May 15, 1956 H. F. SCHNEIDER ET AL 2,745,196

SHOE CONSTRUCTION

Filed Oct. 30, 1951



FIG. 1

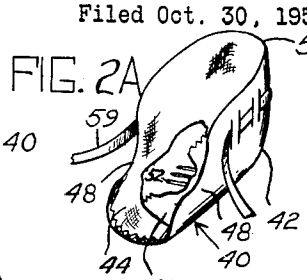


FIG. 2A

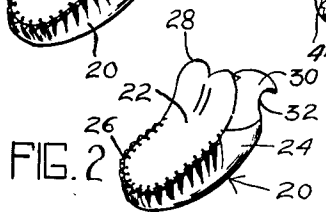


FIG. 2

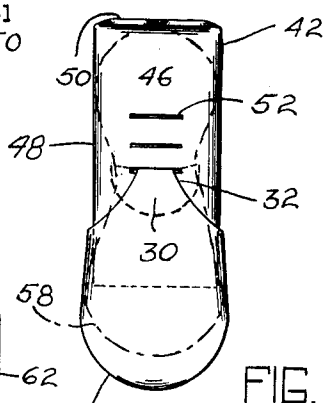


FIG. 3

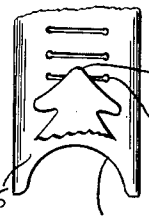


FIG. 4

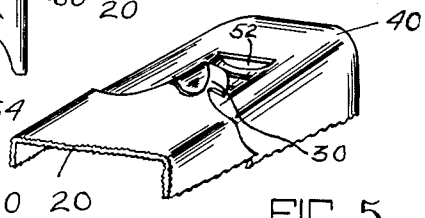


FIG. 5

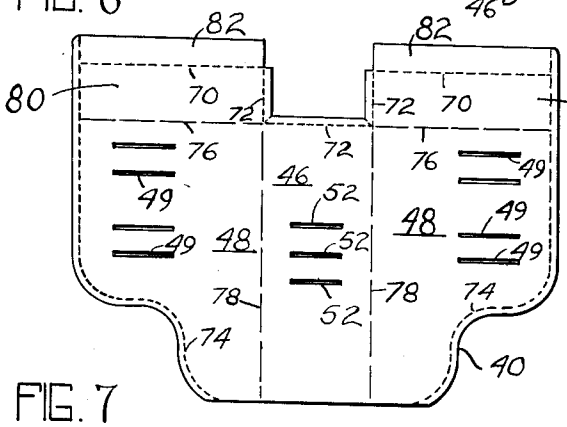


FIG. 6

FIG. 7

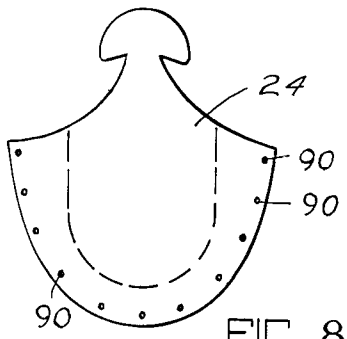
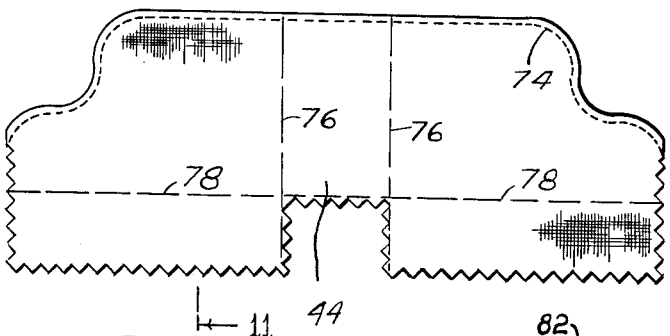


FIG. 8



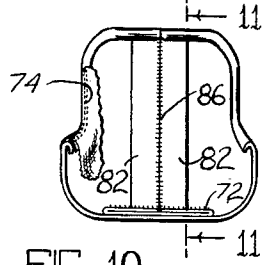


FIG. 10

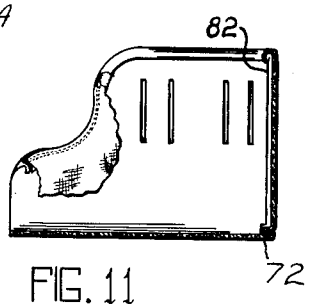


FIG. 11

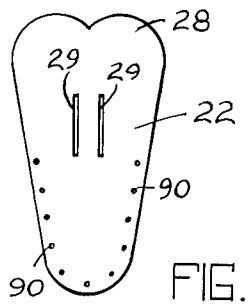


FIG. 9

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SHOE CONSTRUCTION

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4 Claims. (Cl. 36—2.5)

This invention relates to shoes for children, particularly infants, whose feet outgrow shoes before the shoes are worn out.

