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Atty.
This invention relates generally to shoe protectors and more particularly to a molded shoe protector designed to minimize or prevent wearing of the vamps of shoes for infants.

A need exists for an attachment to protect the vamp of an infant's shoe from abrasion and marking resulting from scraping of the leather of the vamp of an infant's shoe. As is well known, an infant's shoe is ordinarily discarded because the toe portion of the vamp becomes so scratched and scuffed by the child's crawling as to be unusable, even though the shoe is otherwise satisfactory. It is evident, therefore, that a satisfactorily protected infant's shoe would extend the useful life of such a shoe. In addition, the need for the periodic application of shoe polish would be minimized, so that savings in time and expense would be attained and the well-known proclivity of infants to bite objects would be of little concern to a parent insofar as the infant's shoe is concerned.

It is necessary that a satisfactory protector for an infant's shoe be lightweight and flexible so as not to interfere with scientifically correct shoe designs, provide for adequate ventilation to prevent overheating of the wearer's foot, and be easy for an adult to apply, yet difficult for an infant to remove. In addition, it is necessary that a satisfactory protector be adapted to low cost manufacturing methods, as molding, and that a single size of protector be adapted to use on either the right or left shoe. Finally, it is also necessary that a single size of protector be adapted to use with shoes of different sizes in order to attain the full advantages of mass production methods.

Many kinds of shoe protectors are known in the art. For example, the patent to De Luca, U.S. Patent No. 1,548,025, shows a shoe protector made from at least two pieces of stiff leather covering the toe section of a hard-toe shoe; the patents to Vintzant, U.S. Patent No. 1,582,323, and Strauss, U.S. Patent No. 1,952,294, show species of attachments to convert ordinary shoes into safety shoes for use in industry, and the patents to Stahl, U.S. Patent No. 1,726,198 and Hyde et al., U.S. Patent No. 2,661,547 show attachments which modify or improve shoes used in various sports. None of such known protectors or attachments, however, are well adapted to the protection of infants' shoes, primarily because each is so stiff and unadjustable as to be of no practical use in protecting the soft and pliable leather of infants' shoes without interfering with scientifically correct shoe designs. In addition, no one, or combination of the cited references fulfills all the other requirements for a satisfactory protector mentioned hereinafore.

Even the shoe protector described in my application Ser. No. 776,899, filed November 28, 1958 (now abandoned), fails to meet all the listed requirements for a satisfactory protector for an infant's shoe. While a shoe protector made in accordance with the teachings of my previously filed application is superior to any other protectors for the particular purpose of covering the vamp of an infant's shoe, experience has proven that specific structural features are the cause of such a shoe protector failing to meet all the requirements for a satisfactory shoe protector. For example, the required thickening of the vamp portion of my old protector interfered, to an appreciable degree, with scientifically correct shoe designs for the reasons that such thickening made flxure of the protector difficult and decreased ventilation of the toe section of the protected shoe. In addition, the requirement that the protector be laced to a shoe made use of the protector difficult for even an adult.

Therefore, it is a primary object of my invention to provide a protector for an infant's shoe which would prevent abrasion and scratching of the upper, or vamp, of such a shoe without interfering with a scientifically correct shoe design.

Still another object of my invention is to provide a protector for an infant's shoe which is adapted to mass manufacturing methods, as molding.

A still further object of my invention is to provide a protector for an infant's shoe which is adapted, without change, to use with any such shoe within a broad range of sizes, whether a right or left shoe is to be protected.

In the accomplishment of these and other objects of my invention, I employ a flexible one-piece molded protector consisting of a vamp portion and a sole portion shaped to cover the front portion of the vamp and upper sole of an infant's shoe. A groove is formed on the inside of the protector to accommodate the edge portion of the outer sole of the shoe to allow the fit between the vamp portion of the protector and the vamp of the shoe to be made almost independently of the fit between the outer sole of the shoe and the protector. The vamp portion of the protector may extend back over the lowermost pair of lacing eyelets of the shoe, there being two holes formed in the protector to register with such lacing eyelets. The protector may then be attached to a shoe by putting the shoeless through both the lowermost pair of lacing eyelets and the corresponding holes in the protector whereby the main force acting to hold the protector in position (namely the frictional forces between the shoe and substantially all the inside area of the protector) may be supplemented when desired by lacing the protector to the shoe.

