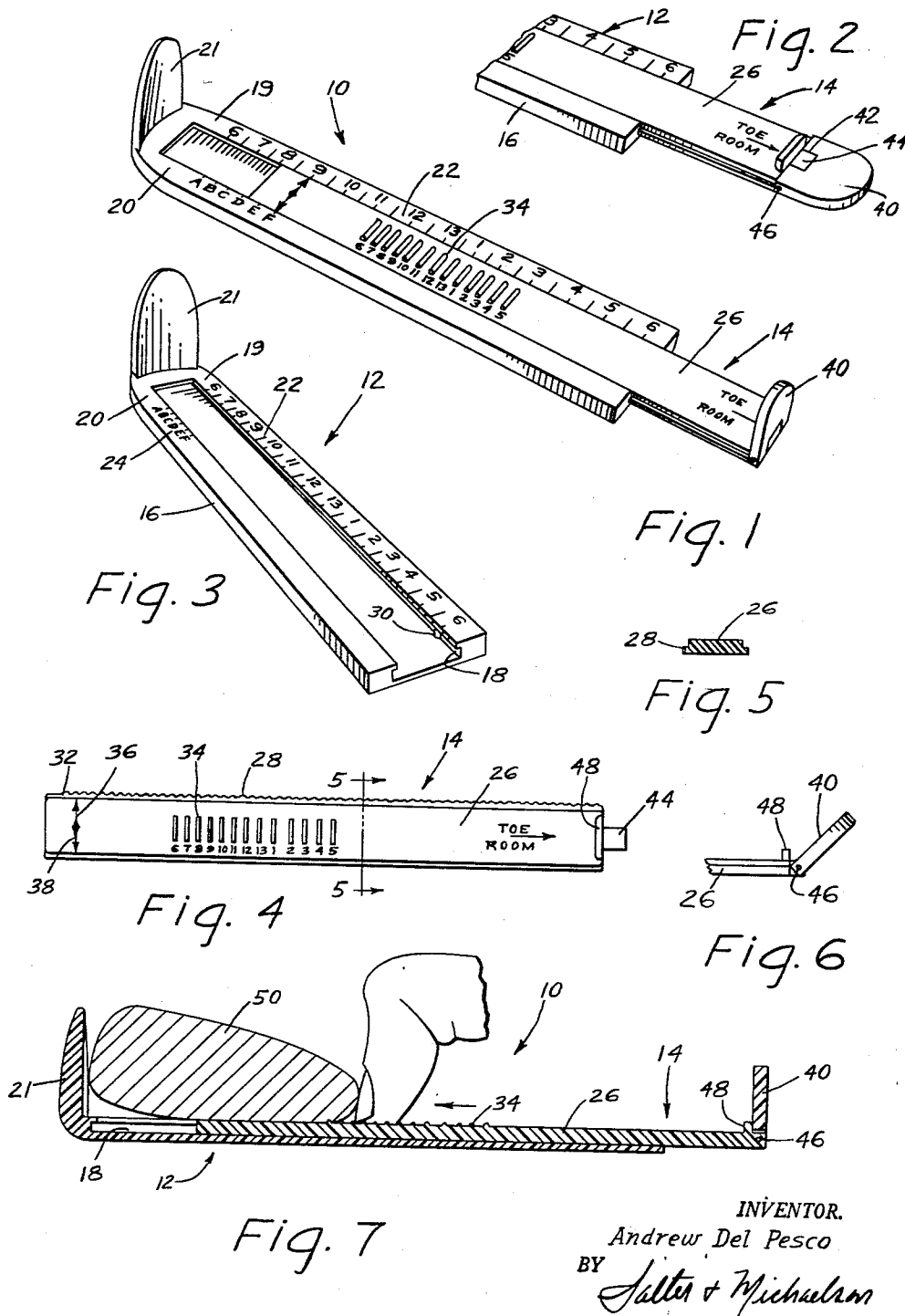


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A. DEL PESCO
FOOT MEASURING DEVICE
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INVENTOR.
Andrew Del Pesco
BY *Salter & Michaelson*

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FOOT MEASURING DEVICE

Andrew Del Pesco, Danielson, Conn.