Among the objects of the present invention is the provision of a child's shoe than can be worn over a relatively long period of time during which the child's feet are rapidly growing larger.

Further objects of the invention include children's shoes that can be adjusted in size to fit feet of varying size as well as to compensate during their usable life for the growth of the feet upon which they are fitted, and which shoes are not uncomfortable to wear and use by reason of their adjustable features and at the same time are inexpensive to manufacture.

The above as well as additional objects of the invention will be more completely understood by the following descriptions of exemplifications thereof, reference being made to the accompanying drawings wherein:

Fig. 1 is a perspective view of one form of shoe exemplifying the invention;

Figs. 2 and 2A are similar perspective views of the shoe of Fig. 1, separated into its two detachable sections, parts of Fig. 2A being broken away to show a detail of the detachable construction;

Fig. 3 is a view of the bottom of the shoe of Fig. 1, looking from below, and showing in dot-dash outline a sole-shaped supporting insert;

Fig. 4 is a fragmentary view similar to Fig. 3 of a modified form of detachable construction;

Fig. 5 is a perspective detail view of one method of assembling the shoe sections to complete the shoe of Fig. 1;

Figs. 6, 7, 8 and 9 are plan views of individual fabric blanks that can be assembled to make the shoe of Fig. 1;

Fig. 10 is an elevational view looking into the heel-receiving section of a shoe exemplifying the present invention, with a lining partially broken away to show the back seam construction; and

Fig. 11 is a sectional view of Fig. 10, taken along the line 11—11.

According to the present invention, a very practical and sturdy shoe having a good appearance can be made to adjustably fit infants' feet of varying size by forming the shoe of detachable front and rear fabric sections adjustably held together by interlocking portions of their fabric. Such a shoe may be provided with a stiff sole-shaped insert, and with or without this insert it is free of all hard fastening elements or other protuberances that might make it uncomfortable. The shoe can advantageously also have a rear seam construction that does not expose stitched-together edges to contact with the child's foot.

Referring to the illustrated forms of the invention, Fig. 1 shows a completely assembled bootee having a front or toe-receiving section 20 and a separate rear or heel-receiving section 40. The front section, which is shown detached in Fig. 2, is composed of a fabric such as leather, leatherette, plastic, felt or the like, and may be formed

from two strips, an upper one 22 and a lower or sole strip 24. These strips are secured together as by stitching 26 to hold them in the desired hollow shape.

The rear section 40 in the construction shown (see Fig. 2A) is composed of an external fabric member 42, preferably but not necessarily matching or identical with either or both of the front strips 22, 24, and an internal lining 44 secured to the member. This fabric member 42 can be shaped in any desired manner, as for example by folding and sewing a single properly cut sheet of the fabric so that it forms a sole portion or lower wall 46, side walls 48 and a rear wall 50.

The lower wall 46 in the above construction is provided with detachable and adjustable interlocking means shown as a set of slots 52 extending transversely of the bootee. The corresponding wall of the forward section 20 is provided with cooperating interlocking means shown as an arrowhead-shaped extension 30 connected by a narrow neck 32 as an integral part of one of the front strips. The neck has a width small enough to be received in any of the slots 52.

The two bootee sections are held together by hooking the arrowhead extension 30 through one of the slots 52. In addition the extension 30 after insertion through a slot can be folded back in superposed relation with respect to neck 32, as indicated in Fig. 3, to improve the interlocking engagement. Where this extra folding is not practiced, it is advisable that the arrowhead at its widest portion be wider than the slot to provide effective interlocking. Atlhough this greater width is not absolutely necessary when the arrowhead is folded back, it is helpful inasmuch as the folded-over head may unintentionally become unfolded during use, and without the added width the bootee sections may then come apart.

