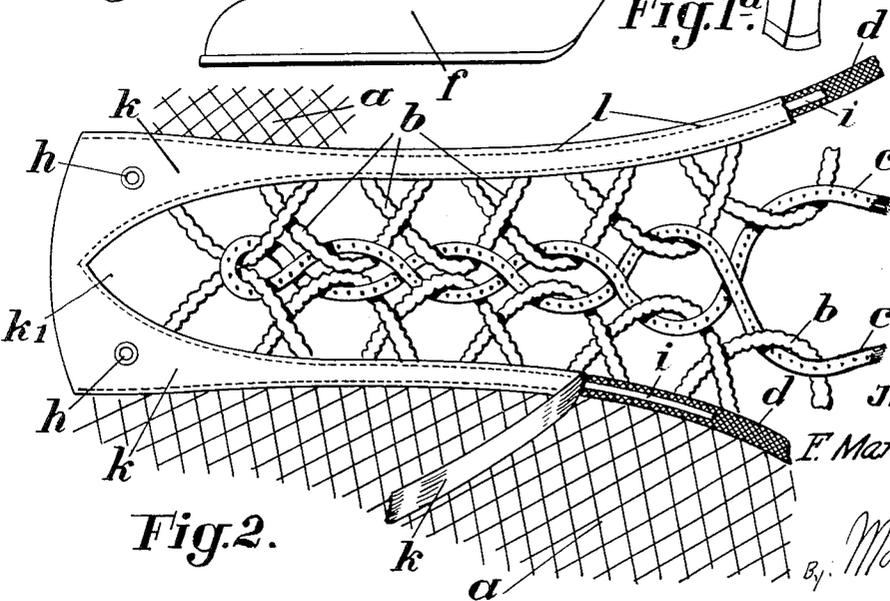
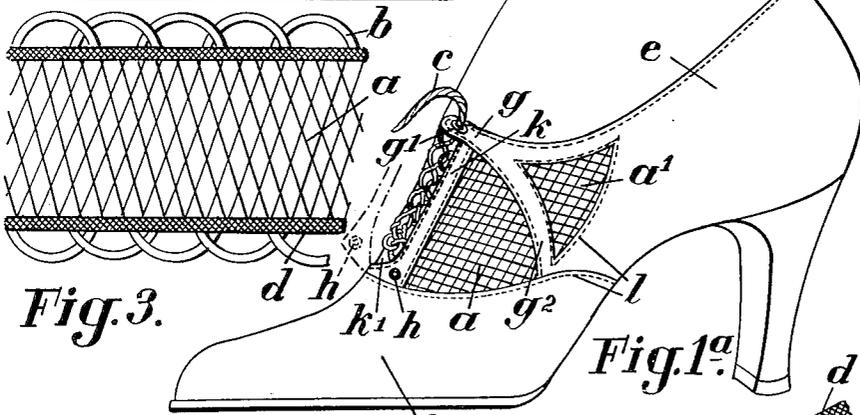
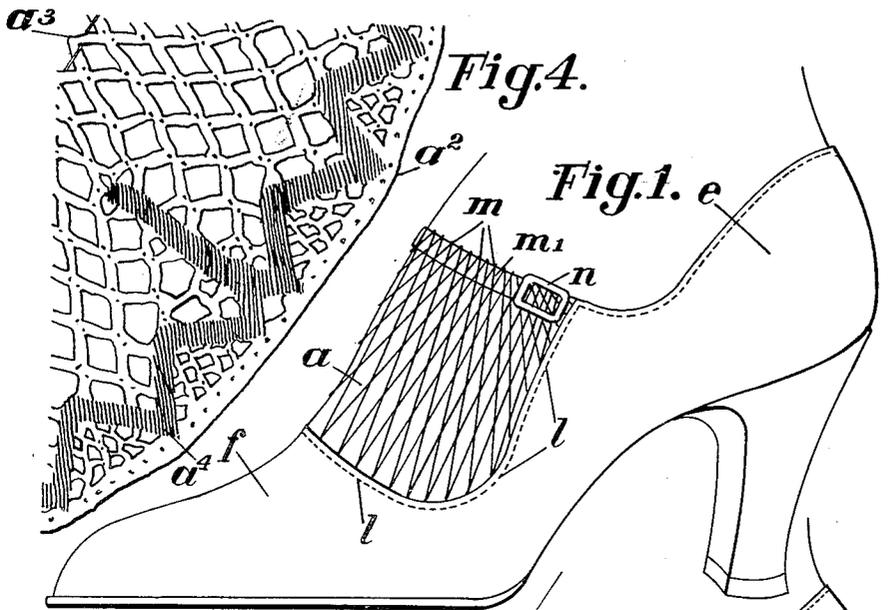
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FOOTWEAR

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FOOTWEAR

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Perfectly fitting foot-wear, more particularly that for ladies, must not only fit the foot closely, all over, especially the instep without excessive pressure, which might easily cause pain or interfere with the movement of the foot when walking, but must fit in an elastic manner and adapt itself automatically to all changes in the shape of the foot caused, for instance, by exertion or changes in temperature. Furthermore, ample and continuous ventilation of the feet must be provided for so as to prevent or reduce accumulations of blood, it being necessary at the same time for the shoes to present a pleasing and smart appearance.

