Nov. 11, 1952 W. C. JACKSON 2,617,209

RUBBER OVERSHOE

Filed Aug. 26, 1949 2 SHEETS—SHEET 1

Fig. 1.

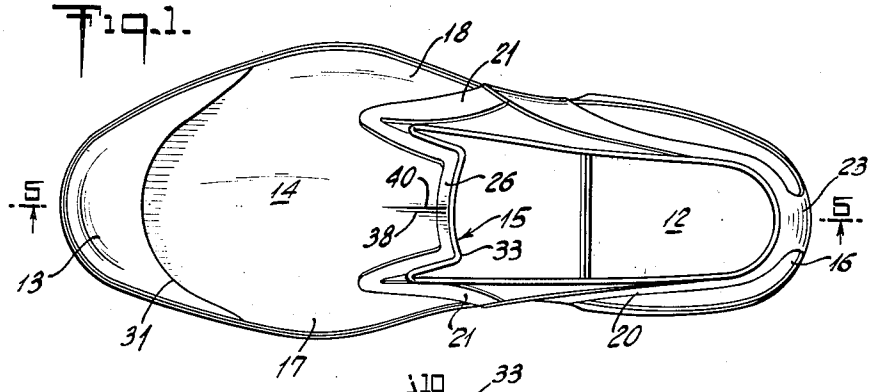


Fig. 2.

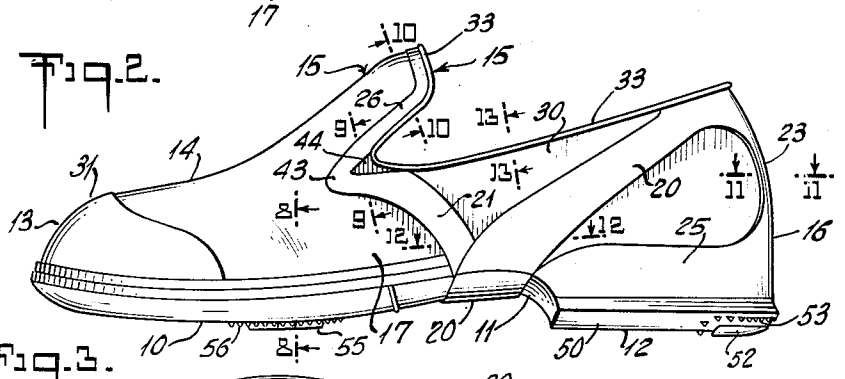


Fig. 3.

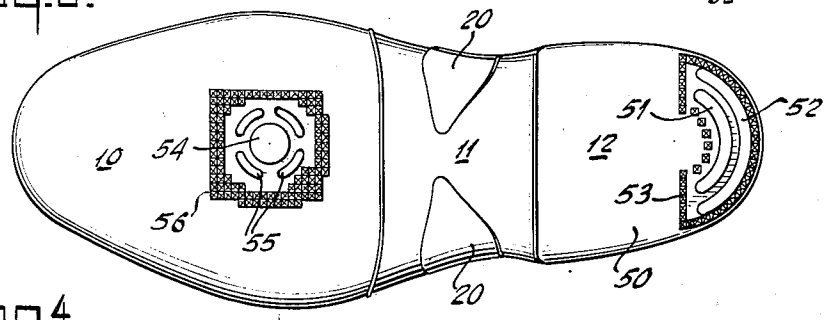
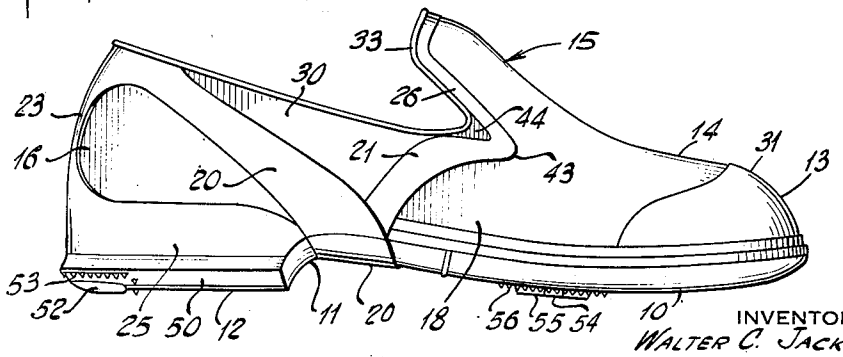


Fig. 4.



