Nov. 18, 1958 W. C. JACKSON 2,860,425

RUBBER OVERSHOE

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Fig. 1.

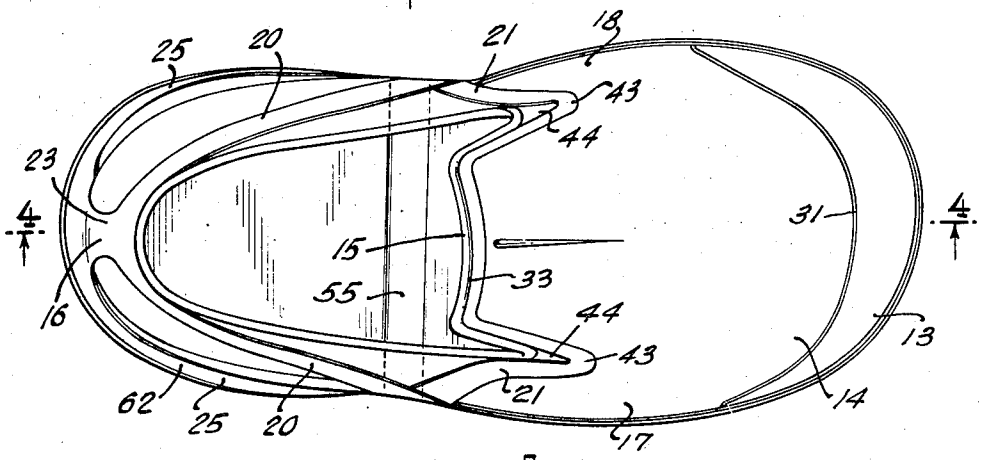


Fig. 2.

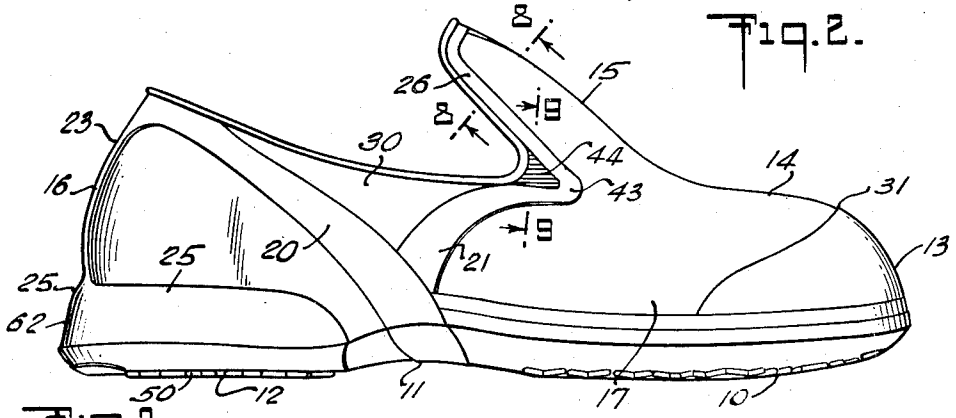
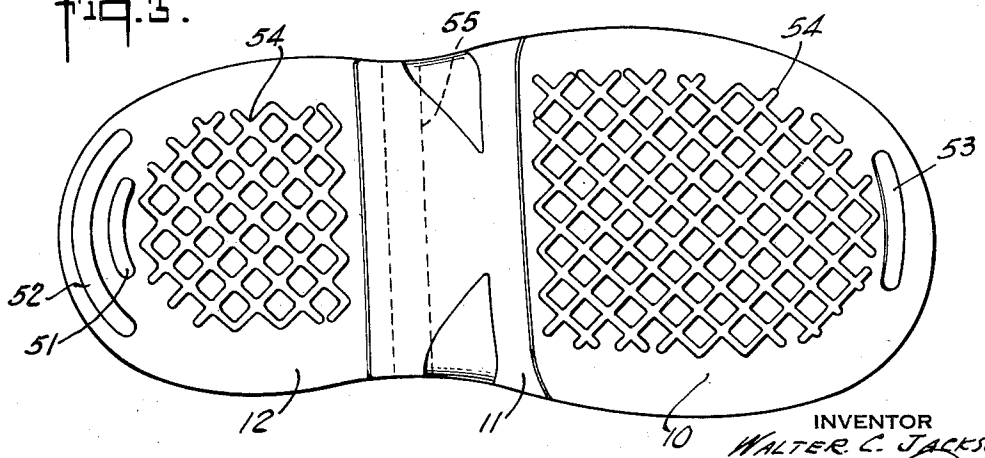


Fig. 3.