Shoes having strap fastenings secured by buttons or adjustable buckle fasteners and having portions of the upper cut away or perforations in the front part of the upper over the instep generally provide for a sufficient ventilation of the instep. The narrow width of the fastener strap or straps results in both the straps and fastening places at their ends being subjected to considerable stress. The straps or fasteners, therefore, easily stretch and cease to lie snugly against the instep. If the strap is too tight it cuts into the flesh at the instep, causing it to swell adjacent the constricted places and the blood to accumulate in the vessels at the instep resulting in unsightly bulging of the flesh along the whole length of the fastener and the cut away parts or perforations of the shoe bridged by them. Furthermore, in non-elastic fasteners the buttons are easily torn off, or the button holes broken.

Foot-wear provided with lateral elastic insertions is unsightly and the elastic gussets easily lose their elasticity after being in use for only a short time.

Foot-wear provided with sliding clasp fasteners do not admit of any elastic yielding at right angles to the longitudinal direction of the fastener. If the parts of the sliding clasp fasteners are sewn to elastic braiding, owing to the fact that only narrow braiding can be conveniently employed, said braiding will be excessively stressed, and will therefore soon lose its elasticity so that it does not fulfill its purpose in a satisfactory manner.

Shoe fastenings consisting of a plurality of buttons, button holes or eye places, one above the other, and connected by laces, are used only for closed laced boots reaching to the ankle or above. Buttons and lace fastenings comprising rows of buttons or eyelets do not permit the foot-wear to adapt itself to varying heights and

shapes of the instep and frequently exert too strong a pressure on the same and the boot or shoe gapes or slips on the foot when the pressure is relaxed and in no case provide for a really satisfactory ventilation of the instep.

These drawbacks of insufficient ventilation of the instep and the excessive pressure produced by fasteners comprising rows of buttons or by laces is not removed by inserting longitudinal strips of woven silk material laterally of the closing tabs in the leather of the shoe upper or by making the lateral parts of the shoe upper up to the heel cap of woven horse hair, since these materials have no greater elasticity and ventilating capacity than linen and cannot be used for the better kinds of foot-wear which are to have a smart appearance.

The present invention has for its object not only to provide efficient ventilation in ladies' shoes but also to overcome the disadvantages referred to above of the fastening means, more particularly straps and buckles of not conforming to the varying shapes of the instep and the imperfect joining of the edges of the surfaces of the front part of the shoe adjoining the perforated or cut away parts. This is effected by filling the cut away parts or the gaps in the upper with elastically yielding material, the threads thereof being disposed to form an open meshed structure with numerous external openings therein permitting free access of light and air to the foot of the wearer.

This material has its threads connected together or interlaced in such a way as to enable it to adapt itself to the changing extremes in the shape of the instep almost as easily as if it were made of elastic threads (rubber threads) but, compared with rubber gussets, it has the advantage of being considerably more durable, far stronger, and of a better and smarter appearance. Moreover, without appreciably effecting the ventilation of the foot, it bears over the whole of the cut away or perforated surface filled by it, without exerting uncomfortable pressure on the foot, prevents the flesh from bulging out at the edges of the cut away or perforated portions or at the edges of the fastenings, is of smart appearance and can, when necessary, be easily replaced by new filling insertions.

In Figures 1 to 4 of the accompanying drawing, several examples of the insertions according to the invention are shown.

Figure 1 is a perspective view of a lady's shoe which has the net insertion according to the in-

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vention, in a single cut away portion of the shoe upper.

Figure 1a is a similar view in which the net insertions are arranged on either side of the centre line of the instep of the foot and also in perforations, the cut away place in the region of the centre line leaving a gap which is closed by being laced.

Figure 2 shows the laced place in plan view and to an enlarged scale.

Figure 3 shows a section of a band from which the net insertions to be used with the lacing shown in Figure 2 can be made in long webs.

Figure 4 is a sector-shaped portion of an annular woven or knitted laced band which can be used for filling perforations or the like.

Referring to Fig. 1 an insertion a fits the cut away part in the upper f and is made of a net-like woven or knitted material, for instance threads of silk, wool, ramie fibre, cotton or the like, hair, for instance horsehair and the like, is joined to the edges of the cut away part in any suitable manner, for instance by a seam l . The upper edge of the insertion adjoining the upper edge of the part e of the shoe so as to be level with it is reinforced by being turned over and seamed or preferably an elastically extensible closing band is placed behind it or such a band is passed through the meshes of the insertion at the upper part thereof. The closing band, which may be made of elastic, wire braid or plaited leather, may be interlaced through the loops of the insertion at m or the selvedge of the net may be doubled over and sewn down in such a manner that a tunnel is formed at the edge of the net through which an elastic cord, tape, or plaited leather strap m^1 is drawn, which is suitably connected at its ends to the edges of the part e of the upper. This member may be fixed at one or at both ends. It is preferable, however, to fix it at one end only and to provide the other end with a button or a buckle n , in which case the button is inserted in the button-hole of a leather tab fixed at the edge of the part e of the shoe or the buckle opening is hooked over a hook on the said tab. The net insertion a can also, as shown in Figs. 1a-3, be arranged on both sides of the centre line of the instep and be separated by a gap k^1 along this line.