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Fig. 5.

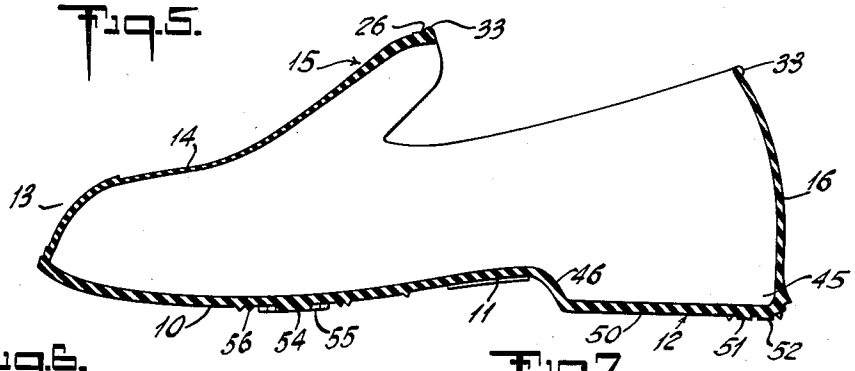


Fig. 6.

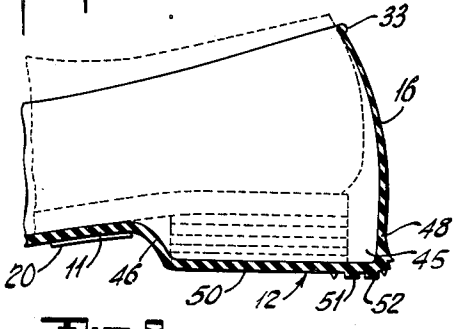


Fig. 7.

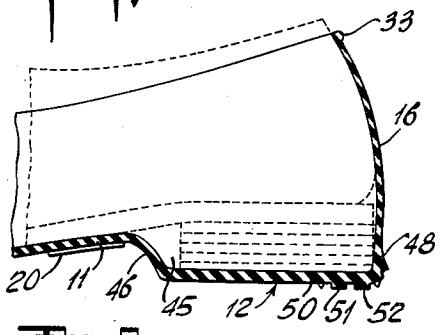


Fig. 8.

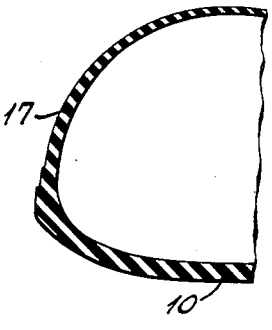


Fig. 9.

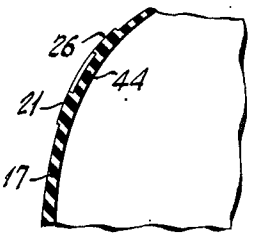


Fig. 13.

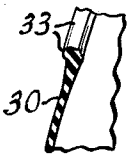


Fig. 11.

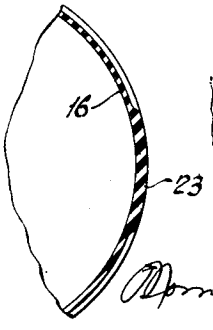


Fig. 10.

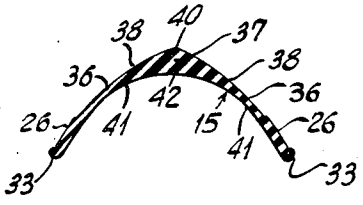
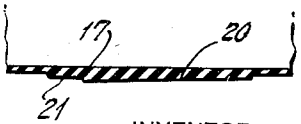


Fig. 12.



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UNITED STATES PATENT OFFICE

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RUBBER OVERSHOE

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Application August 26, 1949, Serial No. 112,513

9 Claims. (Cl. 36—7.3)

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

An overshoe made of rubberized fabric or rubber reinforced by a fabric lining and designed in accordance with conventional practice, is comparatively inelastic and, therefore, can fit properly only over an inner shoe of one definite corresponding size. In my U. S. Patent No. 2,254,685, issued September 2, 1941, there is disclosed an overshoe which may be made entirely of rubber or made at least with an all-rubber upper, 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.