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The present invention relates to a foot measuring device. More particularly the present invention relates to an implement for easily and conveniently obtaining correct foot measurements and for checking a wearer's shoe to determine the correctness of the fitting thereof on the wearer's foot.

The usual procedure in obtaining the correct length and width size of a foot for the purpose of fitting a person with proper shoes is to utilize a measuring device that is provided with a scale upon which the foot to be measured is placed. The heretofore known foot measuring devices were usually constructed in an elongated one piece construction and included a scale that was calibrated so that the length size could be read directly thereon. The width size of the foot was then determined by moving the foot to another scale or by utilizing a separately movable measuring element in conjunction with a width scale. Normally the heretofore known foot measuring devices were bulky and cumbersome and consequently could not be conveniently carried on the person of a shoe clerk who would normally utilize the device for measuring the foot for width and length sizes. In measuring children's feet for shoes it is desirable to have a measuring device that is conveniently available to the clerk, that is simple to operate and constructed such that the proper shoe size of a person's foot may be quickly and easily obtained.

Although these prior known foot measuring devices had some degree of accuracy in obtaining the correct size of the wearer's foot, they could not insure that a proper fit would be obtained by the shoe selected. It is known that shoe sizes vary from manufacturer to manufacturer and consequently the designated size of a shoe may not correspond to the measured size of the wearer's foot. Heretofore if shoes were missized or varied in accordance with the manufacturer, a correct fitting was only possible through the experience and skill of the shoe clerk. The present invention is designed to eliminate this hit and miss technique in determining whether a proper size shoe has been selected, even after the foot has been measured, and provides a device that when properly employed will immediately reveal whether the shoe selected is the proper size. The present invention is also designed to permit periodic checks to be made to determine whether the shoe selected is correctly fitting the wearer's foot even after a period of wear. This feature has particular application in connection with children's shoes, since children's feet normally grow at a relatively rapid rate and it is the rule rather than the exception when a child's shoe fits properly after only a short period of wear. Since the present invention is designed to not only measure the foot but to also measure the shoe, a comparison can be made at any time to determine whether the shoe being worn is the proper fit.

Accordingly, it is an object of the present invention to produce a foot measuring device that is simple to use, compact in size and accurate in indicating correct shoe sizes.

Another object is to provide an implement for measuring a shoe for size as well as measuring feet, thereby enabling a comparison of the sizes of the shoe and foot to be made to determine whether the shoe selected is the correct size.

Still another object is to provide an implement for determining whether a particular shoe properly fits the wearer's foot, the determination being made without having to measure the wearer's foot for size.

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Still another object is to provide an implement for measuring the inside length of a shoe to determine whether sufficient toe room exists for the wearer's foot.

Still another object is to provide a foot measuring device that insures that the shoe selected as a result of the measurement thereby will have growth room, functional space and will compensate for any use shrinkage.

Still another object of the present invention is to provide a foot measuring device that includes a pivotally mounted toe rest that cooperates with a heel rest to register the proper length size of a foot.

Still another object is to provide a scale member for use in a foot measuring device that includes a numbered scale that indicates width sizes, a measuring element engaging the scale member and being movable relative thereto for obtaining the length and width size of the foot being measured.

Still another object is to provide a foot measuring device having a pivotally mounted toe rest that is adapted to indicate whether a particular shoe is the proper size for the wearer's foot.

Still another object is to teach a method of obtaining correct length and width size of a foot so that the proper size shoe may be fitted on the foot.