For making the net insertions a continuous band of network such as shown in Fig. 3 or a ring-shaped woven or knitted band of braiding as shown in Fig. 4 may be used.

These bands are for instance woven or knitted by machinery in the usual manner, the pattern as shown in Fig. 3 consisting for instance of three parts, the network a , marginal parts b having loops and a reinforcing part d on either side between the parts a and b .

The network part a may be woven with single or multiple loops or in the form of fancy patterns.

As the lace loops b are more severely stressed than the network part a , the strongest weaving material is used for this purpose and a stronger thread used than in the network part.

The gap which is filled by the insertion a is approximately rectangular in shape and the insertion comprises a rectangular piece severed from the band, the two bottom corners of the piece being cut off to form an insertion having round bottom corners. In the case of Figure 1a, the rounding is continued to the top edges of the piece. In this case the insertions are not divided at the strap g^2 but are in one piece on each side of the shoe.

The marginal loops b through which a lace is to be passed are woven on one or on both sides of the lace-work portion a . Their connection to a is established by the marginal parts d being made with a closer mesh.

The lace or network insertions a^1 for filling the perforations in the foot-wear shown in Fig. 1a may be made wedge or sector shaped and can in that case be formed by separated off pieces of ring-shaped woven or suitably knitted lace band $a^2-a^3-a^4$ (Fig. 4).

When the band is divided into separate insertions shaped strips k of leather, cloth, rubber or the like are stitched on over the marginal parts d , which strips may, for instance, be in the form shown in Figs. 1a and 2, in which there is a gap k^1 along the centre line of the instep of the foot.

The loops b through which the laces are to be inserted, as shown in Fig. 2, project from under the inner edges of the stitched on shaped strip k of the plaited insertion part a .

When the strip k is cut very narrow, shaped reinforcing springs i of a light and flexible metal are inserted, preferably by being interposed between the strip and the network when the strip k is stitched on. By this means the place where the laces are inserted is reinforced and cannot be easily deformed when the lace c is drawn tight even in the case of a large foot.

The network a visible on either side of the lacing can be connected to the upper in various ways, for instance by stitching l to the front part f and the part e of the shoe. Wedge-shaped perforations preferably have sections a^1 of sector shaped network bands placed behind them, (Figs. 1 and 4). The part e of the shoe preferably terminates at the upper edge towards the instep in a tab g which is connected by a bridge strap g^2 with the front part f of the shoe, so as to give it support.

The gap k^1 is placed up by means of a round and smoothly twisted cord c . The cord c is drawn cross-wise through the loops b and is passed through an eye g^1 in the strap-like extension of the end of the marginal part of e .

Instead of drawing the lace c through the bottom pair of loops b , a pair of eyes h may be provided in the lower end of the shaped strips k , through which the lace c is first drawn, before it is passed successively through the pairs of loops b . The pull of the lace can in this way be transmitted to stronger parts of the foot-wear.

This way of lacing up the shoe is easy and handy and as the lateral net-like insertions a are elastic, a complete closure can be obtained even when the foot in the shoe has a higher instep.

The insertions are fixed by means of seams l , the edges of the parts attached to the upper part f of the shoe being inserted under the lining material of the upper.

When the network is woven with patterns in one colour the patterns can be made to blend with any coloured ornamentations on the upper part of the shoe by the patterns being painted with fast colours in the network.

What I claim is:

1. In a shoe, an upper provided with an instep opening, and an insertion for said opening including a loose-mesh fabric having part of its edge fastened to the upper at the edge of the instep opening, said fabric having a series of separated thread loops extending from its free edge adapted to engage a flexible drawing element drawn through said loops for tightening the in-

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sertion, and a reinforcing strip extending along the loose-mesh fabric adjacent to the junction of the fabric with the loops.

2. In a shoe, an upper provided with an instep
 5 opening, and an insertion for said opening comprising opposite complementary parts of loose-mesh fabric respectively fastened at their outer edges to the opposite edges of the upper at the opening therein, each of said complementary
 10 parts having at its inner edge a series of separated loops of coarse thread adapted to be engaged by a lacing drawn through the loops of both complementary parts to tighten the insertion, and a
 15 reinforcing strip extending along each complementary part at the junction of the loops with the loose-mesh fabric.

3. In a shoe, an upper provided with an instep

opening, and an insertion for said opening comprising opposite complementary parts of loose-mesh fabric respectively fastened at their outer edges to the opposite edges of the upper at the opening therein, each of said complementary
 80 parts having at its inner edge a series of separated loops of coarse thread adapted to be engaged by a lacing drawn through the loops of both complementary parts to tighten the insertion, and a bifurcated reinforcing element of
 85 flexible material secured to the insertion with its arms respectively extending along the complementary parts of the insertion, each arm being fastened to the respective complementary part at the junction of the loops with the loose-mesh
 90 fabric of said complementary part.

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