One object of the present invention is to provide a new and improved overshoe of the so-called "storm" type, having an instep tongue which, although made entirely of rubber, has enough rigidity to maintain its shape against curling or buckling in or out of use, which can be easily manipulated and flexed to permit the overshoe to be applied easily over the inner shoe and which, when the overshoe is applied to the inner shoe, fits over the instep section of said inner shoe with close conforming contact maintained even during walking action.

Another object is to provide a new and improved overshoe of the so-called storm type which, although provided with an instep tongue, is constructed and designed to permit the mouth margin of the overshoe at the base of said tongue to expand freely when said overshoe is being applied over the inner shoe and to hug the inner shoe with a close conforming fit when said overshoe has been fully applied over said inner shoe and during walking action.

Still another 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 definite prescribed range and which anchors firmly to the heel of the inner shoe against play, regardless of the size of said inner shoe within the prescribed range.

A further object of the present invention is to provide an overshoe having a heel section effectively reinforced in a new and novel manner against the outer edge cutting or wearing action of the inner shoe heel thereagainst.

Various other objects of the invention will be 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;

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

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

Fig. 4 is an elevation of the opposite side of the overshoe;

Fig. 5 is a longitudinal section taken on the line 5—5 of Fig. 1;

Fig. 6 is a detail longitudinal section of the rear portion of the overshoe shown applied to an inner shoe of minimum size within the prescribed range;

Fig. 7 is a detail longitudinal section of the rear portion of the overshoe as in Fig. 6, but shown applied to an inner shoe of maximum size within the prescribed range; and

Figs. 8, 9, 10, 11, 12 and 13 are enlarged detail sections taken on lines 8—8, 9—9, 10—10, 11—11, 12—12 and 13—13 respectively of Fig. 2.

Referring to the drawings, the overshoe embodying the present invention is shown of the storm type, and is made of elastic material, and desirably of 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. Thus, three sizes of overshoes, designated as "small," "medium" and "large," for example, are all that are necessary to fit inner shoes ranging, for example, from size 7, having a pointed toe, to size 12, having a pointed toe. The "small" overshoe is stretchable to adapt it to fit inner shoes ranging, for example, from size 7, having a pointed toe, to size 8½, having a medium shape toe, the "medium" overshoe is adapted to fit inner shoes ranging, for example, from size 8½, having a medium shape toe, to size 10½, having a pointed toe; and the "large" overshoe is adapted to fit shoes ranging, for example, from size 10, having a medium shape toe, to size 12, having a pointed toe. These size ranges are illustrative only and may differ according to the last.

The overshoes are desirably free from fabric reinforcements, especially in the upper parts above the soles, to permit said overshoes to stretch, restricted only by the inherent resiliency of the rubber. The overshoes are made preferably of good rubber stock, which is strong but which at the same time is elastic enough for the purpose indicated. To that end, the overshoes may be made of rubber stock similar to that used for pneumatic tire treads.

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 con-

nected 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.

As in the overshoe of my aforesaid patent, 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. The tension strip 21 decreases in thickness from its anchorage in the shank 11 up to the area 44 and then increases in thickness to a maximum at the region 43.

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, as shown in Fig. 13, this top section will hug the inner shoe tighter. For this purpose, the top edge of the triangular section 30 may be thickened for a depth of about ¼ inch.

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.

With the construction so far described, when the overshoe is applied to an inner shoe, the sole 10 and the upper are both stretched to fit the inner shoe. 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.

As a feature of the present invention, 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. 5, so that when the overshoe is not in use, said tongue will maintain its fully extended shape, and 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 and 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.

As another feature, 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, as shown in Fig. 10. To maintain such angularity in 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.

As a further feature, 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.