Fig. 5 shows an effective technique for interlocking the section. The sections are first brought together in mating relation so that the arrowhead 30 is adjacent a slot 52, as indicated. One of the lobes of the arrowhead is then doubled over as illustrated in Fig. 5 to make it narrow enough to fit through a slot. The narrowed arrowhead is then pushed through one of the slots, the fabric at the near side of the slot being deflected inwardly for the purpose of widening the passageway provided by the slot. After the insertion, the bent-over lobe is returned to its extended position, effectively locking the sections together. The entire arrowhead can then be folded back as indicated above to complete the operation if desired. To disengage the section, as for example when the bootee size is to be changed, the above steps are merely reversed.

Instead of having the interlock slots in the form of plain slots 52, they can be modified in shape in substantially any desired manner so long as they provide anchorage for the arrowhead. Thus the slots can be widened over their entire length or at selected portions, particularly if it is desired to simplify the interlocking operation. Enlargement of the slot ends as shown at 60 in Fig. 4, for example, is also helpful in increasing the tear resistance of the lower wall 46 against pulling forces, applied by the front section 20, through the interlocking connection. It will be clear that the slots define strap-like portions of this wall, and that these strap-like portions are the engagement members with which the arrowhead interlocks.

Other structural modifications in accordance with the present invention include the provision of a definite tapered point 62 on the outer end of the arrowhead to make it somewhat easier to push through a slot, as well as a cutting away of the lower wall 46 at its front end, as indicated at 64 in Fig. 4, to reduce the sole thicknesses in the forward portions of the bootee.

Figs. 6, 7, 8 and 9 show fabric blanks that are particularly suited to make the shoe illustrated in Fig. 1 above. Fig. 6 shows the blank for the heel-receiving section **40**, and illustrates the slots **52** as well as stitching lines **70**, **72** and **74** which are used in converting the blank to the final section. According to the present invention the blank is folded up along lines marked at **78** to form a lower wall **46** and side walls **48**, and then the rearward extensions **80** of walls **48** are folded inwards along lines indicated at **76** to form a scoop-shaped unit as shown in Figs. 2A and 10. Extensions **80** are then stitched together along stitching lines **70** to form a simple seam with marginal flaps **82** bent together inwardly. This seam is shown more clearly at **86** in Fig. 10. At the completion of this operation the stitching lines **72** of extensions **80** are superimposed over the corresponding stitching line **72** of lower wall **46**. A row of stitching is then applied along these lines, while the flaps **82** are held in the folded position indicated in Fig. 10.

The lining blank **44** shown in Fig. 7 can then be fastened in place as by placing it against the heel-receiving unit with its stitching line **74** over the corresponding line **74** of the shaped blank **40**, and sewing the parts together at these stitching lines. The lining folds at lines **76**, **78** to fit within the heel-receiving section as shown more clearly in Fig. 2A. During the stitching of the lining, the upper ends of marginal flaps **82** are held folded back flat against the heel of section **40** so that in the completed article they are sewn in this position and the portion of the bootee contacting the back of the baby's foot has a soft, resilient doubled-over reinforcement which presents no discomfort whatsoever.

It should be noted that the above assembling technique is very conveniently performed with the blank **40** folded inside out. This has the further advantage in that when the stitching is completed the article is turned outside out and all the stitching and seam edges will then be hidden.

Figs. 8 and 9 show the blanks for the lower and upper portions **24** and **22** respectively of the toe-receiving section of the shoe of Fig. 1. In this particular form of the invention these blanks are provided with sets of gathering perforations **90**, the perforations on blank **24** being farther apart than corresponding perforations on blank **22**. These members are assembled by looping a relatively heavy thread or cord through a corresponding pair of openings **90**, pulling the loop tight, and then going to the successive pair of perforations and repeating the operation. By holding the loops tight while permitting the thread to extend freely between the successive pair of openings the marginal fabric of blank **24** between the widely spaced loops will be drawn together into a plurality of gathers as indicated in Figs. 1 and 2. An ordinary button-hole stitch type of sewing can be used for this purpose.

The bootee of the present invention need not be made in the manner described above. Thus for example the toe-receiving section can be constructed along any other different style as desired. In fact, this section **20** can be made of a single fabric element, as by felting it directly onto its final form with the interlocking arrowhead **30** either preformed as part of the felting operation or subsequently formed by cutting out suitable portions of the felted unit.

The bootee shown in the drawings is provided with additional fastening means to hold the front and rear sections together at the top of the shoe. For this purpose the upper wall **22** includes a tongue-like projection **28** which is provided with a pair of slits **29**, and suitable slits **49** are cut in the side walls of the rear section. Through these slits is threaded a ribbon **59**, the ends of which can be tied together outside the tongue **28**, as indicated in Fig. 1 to securely hold the shoe in place on the foot. Other types of fastening means can also be used, however, or the separate fastening can be entirely omitted.