Other objects and the nature and advantages of the instant invention will be apparent from the following descriptions taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is a perspective view of the foot measuring device embodied herein showing the relative positions of the scale member and the measuring element that is slidably mounted therein, the toe rest that is pivotally mounted on the outer end of the measuring element being shown in the upper position thereof;

FIG. 2 is a fragmentary perspective view illustrating the toe rest in the lower position thereof;

FIG. 3 is a perspective view of the scale member, the slidably mounted measuring element having been removed therefrom;

FIG. 4 is a top plan view of the measuring element that is adapted to be slidably received within the scale member;

FIG. 5 is a sectional view taken along line 5—5 in FIG. 4;

FIG. 6 is a fragmentary side elevational view of the end of the measuring member showing the toe rest being moved from the upright position shown in FIG. 1 to the lower or horizontal position shown in FIG. 2; and,

FIG. 7 is a sectional view taken along the longitudinal axis of the foot measuring device and illustrating the manner in which the width size of the foot being measured is obtained.

The foot measuring device embodied herein is shown for use primarily in obtaining shoe sizes or for measuring shoes usually associated with children. However, it is understood that the basic concept of the invention can be utilized in obtaining shoe sizes for both men and women as well as children and therefore if desired the foot measuring device may be amplified to include additional scale calibrations for accommodating larger foot sizes.

Referring now to the drawings and particularly to FIG. 1, the foot measuring device embodied herein is illustrated and is generally indicated at 10. The component parts of the foot measuring device are preferably molded of a plastic material thereby reducing manufacturing costs and enabling various color combinations to be easily utilized. However it is understood that other materials such as light weight metals and wood can be employed without departing from the spirit of the invention. The foot measuring device 10 includes two basic components, the first being a scale member generally indicated at 12 in FIG. 3 and the second being a

measuring element generally indicated at 14 in FIG. 4. As seen in FIG. 3 the scale member 12 is substantially elongated in configuration and includes a substantially flat body portion 16 that is formed with an inverted T-shaped slot 18 in the upper surface thereof, the slot defining opposed upper faces 19 and 20. The slot 18 extends substantially the length of the body portion 16, and is spaced from the rear end thereof but extends through the front end thereof. Molded integrally with body portion 16 on the rear end thereof and adjacent the closed end of the slot 18 is an upstanding projection 21 that has a concave inner surface and thereby defines a heel rest for receiving thereagainst the heel of a foot that is to be measured.

Imprinted on the upper face 19 of the body portion 16 and adjacent the slot 18 is a scale indicated at 22 that is calibrated in accordance with the accepted length sizes of children's shoes and accordingly includes numbered indicia reading from the child's shoe length size of 6 up to and including adult size of 6. The markings of the calibrated scale 22 extends substantially the length of the slot 18 and also includes half sizes, since all shoe manufacturers make shoes in half sizes. Formed on the other face 20 of the slot 18 and extending along only a portion thereof is a calibrated scale 24 that includes lettered indicia beginning with the letter A and ending with the letter F. The lettered scale 24 is adapted to indicate children's width size and as will be discussed hereinafter is calibrated so as to be interrelated to the movement of the measuring element 14.

Referring now to FIG. 4 the measuring element 14 is illustrated in more detail and as shown includes an elongated body 26 (FIG. 5) that has an inverted T-shaped configuration and that is adapted to be slidably received within the slot 18. Extending along one edge of the body 26 are serrations indicated at 28 that are adapted to coact with a projection 30 that is formed within the slot 18. The projection 30 provides a ratcheting action with respect to the serrations 28 and insures that the measuring element 14 will be retained at the position to which it is moved. An enlarged serration 32 formed on the body 26 adjacent the inner end thereof (FIG. 4) is adapted to engage the projection 30 upon withdrawal of the measuring element 14 to the outermost position thereof, and thereby prevents the measuring element 14 from being inadvertently withdrawn from the slot 18. If it is desired the measuring element 14 may be removed from engagement with the scale member 12 by exerting a sufficient pull thereon to cause the serration 32 to be forced by the projection 30.