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Fig. 4.

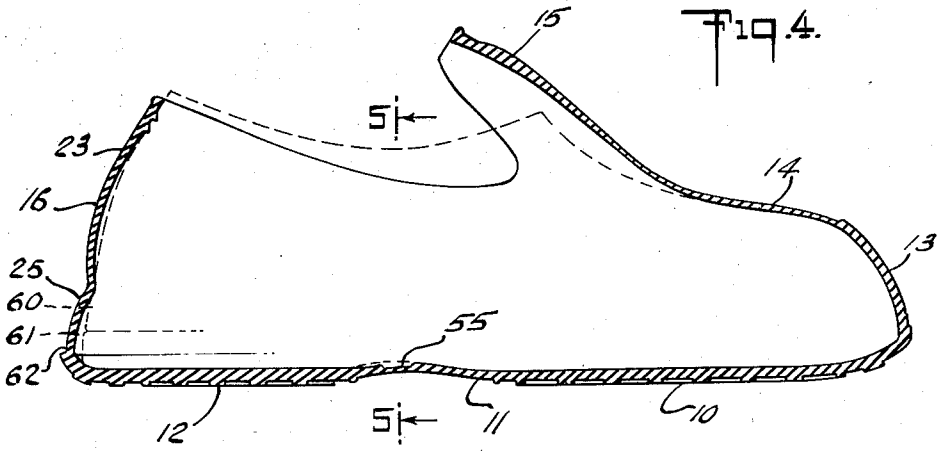


Fig. 5.

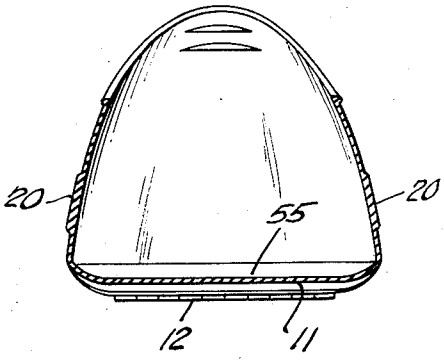


Fig. 6.

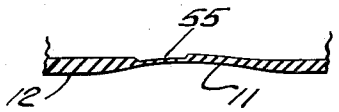


Fig. 7.

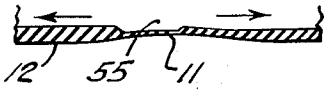


Fig. 8.

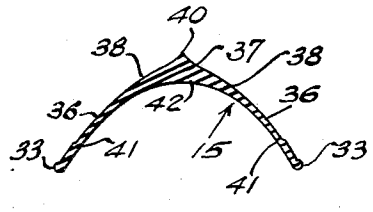
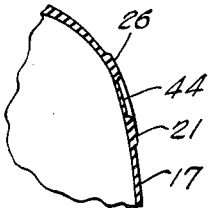


Fig. 9.



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2,860,425

RUBBER OVERSHOE

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Application June 17, 1955, Serial No. 516,183

3 Claims. (Cl. 36—7.3)

The present invention relates to an improvement in overshoes, and particularly to that type of overshoe made entirely of elastic material, such as natural or synthetic rubber.

