June 25, 1940. E. F. ROBERTS 2,205,577

SHOE ADJUSTABLE TO THE FOOT

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Fig. 1.

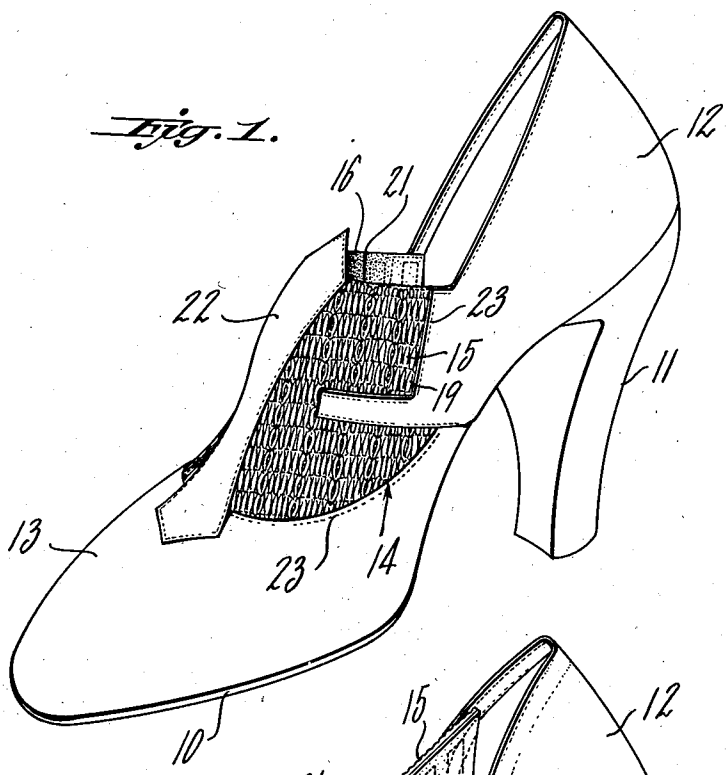
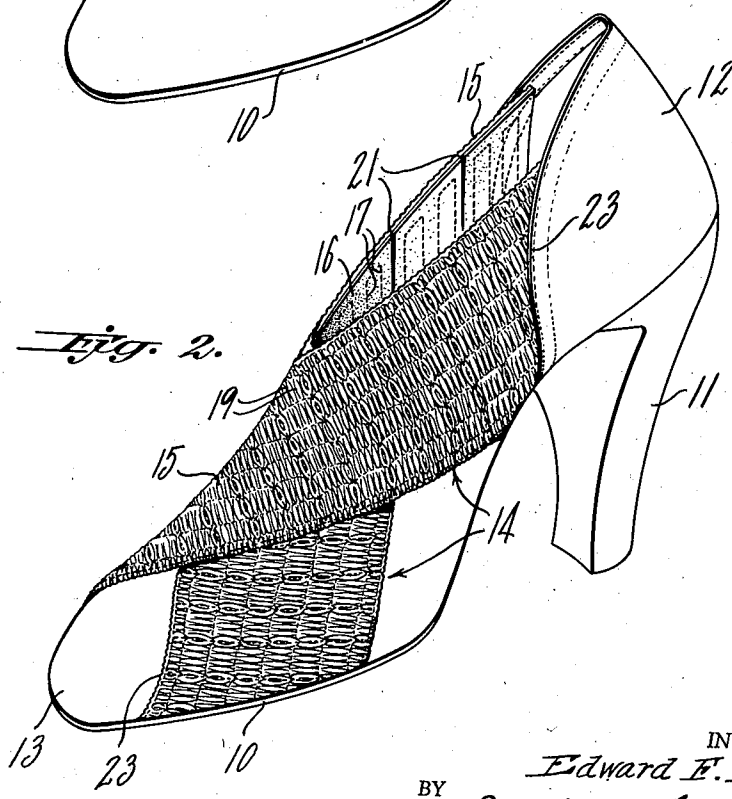


Fig. 2.



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Fig. 3.

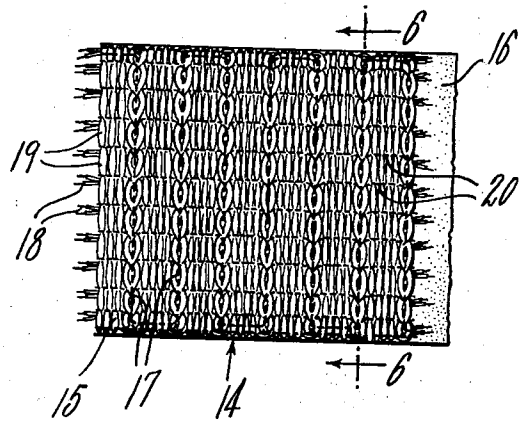


Fig. 4.