Formed on the measuring element 14 are a plurality of spaced protuberances 34 that extend above the surface of the body 26 and as such define detents that are adapted to be contacted by the finger nail of the user of the device. It will be noted that the protuberances or detents 34 are numbered, the numbers corresponding to the numbered indicia 22 inscribed on the scale member 12. As will be more apparent hereinafter the detents 34 are spaced in a predetermined manner so as to position the measuring element 14 with respect to the foot being measured when the width size of the foot is to be obtained. Also formed on the upper surface of the body 26 is an arrowhead indicator 36 that is adapted to be aligned with one of the numbered indicia on the length scale 22 when the measuring element 14 is adjusted in accordance with the length of the foot being measured. A second arrowhead indicator 38 which is formed as an extension of the indicator 36 is adapted to be aligned with one of the lettered indicia on the width scale 24 so as to obtain the width size of the foot being measured.

Joined to the body portion 26 of the measuring element 14 on the end thereof opposite the indicators 36 and 38 is a pivotally mounted toe rest 40. The toe rest 40 is provided with a central cut-out portion 42 that receives a projection 44 that is formed integral

with the outer end of the scale member body portion 26. A pin 46 extends through the legs of the toe rest 40 defined by the cutout portion 42 and through the projection 44 to pivotally mount the toe rest 40 with respect to the body portion 26. Since the ends of the legs of the toe rest 40 are located in closely engaging relation with respect to the outer edge of the body portion 26, the edge acts as a camming surface to retain the toe rest 40 in either the upper position as shown in FIG. 1 or in the lower position as shown in FIG. 2. The camming action by the outer edge of the body portion 26 with respect to the legs of the toe rest 40 is shown more clearly in FIG. 6. Formed on the outermost end of the body portion 26 adjacent the projection 44 is a projection 48 that is adapted to limit inward movement of the toe rest 40 and thereby causes the toe rest 40 to remain in an elevated or upright position during the foot measuring operation. As will be more fully set forth hereinafter the toe rest 40 is adapted to be utilized in comparing the measurement of the foot with the measurement of the shoe selected and is also employed for checking old shoes to determine whether they are the proper size for the wearer. In this connection, the toe rest defines the amount of space that is required between the end of the large toe of the wearer's foot and the toe of the shoe. This dimension which has been ascertained through experimentation is necessary in order that the foot may have the required room for expansion in all phases of activity.

In use, when the foot measuring device 10 is utilized to obtain a shoe size, the foot to be measured indicated at 50 in FIG. 7 is placed on the scale member 12 with the heel of the foot in engagement with the heel rest 21 and the toes pointing outwardly toward the toe rest 40. With the toe rest 40 in the elevated or upright position thereof the measuring element 14 is adjusted with respect to the scale member 12 until the large toe of the foot 50 just contacts or engages the toe rest 40. The indicator 36 now points to one of the numbered indicia on the scale 22, and this number is the correct shoe size in length for the foot. With the length of the foot 50 obtained, the device is then shifted in position with respect to the foot, and as shown in FIG. 7, the device assumes a position whereby the longitudinal axis thereof is perpendicular to the longitudinal axis of the foot. The person measuring the foot 50 then places his thumb or finger in the detent 34 that corresponds to the length that has just been obtained. As shown in FIG. 1, the indicator 36 points to the number 9. The person measuring the foot 50 then places his thumb behind the detent numbered 9 on the scale 34 and moves the measuring element 14 toward the side of the foot 50 as shown by the arrow in FIG. 7 until the thumb just makes contact therewith. The arrowhead indicator 38 now points to a width size which is the correct width size of the foot 50. With the correct width and length size obtained a shoe bearing the corresponding sizing may be properly fitted on the foot.

It is significant that the length size of the foot is obtained by locating the measuring element 14 such that the toe rest 40 is just in contact with the large toe of the foot 50. If the toe rest 40 is moved or pivoted to the outer position thereof by the toe, then the size indicated is too small and the measuring element 14 must be repositioned so that the foot 50 is within the confines of the heel and toe rests in engaging relation therewith, the toe rest remaining in the upright position thereof.