In U. S. Patent No. 2,617,209, there is disclosed an overshoe, which is made entirely of one piece of elastic material such as rubber, and which is designed to enable an overshoe of one size to be stretched both lengthwise and sidewise to fit properly over inner shoes of different sizes within a definite prescribed range. This overshoe was designed to fit an inner shoe with a heel of substantial height, and for that purpose had a prominent heel receiving socket with front and rear upstanding walls serving to engage for anchorage either the rear face or the breast face of the heel of the inner shoe depending on the size of the inner shoe. This type of overshoe affords effective hold of the overshoe upon an inner shoe within the prescribed size range but is useful mainly in connection with an inner shoe having a heel of substantial height. There is a type of inner shoe, which has no distinct heel but has a low heel or has a sole, a shank and a heel conjointly presenting a substantially flat continuous bottom surface. Children's shoes are, for example, of this type, and such shoes do not lend themselves to use in connection with a rubber overshoe of the heel socket type described above.

One object of the present invention is to provide a new and improved overshoe, which is designed to fit properly over inner shoes of different sizes within a prescribed range and which is of the type in which the heel, if any, is not prominent enough to project down to any substantial depth.

In the aforesaid patent and in U. S. Patent No. 2,254,685, the upper part of the shoe, which is made entirely of elastic material, such as rubber, is provided with tension and reinforcing strips, gussets and instep tongues, designed to permit the overshoe to fit properly over inner shoes of different sizes within the prescribed range.

Another object of the present invention is to provide an overshoe of the improved type described, which although designed to accommodate inner shoes of the low or flat heel type, still permits retention of the features of the upper part of the overshoe disclosed in the aforesaid patents.

In any overshoe, the sole and heel parts are subjected to the greatest wear due to walking, while the shank part therebetween, being set upwardly to accommodate the arched shank in the inner shoe, receives much less wear. Also, as a person walks, the sole and heel parts of the overshoe tend to remain substantially flat, while the shank part bends with the bending of the foot.

The present invention takes these factors into consideration in incorporating, in the overshoe, features by which the overshoe may be made to fit properly over inner shoes of the low or flat heel type and of different sizes within the prescribed range. To that end, the overshoe is made entirely of one piece of elastic material, such as rubber, and the shank part of the overshoe near

the heel part is provided on its inner face with a channel extending crosswise of the shoe and serving to thin out the shank part along said channel. The overshoe so constructed can be stretched lengthwise to fit the inner shoe, the overshoe yielding elastically across the channel to fit snugly the inner shoe. The overshoe is constructed, designed and dimensioned to fit snugly over an inner shoe of minimum size with little or no stretching of the shank part of the overshoe across the channel thereon, and to stretch lengthwise and across said channel to a progressively increasing extent with inner shoes of larger sizes within the prescribed range. The size of the overshoe is such, in relation to the sizes of the inner shoes it is designed to fit, that the channel in the shank part of the overshoe will stretch to the maximum degree allowable without stressing said channel to the extent of materially shortening the life of the overshoe, without rendering the overshoe uncomfortable to wear and without making it difficult to pull the overshoe on and off the inner shoe.

Since the overshoe is thinned out in its shank part where there is a minimum of walking wear, while the parts requiring strength and body for wear are not affected, the life of the overshoe is not materially impaired. Moreover, the thinned-out part of the overshoe is near the region where the overshoe usually bends with the foot in the process of walking, so that the channel in said region forms a hinge by which such bending is facilitated, thereby affording greater walking ease.

The channel can be provided in the shank part of the overshoe during manufacture without employing any special step, by merely molding the overshoe with the channel formed therein.

Various other objects, features and advantages of the invention are apparent from the following description and from the accompanying drawings, in which

Fig. 1 is a top plan view of an overshoe made in accordance with the present invention;

Fig. 2 is an elevation of one side of the overshoe;

Fig. 3 is a bottom plan view of the overshoe;

Fig. 4 is a longitudinal section of the overshoe taken along lines **4—4** of Fig. 1;

Fig. 5 is a transverse section of the overshoe taken along the lines **5—5** of Fig. 4;

Fig. 6 is a detail section of the shank part of the overshoe across the thinned-out channel section, before the overshoe has been stretched to fit over an inner shoe;

Fig. 7 is a detail section of the shank part of the overshoe similar to that of Fig. 6 but shown while the overshoe is stretched to fit an inner shoe of the larger size within the prescribed range;

Fig. 8 is a detail section of the instep tongue of the overshoe taken along lines **8—8** of Fig. 2; and

Fig. 9 is a detail section of the overshoe taken along lines **9—9** of Fig. 2.