Finally, I ensure both flexibility of the protector and ventilation of the shoe by forming a number of openings, in addition to the holes registering with the lacing eyelets, through the vamp portion of the protector.

These and other objects and features of my invention will, I believe, be understood from the following description of a preferred embodiment thereof, selected for purposes of illustration and shown in the accompanying drawing in which:

FIG. 1 is an isometric view, partially broken away, of a shoe protector according to the invention in place on an infant's shoe; and

FIG. 2 is a cross-sectional view of the protector shown in FIG. 1 taken by passing the plane 2-2 therethrough as indicated in FIG. 1.

It will be observed that an embodiment of my invention comprises a protector having a sole portion 10 to cover a toe portion of the stiff outer sole 13 of a shoe 12 and a vamp portion 14 to cover the toe portion of the soft vamp 15 of the shoe 12. The vamp portion 14 extends back over the vamp 15 of the shoe 12, preferably so as to cover the lowermost pair of eyelets 16 of the shoe 12. A pair of openings 18 is formed through the vamp portion 14 to match the lowermost pair of lacing eyelets 16. Thus, when a shoeless 20 is passed through the openings 18 and the lacing eyelets 16, the protector may be positively secured in position on the shoe 12. However, positioning of the protector on the shoe 12 is effected mainly by friction between the two. For this reason a groove 22 is formed at junction of the
vamp portion 14 and the sole portion 10 of the protector to accommodate the edge of the outer sole 13 of the shoe 12 to maximize the contact area between the shoe 12 and the protector. In addition, the vamp portion 14 is perforated, as indicated by the numerals 24, 26, 28 to render the vamp portion 14 capable of conforming with the contour of the vamp 15. Consequently, when the protector is molded from a flexible material, in rubber, the outer sole 13 slides snugly into the groove 22 and the vamp portion 14 of the protector fits smoothly over the vamp 15 of the shoe 12. It has been found that, when the protector is made as just described, the frictional engagement between the protector and the shoe is sufficient to maintain the protector in position. At the same time, the greater flexibility of the vamp 14, resulting from the presence of the perforations therein avoids any interference by the protector with the proper and desired flexure of the shoe.

It should be noted here that the openings 24, 26, and 28 also serve to ventilate the shoe 12. For this reason the protector may be used without danger of overheating the wearer's foot. Further, it should be noted that neither the shape nor the disposition of the openings 24, 26, 28 is critical to the invention, it being necessary only that the openings be of such size, shape and number to provide a vamp portion for the protector which is more flexible than the sole portion thereof and which is pervious to air, yet still provides adequate protection from abrasion.

It should also be noted that one size of protector if made from an elastic material according to my invention as just described, may be used to protect different sizes and shapes of shoes. That is, a molded protector made according to the invention may be used with either a left or a right shoe or with shoes of different sizes within the range of sizes of infants' shoes, since the contoured protector automatically adjusts its shape to correspond with any underlying shoe. This feature, obviously, is essential to the economical production of my protector since only one mold is required, regardless of the exact size or shape of the shoe to be protected.

One obvious modification to the structure just described will be apparent to those having skill in the art. That is, the inside surface of the protector may be stippled, or otherwise roughened, to increase the frictional forces between a protector and the shoe being protected.

Another equally obvious modification to the invention is to form a tongue extending outwardly and backwardly from the vamp portion of the protector to cover all, or almost all, of the lacing eyelets of the shoe so that the shoelacing need not be completely removed when the protector is to be affixed to or removed from the shoe.

Having thus described and disclosed a preferred embodiment of my invention and modifications thereof, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A protector for an infant's shoe having a stiff outer sole, said protector including a rigid sole portion and a flexible vamp portion defining a hollow open-ended body complementary to the toe portion of an infant's shoe, the area adjacent the junction of the sole portion and the vamp portion having a groove formed therein to accommodate and frictionally engage the outer edge of the stiff outer sole, the inner surface of said vamp portion having a stippled surface, said protector being elastic with its inside dimensions being smaller than the toe portion of the infant's shoe, whereby said hollow open-ended body may be fitted into close frictional engagement with said toe portion.

2. A protector as in claim 1, wherein a plurality of openings extend through the walls of said vamp portion, at least two of said openings being adapted to receive a shoelace whereby said protector may be affixed to said infant's shoe.

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