It is sometimes desirable to determine whether a shoe is a proper fit for a particular foot. This may be determined by using the pivotally constructed toe rest 40. The toe rest 40 is first moved to the lower or horizontal position as shown in FIG. 2. The foot measuring device 10 is then placed within the shoe and the measuring element 10 is adjusted until the toe rest 40 just engages the inside edge of the toe of the shoe. With the heel rest positioned against the rearmost portion of the heel

of the shoe, the foot measuring device is then withdrawn and the size indicated by the indicator 36 should correspond to the measured size of the foot as previously obtained. This comparison of measured foot size and measured shoe size provides an additional check for determining whether the shoe selected is the proper size for the wearer.

It is frequently desirable to check the shoes of a child to determine whether they are properly fitting the child's feet. In this connection it is not always practical to visit a shoe store for a fitting and for this purpose the toe rest 40 is also provided. In order to check the old shoe size, the toe rest 40 is moved to the lower or horizontal position as shown in FIG. 2 and the device is placed in the child's shoe, as described above, with the heel rest engaging the inside heel of the shoe. The measuring element 14 is then moved outwardly until the lowered toe rest engages the toe of the shoe. The device is removed from the shoe and the toe rest pivoted to the upright position as shown in FIG. 1. The child's foot is then placed on the foot measuring device 10 with the heel thereof in engagement with the heel rest 21. If the toe of the foot causes the toe rest 40 to be moved outwardly, then the shoe is too big for that particular foot. If the toe is displaced inwardly with respect to the toe rest 40, then the shoe is too large. If the toe just engages the toe rest 40, then the shoe is the proper fit for that particular foot. It is seen, therefore, that the longitudinal dimension of the toe rest 40 defines that amount which should be present between the toe of the foot and the outermost end of the toe portion of the shoe. This is the space that must be present between the outermost end of the foot and the toe of the shoe, and if more or less than this space is present, the shoe is not a proper fit for that particular foot. This feature has particular application in the measurement of children's shoes since children usually cannot understand when a shoe is properly or improperly fitted. The usual technique in this regard is to push the toe of the shoe inwardly and feel the approximate location of the toes. This technique requires experience and skill and oftentimes causes incorrect information to be obtained. As a result short shoes are not timely discarded and oftentimes foot disorders occur.

It is seen that the device may be purchased by the parent and retained in the home so that periodic checks of the child's shoes can be made from time to time to determine whether the child is wearing out-grown or short shoes.

The foot measuring device 10 embodied herein is not only simple in construction and compact in form, but is easy to use and gives an accurate measurement of length and width size. All of the elements that define the foot measuring device are constructed of a plastic material which enables the device to be manufactured economically and furthermore enables the device to be formed in various colors which adds to the ornamental appearance of the device. The matter of obtaining a proper length and width size can be accomplished in a matter of seconds, and the adjustable toe rest 40 insures that a proper shoe fit will be obtained.

While there is shown and described herein certain specific structure embodying the invention, it will be manifest to those skilled in the art that various modifications and rearrangements of the parts may be made without departing from the spirit and scope of the underlying inventive concept and that the same is not limited to the particular forms herein shown and described except insofar as indicated by the scope of the appended claims.

What is claimed is:

1. In a foot measuring device, an elongated member having a slot extending substantially the length in the upper surface thereof and having an upstanding projection positioned at one end thereof, said projection having an inner concave surface and defining a heel rest, 75

a calibrated scale extending along one side of said slot and including successively numbered indicia that represent foot sizes in length, a calibrated scale extending along a portion of the opposite side of said slot and including successively lettered indicia that represent shoe sizes in width, and a member disposed in said slot and adapted to be slidably moved therein, said slidable member including a projection that is pivotally mounted about a horizontal axis and that defines a toe rest, said slidable member being movable within said slot to adjust the toe rest so that it contacts the outermost end of the toe of the foot when the foot is placed on said elongated member with the heel thereof in engagement with said heel rest, an indicator disposed on said slidable member on the side adjacent the numbered scale for indicating the foot size in length when the ends of said foot are positioned in engagement with said heel and toe rests respectively, a plurality of spaced markings formed on said slidable member and scaled in the same sequence to correspond to the numbered indicia on said elongated member, and a second indicator disposed on said slidable scale and adapted to be aligned with one of said lettered indicia.