Referring to the drawings, the overshoe of the present invention (shown of the storm type) is free of fabric reinforcements and is made of one piece of elastic material, preferably vulcanized rubber (natural or synthetic), elastic enough to permit it to stretch to such an extent that one size of overshoe will fit several different sizes of inner shoes within a prescribed range. The overshoe is shown of the type adapted to fit children's inner shoes in which the heel is very low or flat. Four different sizes of overshoe may be provided to take care of all juvenile sizes of inner shoes from 6½ to 12½. For example, the first size of overshoe may be designed to fit juvenile inner shoes from 6½ to 8; the second size of overshoe may be designed to fit juvenile inner shoes from 8 to 9½; the third size of overshoe may be designed to fit juvenile inner shoes from 9½ to 11; and the fourth size of overshoe may be designed to fit juvenile inner shoes from 11 to

12½. These size ranges are illustrative only and may differ according to the last.

The overshoe shown in the drawings comprises at the lower base part a sole **10**, a shank **11** and a heel **12** and at the upper part a toe **13**, a vamp **14**, an instep tongue **15** and a counter **16** connected to said toe and said vamp by sides **17** and **18**.

When the overshoe is stretched over the inner shoe, the side edges of said overshoe tend to distend in a straight line between the extreme side points of the toe and counter of the inner shoe, leaving openings between the side walls **17** and **18** of the overshoe and the corresponding side walls of the inner shoe, especially in the region of the shank or arch. These openings afford access to water, rain or snow, so that the overshoe does not perform properly its intended function.

On the other hand, if the overshoe is of such size that its upper is not stretched enough to pull its side walls away from the corresponding side walls of the inner shoe, these side walls of the overshoe, nevertheless, buckle down or pucker outwardly away from the side walls of the inner shoe when the latter bends as the weight is shifted from the heel to the toe in walking. The result is that the overshoe does not fully protect the inner shoe against the elements of inclement weather.

To overcome these disadvantages, the overshoe is provided with tension strips **20** and **21** formed by the thickening up of the web from which the overshoe is made and diverging from opposite sides of the shank **11** up the sides **17** and **18** of the overshoe. The tension strip **20** extends from one side of the shank **11** rearwardly and upwardly along one side **17** of the overshoe, runs around the top margin of the counter **16** and extends downwardly and forwardly towards the other side of said shank on the opposite side **18** of the overshoe. At its rearmost portion, the counter **16** is formed with a thickened reinforcing strip **23**, merging with the tension strip **20** at the top of the counter and extending vertically downwardly therefrom.

At its base, the counter **16** is formed at each side with a thickened reinforcing strip **25**, rising from the heel **12** and extending rearwardly to merge with the vertical reinforcing strip **23**.

The tension strip **21** extends from one side of the shank **11** forwardly and upwardly along one side **17** of the overshoe towards the base of the tongue **15**, and acutely turns near this base, to merge into a thickened binding strip **26** running around the margin of said tongue to the opposite side **18** of the overshoe. At this opposite side **18**, the binding strip **26** acutely turns near the base of the tongue **15** to merge with the tension strip **21** on said side of the overshoe. The tension strip **21** on this side **18** of the overshoe extends downwardly and rearwardly to the corresponding side of the shank **11**.

The shank **11** is thickened at its opposite sides and these thickened areas serve as anchorages for the ends of the tension strips **20** and **21**. These tension strips **20** and **21** have their ends extending in overlapping relation where they anchor to the shank **11**. The tension strip **20** is comparatively thick at its anchorage in the shank **11** and decreases in thickness until it merges into the rear reinforcing strip **23**.

Where the tension strips **20** and **21** diverge from the shank **11** on each side of the overshoe, they define a substantially triangular section **30**, which is thinner than the web at the tension strip sections and which, therefore, is more readily stretchable than said latter sections, permitting thereby the mouth margin of the overshoe to expand readily when applied to inner shoes of different sizes within the allowable range, and aiding in contracting said mouth margin on the inner shoe when in use. By increasing the thickness along the top edge of the triangular section **30**, this top section will hug the inner shoe tighter.