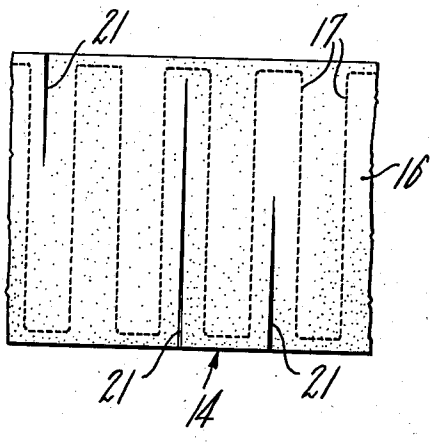


Fig. 6.

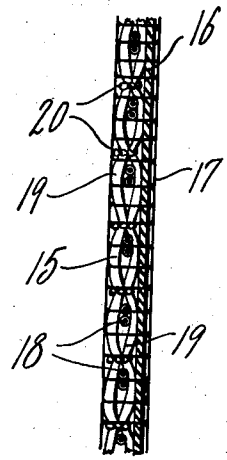
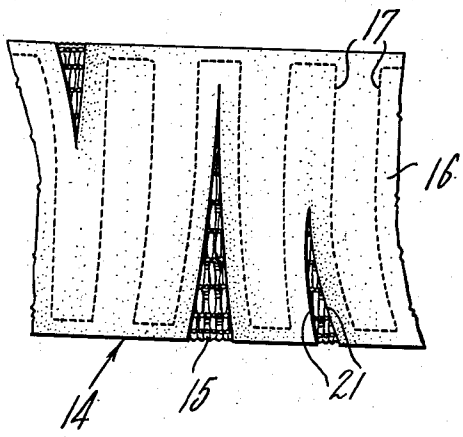


Fig. 5.



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UNITED STATES PATENT OFFICE

2,205,577

SHOE ADJUSTABLE TO THE FOOT

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Application July 23, 1937, Serial No. 155,199

2 Claims. (Cl. 36—45)

This invention relates to a novel shoe construction whereby the shoe may readily be made to conform to the particular shape of the foot of the wearer.

Shoes as commonly constructed heretofore are made to conform to the shape of standard lasts and as a result, if a person has a foot which does not conform to the shape of the standard lasts, it is difficult for him to secure a shoe that will properly fit his foot, unless such shoe is built upon a last which has been specially shaped in accordance with the peculiarities of his foot. The making of a specially shaped last and the building of a shoe thereupon to order is expensive and time consuming.

The present invention contemplates a novel shoe construction whereby the shoe salesman or other person engaged in trying a shoe on the customer may readily cause the shoe to conform accurately to the foot of the wearer. This is accomplished by so constructing the shoe that its binding pressure upon different portions of the foot may readily be relieved.

In carrying out the present invention any desired portion of the shoe upper may be provided with the novel shoe construction herein contemplated, but since in practice it is found that the portions of the foot most difficult to fit lie in the vicinity of the toes and in the throat of the shoe, the invention is preferably employed in these portions of the shoe.

In constructing a shoe in accordance with the present invention the desired portion of the shoe upper is formed of an elastic outer fabric and an underlying nonelastic lining firmly secured to the outer fabric along spaced rows so as to hold the elastic outer fabric from stretching. When so constructed this portion of the shoe will be non-elastic as the shoe is supplied to the trade, but if when the shoe is tried on by the customer, it is found to exert an uncomfortable pressure upon any portion of the foot, such pressure may be readily relieved by slitting the non-elastic lining between such rows at the point of pressure to thereby render elastic this particular portion of the shoe. After the underlying lining has been slitted in a particular portion of the shoe the overlying elastic outer fabric will cause this portion of the shoe to fit the foot snugly without exerting an uncomfortable binding pressure thereupon.

The above and other features of the invention will be more fully understood from the following description when read in connection with the accompanying drawings wherein—

Fig. 1 is a perspective view of one type of woman's shoe embodying the construction of the present invention.

Fig. 2 is a perspective view of a different type of women's shoe embodying the present invention.

Fig. 3 is a plan view of the outer exposed face of a ply material employed in carrying out the present invention.

Fig. 4 is a plan view of the inner face of the ply material of Fig. 3, such material being shown in its unextended condition.

Fig. 5 is a view similar to Fig. 4 but shows the material in the extended condition; and

Fig. 6 on a larger scale is a sectional view taken on the lines 6—6 of Fig. 3.

The construction of the present invention may be employed in various types of men's, women's and children's shoes and may be used in any desired portion of the shoe upper.

In the construction shown in Fig. 1 the shoe has the usual sole 10, heel 11, counter 12 and vamp or toe portion 13. Only that portion lying in the front quarter area is constructed in accordance with the present invention and is formed of the ply material 14 which will now be described.

This ply material 14 comprises an outer elastice fabric 15 and a non-elastic lining 16. Practically any elastic fabric having a relatively strong contractive force and which will present a pleasing appearance when embodied in a shoe may be employed as the fabric 15. Practically any of the materials used heretofore as shoe lining may be employed as the lining 16 but a leather shoe lining material is preferable. In carrying out the present invention it is important that the outer fabric 15 and lining 16 be firmly secured to each other in spaced rows extending transversely to the direction of stretch. In the construction shown the outer fabric 15 and lining 16 are secured together by the rows of sewing stitches 17.

