

Sept. 12, 1933.

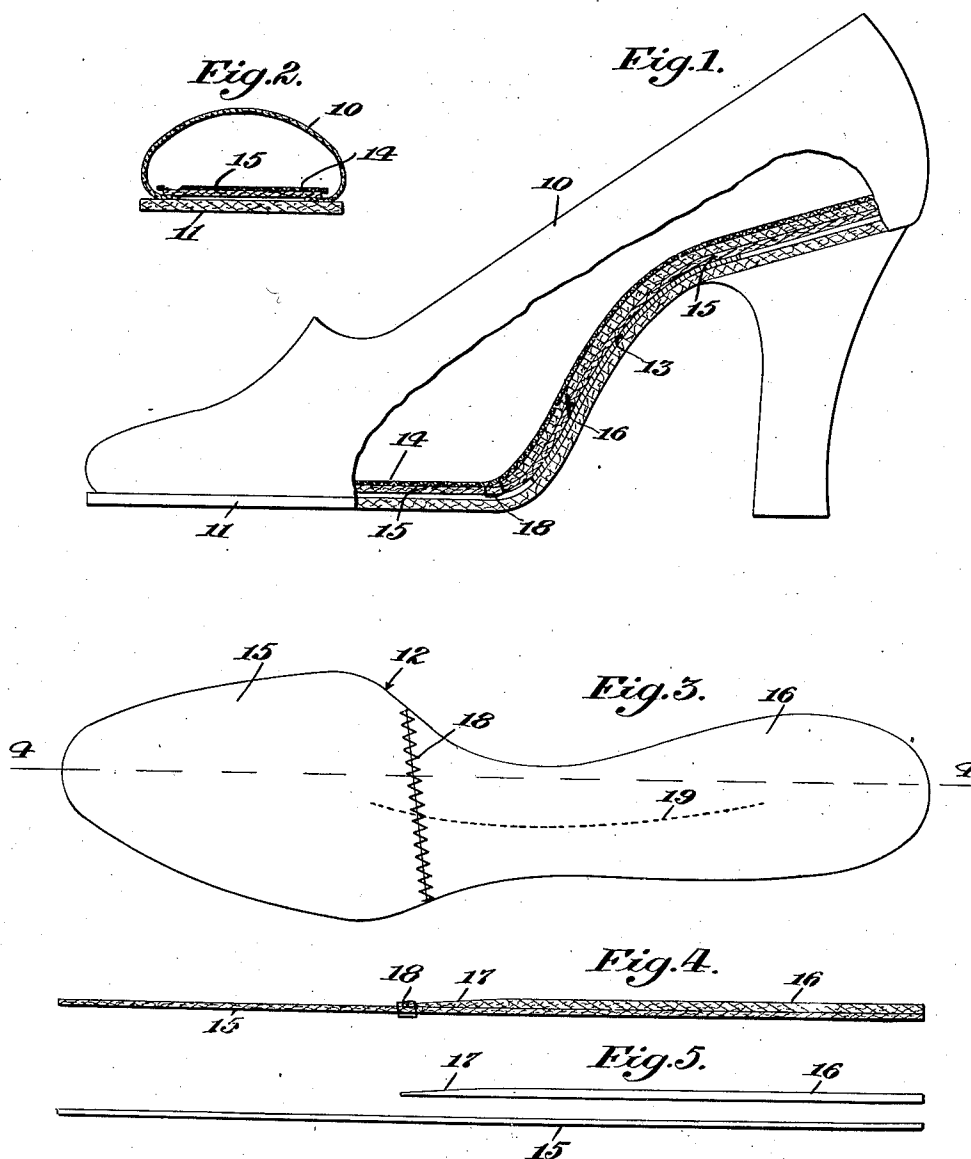
C. MILLER

1,926,683

INSOLE

Filed Oct. 7, 1931

2 Sheets-Sheet 1



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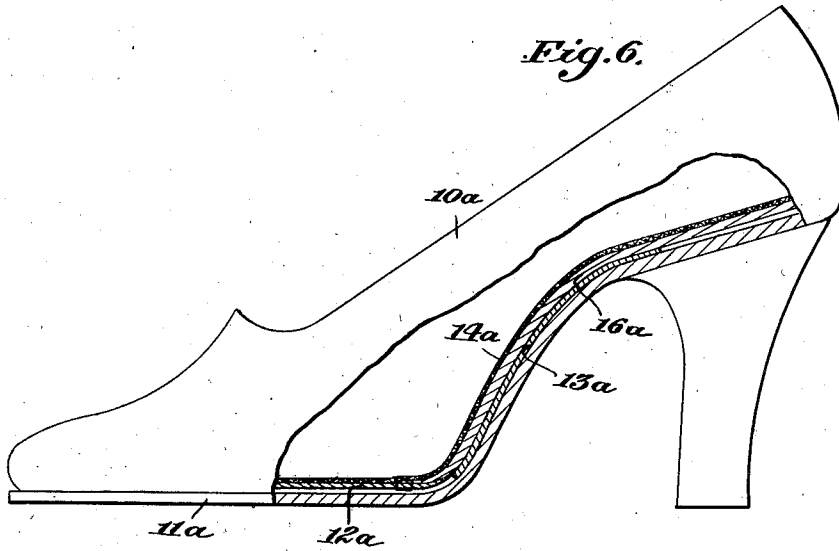
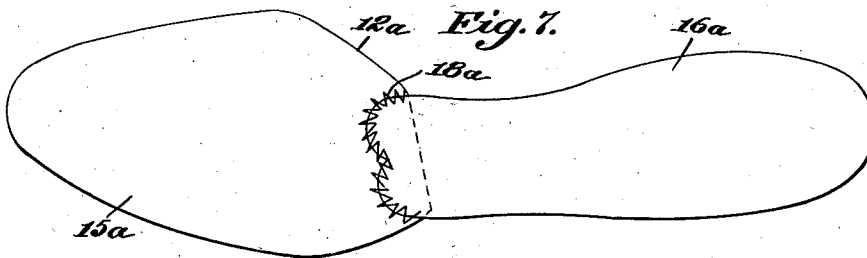
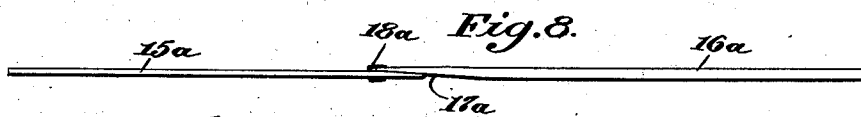
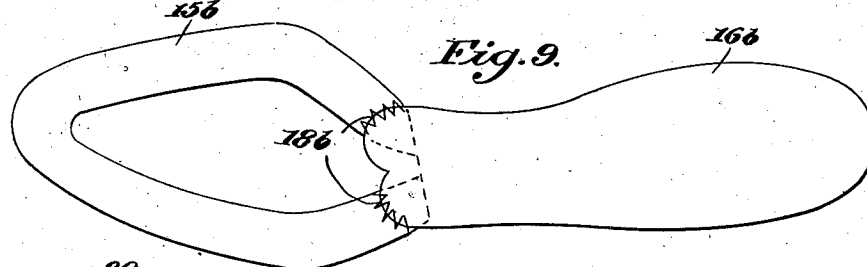
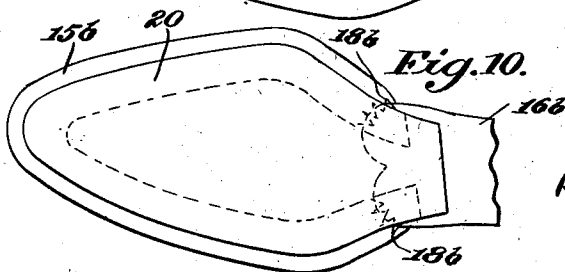
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

1,926,683

INSOLE

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Application October 7, 1931. Serial No. 567,482

2 Claims. (Cl. 36-43)

The present invention relates to shoes, especially ladies shoes, and innersoles therefor.

The prime object of the present invention is to provide a shoe characterized by relatively great flexibility in the forward portion thereof and substantial rigidity in the rear portion.

Heretofore it has been proposed to provide increased flexibility in the front portion of the shoe through the medium of a specially constructed inner sole comprising a rear section of relatively thick leather and a forward section of relatively thin leather, said two sections being cemented or glued together along transversely extending overlapping marginal portions. This construction has not proved successful because the flexing of the shoe produces a shearing action which, augmented by the heat of the foot, causes the two sections to separate and produces wrinkles or folds which cause unevenness in the top surface of the inner sole with resulting discomfort to the wearer as well as materially decreasing the life of the shoe. In order to minimize these difficulties it has further been proposed to secure the sections together at a line spaced rearwardly of the ball line of the shoe. This is undesirable because the flexibility extends too far into the shank portion of the shoe, whereas said shank portion should be comparatively rigid.

According to the present invention these disadvantages are overcome by stitching two inner sole sections together along a transverse line at the ball line of the shoe whereby to prevent separation of the sections and whereby to permit the location of the region of increased flexibility substantially at and forwardly of the ball line of the shoe. This constitutes an important object of the present invention.

In order to further increase the rigidity of the rear portion of the shoe and to prevent separation of the forward and rear sections of the inner sole, the present invention contemplates the provision of a thin inner sole section or layer extending from the heel to the toe of the shoe and a superposed comparatively thick section or layer extending from the heel to the ball line of the shoe, said sections stitched together at the ball line, and preferably also along a longitudinally extending median line. Said sections are also cemented together throughout their contacting surfaces. This constitutes another object of the invention.

The provision of this inner sole is particularly advantageous for use in cemented shoes although it is not restricted thereto. A cemented shoe having this inner sole has at its forward portion a

flexibility equal to or greater than the flexibility of a turn shoe and at its rear portion has the desired degree of rigidity of a welt shoe at said portion. This constitutes another object of the present invention.

A further object of the invention is generally to improve the construction of ladies shoes.