As another feature of the present invention, the overshoe is dimensioned and designed around the base thereof to obtain a firm foothold on the inner shoe when applied thereto. For that purpose, the heel 12 of the overshoe defines an elongated socket 45, the length of which is substantially greater than the length of the heel receiving socket of a normal overshoe of corresponding overall sole length, so as to receive not only the heel of the smallest inner shoe within a prescribed range, but also the heel of the largest inner shoe within that range. This heel socket 45 has a front upstanding wall 46 at the rear end of the shank 11 and said wall 46, due to the lengthening of the heel socket, is located forwardly of the position it would normally occupy with respect to the rear upstanding wall 48 of the overshoe, to such extent that the breast face of the heel of the smallest inner shoe within the prescribed range will bear firmly against this front wall 46, while the upper rear end of the counter of said

inner shoe will bear with a slight stretching fit against the forwardly inclined upper rear end of the counter 16 of the overshoe, as shown in Fig. 6. This serves to anchor effectively the overshoe against play to the smallest inner shoe within the prescribed range.

The heel socket 45 of the overshoe, moreover, is so diminished and positioned that the heel of the largest inner shoe within the prescribed range will bear with a slight stretching fit against the rear upstanding wall 48 of said heel socket as well as against the entire rear wall of the counter 16, thereby effectively anchoring the overshoe to said largest inner shoe against play, as shown in Fig. 7.

Any inner shoe of intermediate size between extremes in the prescribed range will effectively retain the overshoe against play, by sharing anchorage between the front upstanding wall 46 of the heel socket 45 and the rear upstanding wall 48 of said heel socket.

It will thus be evident that when the overshoe is applied to an inner shoe of maximum size within the prescribed range there will be left in front of the heel breast face of said inner shoe a space sufficient to permit the heel breast face of a smaller inner shoe within the prescribed range, when the overshoe is applied thereto, to shift forwardly within the overshoe to an extent limited only by either the abutment of the toe of the inner shoe against the toe of the overshoe, in intermediate sizes of inner shoes, or by the abutment of the heel breast face against the front upstanding wall of the heel socket in an inner shoe of minimum size, it being understod that the inner shoe of such minimum size will be of sufficient length to substantially fill the front portion of the overshoe even if the toe of the inner shoe does not abut the toe of the overshoe. It will also be understood that the overshoe is not intended to be applied to inner shoes outside the limited prescribed range, since such inner shoes would be either too small or too large to make a proper walking fit with the overshoe.

As a further feature of the invention, 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 follow substantially the curvature of the outer edge 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 follow substantially the curvature of the outer edge of the heel of the largest inner shoe which the overshoe is designed to accommodate. The rib 51 is located so that, when the overshoe is accommodating the smallest inner shoe within the prescribed range, the outer edge of the heel of said inner shoe bears downwardly against said rib near its outer periphery, as shown in Fig. 6. The wearing or cutting action of the inner shoe heel on the bottom heel wall 50 of the overshoe is thus effectively resisted. Likewise, the rib 52 is located so that, when the overshoe is accommodating the largest inner shoe within the prescribed range, the outer edge of the heel of said inner shoe bears downwardly against said rib near its inner periphery, as shown in Fig. 7, thereby effectively resisting the wearing or cutting action of said inner shoe heel. The wearing or cutting action of inner shoe heels of in-between sizes is resisted by the sharing action of both ribs 51 and 52.

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 ribs 51 and 52 are desirably encompassed by a tread design 53 for anti-skid purposes. This tread design 53 is shown in the drawings covering only a small area, but actually it desirably covers the entire heel area.

The sole 10 of the overshoe is desirably provided near its center, where the greatest wear is apt to be encountered, with a reinforcement shown comprising a circular ridge 54 and a plurality of arcuate ribs 55 concentrically encircling said ridge and spaced therefrom and from each other, so as not to impair the flexibility of the sole. This reinforcement is desirably encompassed by a tread design 56 for anti-skid purposes. This tread design 56 is shown in the drawings covering only a small area, but actually it desirably covers the entire sole area.

While the invention has been described with particular reference to a specific embodiment, it is to be understood that it is not 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 of the storm type, with its upper made entirely of one piece of elastic material and having V-shaped notches on the sides respectively defining therebetween an instep tongue, the outer surfaces of the sides of said tongue being each of continuous contour and converging laterally of said tongue towards a substantially sharp medial longitudinal apex, while the inner surfaces of said sides are joined at the medial longtitudinal region of the tongue opposite said apex by a curved smooth surface spaced from said apex sufficiently and in a manner to taper said tongue from its apex section sideways.