While various elastic materials may be employed as the outer elastic fabric 15, in the construction shown a specially constructed elastic fabric is provided having the longitudinally extending elastic threads 18 which lie between the transversely extending upper and lower yarns 19. Each elastic thread 18 preferably consists of a rubber core having a textile cover. The threads 18 and 19 in the construction shown are not interwoven, but are retained in the fabric forming relation by the rows of stitching 20 having the usual lock-stitch construction except that

a fine elastic yarn is employed in the sewing machine shuttle to produce an elastic stitch which will permit the lengthwise stretching of the fabric thus formed. This fabric as shown is so formed that its appearance is altered slightly at the points where the rows of stitching 17 lie. Such a construction in the appearance of the fabric helps to conceal the spaced rows of stitching 17 which unite the fabrics 15 and 16.

In the construction of the present invention the lining 16 performs the usual function of a shoe lining and in addition thereto it performs an important added function which is to prevent the outer elastic fabric 15 from stretching during the formation of the shoe, and also when the shoe is being worn except in the vicinity of the slitted areas to be described.

If the ply material 14 is embodied in a shoe such for example as shown in Fig. 1 or 2, the entire upper of the shoe will be non-elastic so long as the underlying lining 16 is intact and is not slitted or severed between the spaced rows of stitching 17. If, however, it is found desirable to relieve the pressure of the shoe upon the foot at one or more points in this area 14, this may be easily done by slitting the under-lying lining 16 at one or more points between the rows of thread 17 as indicated by 21. The effect of forming such slits is to destroy the anchoring action of the underlying fabric 16 in the vicinity of these slits so as to permit stretching of the outer fabric 15 in this area and thereby relieve the pressure of the shoe upon the foot in this vicinity.

By employing the present construction in which the elastic fabric 15 is secured to the non-elastic fabric along the spaced rows 17 it is possible to render the outer fabric elastic at only the points desired, and when the underlying lining is slitted the area of the outer fabric thereby rendered elastic is limited to the area lying between the two adjacent rows of stitches 17 as is clearly shown in Fig. 5. As above stated the lining 16 is preferably a leather lining because leather will resist better than most fabric lining a tendency of the same to rip or tear in the direction of the slits 21.

In the shoe shown in Fig. 1 a piece of ply material 14 is provided at each side of the front portion of the shoe in the quarter area and these two pieces of fabric may be secured together in the throat of the shoe by a seam which is concealed by the ornamental strap 22.

In the construction shown in Fig. 2 a large portion of the shoe upper is formed of the ply material 14, by providing two strips of this ply material 14 each of which extend upwardly from the sole of the shoe near the toe thereof. These strips overlap in the throat area where they are sewed together and then extend along each side of the shoe in the quarter area as shown. In each of the shoe constructions shown the ply material 14 is sewed to the other shoe material along the seams 23.

It will be seen from the foregoing that if it should be desired to relieve the pressure of any portion of the shoe formed of the material 14 upon the foot, this may be readily done by simply slitting the lining 16 between the rows of stitches 17 wherever it is desired to relieve such pressure. The overlying outer fabric 15 will then be free to stretch to relieve the pressure upon this portion of the foot, but in doing so it will conform closely to the foot to give the shoe a neat and pleasing appearance.

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

1. A shoe adapted to be easily and quickly fitted to the particular contour of the foot of a person after having been built to fit a different shape foot, and having the upper thereof formed at least in part of an outer elastic fabric of relatively strong contractive force and an underlying non-elastic lining for holding the shoe as close to its original shape as is consistent with its fitting of the foot, said lining being firmly secured to the outer elastic fabric along spaced rows extending transversely to the direction of stretch to thereby restrict the stretch of the outer fabric between said rows to that permitted by the underlying fabric between the same rows, and said lining being slitted between at least some of said rows and adapted to be further slitted to render elastic the particular portion of the shoe upper overlying a particular slit, while the slit is concealed at the exterior of the shoe by the outer elastic fabric.

2. A shoe adapted to be easily and quickly fitted to the particular contour of the foot of a person after having been built to fit a different shape foot, and having the upper thereof formed at least in part of a one-way stretch outer elastic fabric and an underlying non-elastic lining for holding the shoe as close to its original shape as is consistent with its fitting of the foot, said lining being firmly secured to the outer elastic fabric along spaced rows extending transversely to the direction of stretch to thereby restrict the stretch of the outer fabric between said rows to that permitted by the underlying fabric between the same rows, and said lining being slitted between at least some of said rows and adapted to be further slitted to render elastic the particular portion of the shoe upper overlying a particular slit, while the slit is concealed at the exterior of the shoe by the outer elastic fabric.

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