These and other objects of the invention which may hereinafter appear are attained in the construction which will now be described with reference to the accompanying drawings in which:

Fig. 1 is a side view of a shoe embodying the present invention;

Fig. 2 is a cross-section through the forepart of the shoe shown in Fig. 1;

Fig. 3 is a top plan view of the inner sole;

Fig. 4 is a longitudinal sectional view on the line 4-4 of Fig. 3;

Fig. 5 is an edge view of the inner sole sections separated.

Fig. 6 is a view similar to Fig. 1 showing a modification of the inner sole construction.

Fig. 7 is a top plan view of the inner sole.

Fig. 8 is an edge view of the inner sole shown in Fig. 7.

Fig. 9 is a top plan view of another modification of the inner sole construction.

Fig. 10 is a fragmentary top plan view of a further modification of the inner sole construction.

Referring to Figs. 1 to 5, as here shown, the shoe is of the cemented type and comprises an upper 10, an outer sole 11, an inner sole 12, a shank stiffener 13, and a sock lining 14. The inner sole 12 embodying the present invention comprises a section or layer 15 of thin and flexible leather preferably extending for the full length of the inner sole and a section or layer 16 of relatively thick and stiff leather extending from the heel to the ball line of the shoe. When section 15 is of full length, as shown in Figs. 1 to 5, it comprises a heel portion, a shank portion and a forward portion. Section 16 is skived or otherwise reduced in thickness at its forward portion 17, whereby said section is merged into the plane of the upper surface of section 15 and terminates with the shank portion thereof substantially at the ball line. The inner sole sections 15 and 16 are secured together at the forward edge of the section 16 by a transverse line of stitching 18 which, when the inner sole is placed in the shoe, is located at the ball line of the shoe. The sections thus stitched together are effectively prevented from separating and are held rigidly in place. The shoe, by virtue of the

relatively thin inner sole section 15 forwardly of said line of stitching, has extreme flexibility substantially at and forwardly of the ball line thereof, while increased rigidity is provided rearwardly of the ball line of the shoe by the superposed inner sole sections 15 and 16. A longitudinally extending median line of stitching 19 secures the inner sole sections together in a longitudinal direction and prevents lateral displacement thereof. Said sections are preferably cemented together throughout their contacting surfaces whereby to hold said sections in flat condition, said lines of stitching 18 and 19 preventing said sections from shifting with respect to each other thereby enabling the adhesive to maintain said sections in flat united condition throughout their contacting surfaces.

As shown in Figs. 6 to 8 the inner sole 12a may be used in a shoe of the cemented type. This shoe in Fig. 6 is similar in construction to the one shown in Fig. 1 and comprises an upper 10a, an outer sole 11a, an inner sole 12a, a shank stiffener 13a, and a sock lining 14a. As shown in Figs. 7 and 8, the inner sole 12a comprises the forward section 15a made of comparatively soft flexible leather known as splits, which is comparatively inexpensive, and a shank piece or sections 16a made of hard or stiff leather stock. Said inner sole sections 15a and 16a are arranged in overlapping relation at the ball line, the shank section 16a being skived or otherwise reduced in thickness at its forward portion 17a, and said sections are secured together by an adhesive and also preferably by stitching designated by the reference character 18a.

The inner soles shown in Figs. 9 and 10 are also intended for use in a shoe of the cemented type, as illustrated in Figs. 1 and 6. As shown in Fig. 9 this inner sole comprises a forward section 15b comprising a curved strip or rand piece and a shank piece 16b which is or may be the same as the shank piece designated by the reference character 16a in Figs. 7 and 8. Said inner sole sec-

tions 15b and 16b are arranged in overlapping relation and are thus secured by a suitable adhesive and also by stitching 18b. As shown in Fig. 10 an additional thin sheet 20 of soft leather is superposed on the rand piece 15b and extends from one marginal edge portion to the other. Said thin sheet of leather 20 may be secured to said rand piece by a suitable adhesive so as to remain permanently in the shoe or may be secured temporarily to said rand piece and subsequently removed from the shoe.

While I have shown the preferred embodiments of my invention, it will be understood that changes in the construction and arrangement of parts may be made without departing from the invention as defined by the appended claims.

Having thus described the invention, what I claim is:

1. An inner sole for a shoe comprising a section of relatively thin flexible leather having heel, shank, and forward portions, and a superposed section of relatively thick and stiff leather overlying said heel and shank portions for the full width thereof and terminating at its forward edge at the ball line and merged into the plane of said forward section, and a transverse line of stitching securing the forward edge of said superposed section to the forward portion of said first mentioned section.

2. An inner sole for a shoe comprising a section of relatively thin flexible leather having heel, shank, and forward portions, a superposed section of relatively thick and stiff leather overlying and cemented to said heel and shank portions and terminating at its forward edge at the ball line and merged into the plane of said forward section, a transverse line of stitching securing the forward edge of said superposed section to the forward portion of said first mentioned section, and a longitudinal median line of stitching through said two sections.

CHARLES MILLER.