The toe **13** has extra reinforcement **31**, which not only adds to the ornamental appearance of the overshoe, but provides a greater thickness of material affording protection against scuffing and wear in those overshoe regions subjected to heavy duty. This toe reinforcement **31** also serves to maintain the toe **13** against collapse when the overshoe is not in use.

The tension strips **20** and **21**, being adapted to stretch when the overshoe is applied, offer greater resistance to stretch in the localized areas of these strips and are, therefore, placed under greater tension, thereby hugging closely the sides of the inner shoe.

The reinforcing strip **23** at the rear of the counter **16** serves to prevent said counter from curling when the overshoe is not in use, and the reinforcing strips **25** at the base and sides of said counter provide for greater wear in these regions of the counter, add to the ornamental appearance of the overshoe, and cooperate with the rear counter strip **23** to prevent said counter from curling when not in use.

The tongue **15** is constructed to maintain its shape against curling, to flex and yield easily when the overshoe is applied to an inner shoe and to hug closely and protectively the instep of the inner shoe when said overshoe is applied to said inner shoe. To that end, the tongue **15** has its thickness gradually increasing throughout its width from its base upwardly towards its free end, as shown in Fig. 4, so that when the overshoe is not in use, said tongue will maintain its fully extended shape, and so that when the overshoe is being applied, the tongue can be freely bent forwardly about its base to permit the inner shoe to enter easily into the overshoe. After the inner shoe has been inserted into the overshoe, the tongue will snap back into its correct fully extended position. Moreover, by not thickening the base of the tongue **15**, the vamp **14** of the overshoe is made more easily stretchable to fit snugly over inner shoes of different sizes within the prescribed range.

The binding strip **26** around the tongue **15** not only adds to the ornamental appearance of the overshoe, but also aids in imparting form sustaining rigidity to said tongue when not in use, without materially resisting the bending of said tongue forwardly in the process of applying said overshoe and, in addition, affords reinforcement against tear. A bead **33** around the mouth margin of the overshoe and around the edge of the tongue **15** assists in this latter function, besides enhancing the ornamental appearance of the overshoe.

The tongue **15** is shaped with its sides **36** extending at a general angle with each other smaller than the general angle between the sides of the instep of the inner shoes to which the overshoe is adapted to fit. To maintain such angularity between the sides of the tongue **15**, the thickness of the longitudinal medial region **37** of the tongue along its length from the free end thereof to a region short of its base is greater than that of its sides **36**, this thickness tapering from said medial region sideways to regions between said medial region and the side edges **33** of said tongue and then increasing to said side edges. The outer surfaces **38** of the tongue sides **36** converge towards a comparatively sharp apex **40** to set the angularity of said tongue sides, while the inner surfaces **41** of said tongue sides are joined at the medial region **37** of the tongue by a curved surface **42** for close conforming engagement of said tongue with the instep of the inner shoe, when the overshoe is applied thereto.

With the angularity of the sides **36** of the tongue **15** set so acutely with respect to the angularity of the sides of the instep of the inner shoe, when the overshoe is applied to the inner shoe, these tongue sides will spread about the medial region **37** of said tongue, will hug the instep of the inner shoe and will shape themselves to conform therewith.

The medial region **37** of the tongue **15**, thickened as described, serves not only for the purpose indicated, but

also serves as a reinforcing rib to impart form sustaining rigidity to said tongue when not in use.

On each side of the overshoe, where the tension strip **21** and the binding strip **26** merge at the base of the tongue **15**, they form an acute bend **43**, and between the sides or arms of said bend, there is defined a substantially V or triangular section **44** of unthickened web, serving as an elastic gusset, by which said tongue may be easily bent forwardly, and the mouth margin of the overshoe stretched or expanded to fit an inner shoe during the process of applying said overshoe to said inner shoe. These elastic gusset sections **44** also serve to constrict the mouth margin of the overshoe over the inner shoe when said overshoe has been fully applied.