2. In a foot measuring device, an elongated member having a slot extending substantially the length in the upper surface thereof and having an upstanding projection joined thereto at one end thereof, said projection defining a heel rest, a calibrated scale extending along one side of said slot and including numbered indicia that represent foot sizes in length, a calibrated scale extending along a portion of the other side of said slot and including lettered indicia that represent foot sizes in width, and a member slidably mounted in said slot and including an upstanding toe rest, an indicator formed on said slidable member for indicating the length size of the foot being measured, a plurality of spaced markings formed on said slidable member and identified by numbered indicia that are arranged in the order that corresponds to the order of the numbered indicia on said elongated member, and a second indicator formed on said slidable member and adapted to be aligned with one of said lettered indicia for indicating the width size of the foot being measured.

3. In a foot measuring device, a scale member having a heel rest formed on one end thereof, a calibrated numbered scale formed on a surface of said scale member adjacent an edge thereof, and a calibrated lettered scale extending along a portion of said surface adjacent the other edge thereof, a measuring element slidably mounted in said scale member and movable with respect thereto, a pivotally mounted toe rest joined to the end of said measuring element opposite said heel rest and cooperating with said heel rest to receive a foot that is to be measured therebetween, said toe rest being pivotally movable about a horizontal axis from an upright to a horizontal position, an indicator on said measuring element for indicating the length of said foot on said numbered scale, a plurality of spaced markings on said measuring element each of which is identified by a number corresponding to a number on said numbered scale, and an indicator on said measuring element for indicating a letter on said lettered scale that corresponds to the width of the foot being measured.

4. In a method of measuring a foot utilizing a scale member having a calibrated numbered scale on one side thereof and a calibrated lettered scale on the other side thereof, a measuring element being slidably mounted on said scale member and having a plurality of scaled markings that correspond to said numbered scale, comprising the steps of positioning the foot to be measured on said scale member with the length of said foot extending in the same direction as the longitudinal axis of said scale member, adjusting said measuring member to the length of said foot, whereby a number on said numbered scale is indicated for indicating the length size of said foot, repositioning said scale member with respect to said foot so

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that the length of said foot is perpendicular to the longitudinal axis of said scale member, placing the measurer's finger in the marking corresponding to the indicated length of said foot and moving said measuring element inwardly until the measurer's finger contacts the side of said foot, a letter on said lettered scale thereby being indicated to indicate the width size of said foot.

5. In a foot measuring device, an elongated member having a heel rest formed thereon, a slidable member engaging said elongated member and movable relative thereto, and a pivotally mounted toe rest joined to the outer end of said slidable member and movable from an upright position to a horizontal position to form an extension of said slidable member, the length of said toe rest being of a predetermined dimension and defining the length of the space required between the outer end of a foot and the toe of a shoe.

6. In an implement for use in obtaining correct shoe fittings, an elongated member including a portion that defines a heel rest, a slidable member engaging said elongated member and movable relative thereto, and a toe rest pivotally connected to the outer end of said slidable member and forming an extension thereof, said toe rest being pivotally movable from an upright to a horizontal position, and the length of said toe rest being of a predetermined dimension and defining the length of the space required between the outer end of a foot and the toe of a shoe.

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7. In a method of obtaining a correct shoe fitting by utilizing a measuring implement that includes an elongated member and a movable element slidably mounted in said elongated member, and an extension being joined to said movable element, comprising the steps of placing said measuring implement in said shoe to be measured, the rear edge of said elongated member engaging the heel of said shoe, moving said movable element into engagement with the toe of said shoe, removing said implement from said shoe, placing the wearer's foot on said implement so that the wearer's heel engages the rear edge of said elongated member, and locating the wearer's toes with respect to said extension to determine if a predetermined point has been exceeded by the wearer's toes.

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