A feature of the present invention is the fact that the bootee can very readily be fitted over the feet of babies who are not in a position to cooperate. Thus the assembled shoe with the upper fastening means undone can be readily folded open at the interlock between sections, and slipped over feet that have their toes clenched down and held clenched in this position, a type of muscular action frequently indulged in by babies. After the folded open sections are placed around the feet, the upper fastening means can then be fastened in place with or without waiting for the toes to unclench. With the conventional type of baby's footwear such toe clenching generally makes the forward part of the foot too thick to fit into the normal foot-receiving opening.

In some cases where the fabric used to form the shoe is relatively limp, it is particularly effective to insert a relatively stiff sole-shaped form **58** inside the shoe. This not only provides a more durable sole construction, but in addition assists in keeping the limp shoe sections from bending open at their interlocking connection. The form can be of wet-felted fibrous construction like fiberboard, preferably containing moisture-proofing and/or flexibilizing ingredients or binders. If desired, a nap of soft pile can be secured as by cementing to the top of the form. Other materials, such as plastics, particularly of the artificial leather kind, can also be used to make the forms.

The lining **44** need not be fastened down except at the stitching line **74**. It is perferable that the lining have unfastened edges and has these edges pinked, as indicated in Fig. 7. However, the lining can have portions cemented or stitched in place if desired. In any event, any further stitching or cementing of the lining should not interfere with the fastening or unfastening of the separate sections. If desired, the lining can be completely omitted, in which case the upper edge of the shoe fabric can be left plain or stitched over along an outwardly folded margin. Where used the lining can advantageously be water-repellant material such as suitably treated cellulose acetate or a regenerated cellulose textile. Super-polyamide textiles (nylon) are particularly effective, since they dry very readily when wet, and thereby simplify the washing of the shoe when this becomes necessary. This washing is further simplified by having the body of the shoe made of leather or plastic materials, although a felt containing 20% or more of super-polyamide fibers can also be readily laundered and is accordingly useful as a shoe body material.

Instead of having the front section of the shoe fit around the forward portions of the rear section, as shown in Figs. 1 and 3 for example the rear section can be fitted around the front section. Furthermore, the interlocking elements between the sections can be provided on one or both side walls either with or without corresponding interlocking at the sole portions. In addition, instead of merely holding the end of the interlock **30** by passing it through a single slot **52**, it can be passed through two slots so that it projects out on the same side of the floor **46** as the front strip **24**, of which end **32** is an extension.

The shoes of the present invention need not be made as separate left and right assemblies, although this can be done by using a common heel-receiving section with differently shaped toe-receiving sections. However, where a separate sole-shaped insert **58** is used, these inserts are conveniently made in left and right pairs and used with identical shoes to tend to hold them in the shape of left and right pairs. In fact, a reversible sole-shaped form **58** having a uniform shape, as for example that of a right foot, can be employed exclusively and merely turned upside down so as to then provide a left insert.

As many apparently widely different embodiments of this invention may be made without departing from the spirit and the scope hereof, it is to be understood that the invention is not limited to the specific embodiments disclosed above except as defined in the appended claims.

What is claimed is:

1. An infant's bootee comprising a soft front section detachable from a soft heelless rear section each constituting about half the bootee, each of said sections having a sole portion, the sole portion of one section having an integral soft foldable extension projecting out into overlapping relation with the sole portion of the other section, fastener means formed from said extension, and a plurality of separate complementary fastener means formed from the other overlapping member, said first fastener means upon folding being engageable with said second fastener means to interlock with said second fastener means so that said first fastener means can be selectively fastened in a plurality of positions to provide adjustable bootee lengths for fitting the bootee to the growing feet of infants at least until they reach the size at which infants normally begin to walk and wear out their footgear.

2. The combination of claim 1 in which each bootee section has side wall portions integral with its sole portion.

3. The combination of claim 1 in which the first fastener means is an arrowhead-shaped sole segment and the

second fastener means is a series of longitudinally spaced straps whose ends are connected to the main body of said other sole portion, said straps being shorter than the head of said segment but longer than the neck of said segment.

4. The combination of claim 1 together with a stiff sole-shaped form inserted in the bootee over the overlapping sole portions.

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