The thickened side arms of each bend **43** flanking the corresponding elastic gusset section **44** act like a V-shaped spring affording resistance to the pull on the tension strip **21** and the thin triangular section **30**. Since molded rubber always tends to return to its molded shape, this characteristic aids the elastic gusset section **44**, especially on small size overshoes, in hugging the inner shoe closely.

The bottom wall **50** of the overshoe heel **12** has a pair of curved ribs **51** and **52** of substantial concentricity, as shown more fully in Fig. 3. The smaller or inner rib **51** is curved to receive the pressure from the rear region of the heel of the smallest inner shoe which the overshoe is designed to accommodate and the larger or outer rib **52** is curved to receive the pressure from the rear region of the heel of the largest inner shoe which the overshoe is designed to accommodate. The wearing or cutting action of the inner shoe heel on the bottom heel wall **50** of the overshoe is thus effectively resisted.

The ribs **51** and **52** serve not only to resist the cutting action of the inner shoe heel thereon, but also serve as reinforcements against ordinary abrasive wear at the regions where such wear is likely to be heaviest. By providing two spaced ribs **51** and **52** instead of a single rib of combined width, the flexibility of the bottom heel wall **50** is maintained. The sole **10** at its forward end is provided with a curved rib **53** to withstand wear at this end of the overshoe. Besides the ribs **51**, **52** and **53**, the bottom of the sole **10** and of the heel **12** is provided with a tread design **54** for anti-skid purposes.

The features of the overshoe so far described, cooperate with the features to be described, in permitting the overshoe to stretch and to accommodate itself comfortably and with a close conforming fit to inner shoes of different sizes within the prescribed range and in maintaining such conforming fit even during walking action.

Since the overshoe is intended to be stretched lengthwise over the inner shoes especially of the larger sizes within the prescribed range, and since the inner shoe has no prominent heel to afford firm anchorage, as in the aforesaid Patent No. 2,617,209, some means must be provided to allow for the stretching of the overshoe lengthwise for the purpose indicated. If the lower part of the overshoe is thinned out along its full length for the purpose, then the resulting reduction in the body of the sole **10** and heel **12**, which are subjected to the greatest wear in the overshoe, will result in the shortening of the life of the overshoe to a substantial extent.

As a feature of the present invention, the thickness of the sole **10** and the heel **12** is not disturbed from that in normal practice, while the shank **11**, which curves upward out of the plane of the sole and heel, to follow the arching of the shank in the inner shoe, and which therefore is subjected to little wear compared to the wear in the sole and heel, has a transverse region thinned out to permit said region to stretch elastically and easily and to cause the overshoe thereby to fit the inner shoes of different sizes within the prescribed range. For that purpose, the shank **11** has on its inner face, near the inner or forward end of the heel **12**, a channel **55**, which is molded in the overshoe in its vulcanization, and which extends across substantially the full width of the shank. This channel **55** is wide enough to afford sufficient elastic material for stretching, without unduly thinning out the material. More specifically, this channel **55** has a base wall of substantially uniform thickness substantially throughout its extent, the thickness of this base wall being substantially less than the thickness of the shank **11** on opposite sides of said channel to cause the overshoe to be easily stretched lengthwise at the lower part mainly across said channel to fit the inner shoes. The width of the channel **55** is less than one-half the length of the shank **11** between the heel **12** and the sole **10** but is great enough to afford substantial stretch area by which the overshoe may be easily stretched lengthwise to fit the largest inner shoe in the prescribed range of inner shoes which the overshoe is adapted to fit, while still affording snug hold on the smallest shoe within said prescribed range. As a specific example, the channel **55** may be about 5/16 inch wide for juvenile overshoes of the type indicated above to accommodate inner shoes from juvenile sizes 6½ to 12½.

The tension strips **20** and **21**, the reinforcing strips **23** and **25** and the instep tongue structure with its gusset sides **44**, serve to cause the overshoe to hug the inner shoe with close conforming fit, especially around the opening of the overshoe, while the channel **55** affords the means by which the overshoe can be stretched lengthwise to accommodate inner shoes of different sizes within the prescribed range, without stretching the parts requiring body and strength for long wear. The different features described thereby cooperate in assuring proper fit of the overshoe on the inner shoes of different sizes within the prescribed range.