2. An overshoe of the storm type, having its upper made entirely of one piece of elastic stretchable material and having V-shaped notches on the sides respectively defining therebetween an instep tongue, said overshoe having on each side an angular thickened flat strip-like section near the base of said tongue, one arm of said angular section extending along the margin of said tongue, and the other arm extending along the side of the overshoe near the upper margin thereof, said arms defining therebetween at the apex of the corresponding notch a V-area of unthickened web serving as an elastic gusset.

3. An overshoe of the storm type, having its upper made entirely of one piece of elastic stretchable material and having V-shaped notches on the sides respectively defining therebetween an instep tongue, said overshoe having a shank, said overshoe having a thickened section defining a flat strip extending from one side of the shank upwardly and forwardly towards one side of the base of said tongue to define a tension strip portion for one side of said overshoe, then around the margin of said tongue to the other side of the base of said tongue to define a binding strip portion for said tongue, and then downwardly and rearwardly towards the opposite side of said shank to define a tension strip portion for the other side of said overshoe, said strip having bends where said portions are joined together to define in the regions between the sides of said bends at the apexes of said notches V-areas of unthickened web functioning as elastic gussets, and to act as V-shaped springs.

4. An overshoe for inner shoes of various sizes within a limited prescribed range, the upper of said overshoe having a marginal mouth section of elastic material adapted to be stretched when the overshoe is applied to an inner shoe within said range and to be constricted by its inherent resiliency against said inner shoe, said overshoe having a sole, shank and a heel portion, said heel portion including an elongated heel receiving socket with front and rear upstanding walls, the front upstanding wall of said socket being located forwardly of the position it would normally occupy with respect to the rear upstanding wall of the heel socket of a normal overshoe of corresponding overall sole shank-heel length, whereby when the overshoe is applied to an inner shoe of maximum size within the prescribed range the rear face of the heel of said inner shoe will contact said rear upstanding wall and there will be left in front of the heel breast face of said inner shoe a space permitting the heel breast face of a smaller inner shoe within the prescribed range, when the overshoe is applied thereto, to shift forwardly within the overshoe to an extent limited only by either the abutment of the toe of the inner shoe against the toe of the overshoe, in intermediate sizes of inner shoes, or by the abutment of the heel breast face against the front upstanding wall of the heel socket in an inner shoe of minimum size.

5. An overshoe according to claim 4, wherein the bottom wall of the heel socket is thickened along its rear outer margin to receive the bearing pressure from the rear outer bottom edge of the heel of the inner shoe of maximum size within the prescribed range, and is also thickened inwardly of its rear outer margin in a localized area positioned to receive the bearing pressure from the rear outer bottom edge of the heel of the inner shoe of minimum size within said range.

6. An overshoe according to claim 4, wherein the bottom wall of said heel socket has a pair of substantially concentric ribs, one rib extending along the rear outer margin of said bottom wall to receive the bearing pressure from the rear outer bottom of the heel of the inner shoe of maximum size within the prescribed range, and the other rib being located inwardly of said rear outer bottom edge of the heel of the inner shoe of pressure from the rear outer bottom edge of the heel of the inner shoe of minimum size within the prescribed range.

7. An overshoe according to claim 4, comprising a counter, and elastic tension strips anchored to the opposite sides of the shank and extending therefrom up the side portions of the upper and around the top edge of said counter, said elastic tension strips serving to hold the front wall of the heel socket firmly up against the heel breast face of an inner shoe of minimum size when the overshoe is applied thereto.

8. An overshoe according to claim 4 comprising a counter having a forwardly inclined stretchable upper rear portion terminating in a top rear edge located more forwardly of the rear upstanding wall of the heel socket than in a normal overshoe of corresponding overall sole shank-heel length and being adapted to contact with a slight stretch fit the upper rear end of the counter of an inner shoe of minimum size within the prescribed range when the overshoe is applied thereto and the front breast face of such inner shoe abuts against the front upstanding wall of the heel socket.

9. An overshoe according to claim 8 comprising elastic tension strips anchored to the opposite sides of the shank and extending therefrom up the opposite side portions of the upper and around the top edge of said counter, said elastic tension strips serving to hold the front wall of the heel socket firmly up against the heel breast face of an inner shoe of minimum size within the prescribed range.

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