The channel **55** is near the forward end of the heel **12** and the tension strip **20** is anchored to the opposite sides of the shank **11** and to the underside of the shank on the forward side of the channel.

In walking, the overshoe bends with the inner shoe and foot, especially about a region of the shank near the inner end of the heel. The channel **55** in the shank of the overshoe near this region, affording a thinned-out section, facilitates bending about this region and thereby adds to the comfort of the overshoe.

The size of the overshoe is such with respect to the size of the inner shoe it is designed to fit, that the overshoe fits the inner shoe of minimum size within the prescribed size range, with little or no stretching of the overshoe lengthwise in the region of the channel **55**. In this minimum condition of stress, the channeled section of the overshoe will be substantially in the form shown in Fig. 6. When the overshoe is applied to larger inner shoes within the prescribed range, the arched section of the shank **11** will straighten out, and the section of the shank in the channel **55** will stretch, as illustrated in Fig. 7. Hence, the lengthening of the overshoe will result partly from the straightening out of the arched part of the shank **11** of the overshoe but it is due primarily to the elastic stretching of the shank **11** of the overshoe in the region of the channel **55**.

In certain types of inner shoes, and especially children's inner shoes, such as the inner shoe **60** shown in dotted lines in Fig. 4, the rim **61** of the heel part of the inner shoe along the sides and the rear projects outwardly beyond the upper part of the inner shoe. To receive this projecting heel part of the inner shoe somewhat snugly, the heel **12** of the overshoe bulges outwardly along the sides and rear to form a peripheral recess **62** into which the projecting part of the heel of the inner shoe can extend. The strip **25** around this heel **12** reinforces the walls of the recess **62** therein. The heel **12** of the overshoe so constructed will retain its form against deformation, even though the channel part of the shank **11** has been stretched to fit the larger inner shoes within the prescribed size range of the overshoe.

While the invention has been described with partic-

ular reference to a specific embodiment, it is to be understood that it is not to be limited thereto, but is to be construed broadly and restricted solely by the scope of the appended claims.

What is claimed is:

1. An overshoe for children's inner shoes of various sizes within a limited prescribed range and of the type in which the heel rim projects along the sides and rear outwardly from the upper part of the inner shoe, said overshoe consisting entirely of one piece of elastic material of uniform composition and having a substantially flat lower part consisting of a sole, a heel and an intervening shank, said heel bulging outward along the sides and rear to form a peripheral recess into which the projecting part of the heel of the inner shoe is adapted to extend with a substantially snug fit, the wall of said recess around the sides and rear having a reinforcing strip on the outside, said shank having a channel extending substantially across its full width and having a width less than half the length of the shank between the heel and the sole, said channel having a base wall of substantially uniform thickness and forming a substantially uniform thinned-out section of the shank affording reduced resistance by which the overshoe can be stretched lengthwise at the lower part mainly along said thinned-out section to fit said inner shoes of various sizes within a limited prescribed range while said heel retains substantially its form, size and shape.

2. An overshoe for inner shoes of various sizes within a limited prescribed range consisting entirely of elastic material of uniform composition and having a lower part consisting of a sole, a heel and an intervening shank, said shank having a channel extending substantially across the full width thereof and having a base wall of substantially uniform thickness substantially throughout its extent, the thickness of said base wall being substantially less than the thickness of the shank on opposite sides of said channel to cause said overshoe to be easily stretched lengthwise at the lower part mainly across said channel to fit said shoes, the width of said channel being less than one-half the length of the shank between the heel and the sole but great enough to afford substantial stretch area by which the overshoe may be easily stretched lengthwise to fit the largest inner shoe in said prescribed range, while still affording snug hold on the smallest inner shoe within said prescribed range.

3. An overshoe as described in claim 2 wherein the overshoe includes an upper part with a counter, and said channel is on the inner face of the shank near the forward end of the heel, and wherein said overshoe includes a tension strip anchored to the opposite sides of the shank and to the underside of the shank on the forward side of the channel and extending therefrom up the side portions of the upper part of the overshoe and around the top edge of said counter.

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