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E. J. BLISS

1,921,997

SHOE FITTING DEVICE

Filed Feb. 26, 1931

2 Sheets-Sheet 1

Fig. 2.

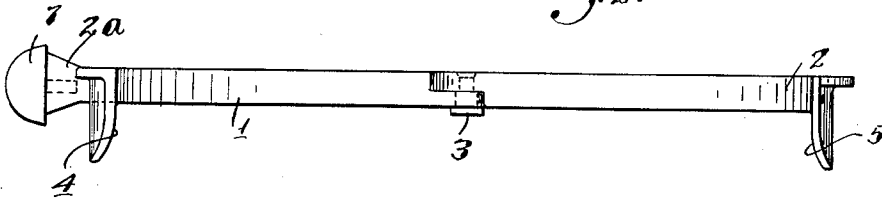


Fig. 3.

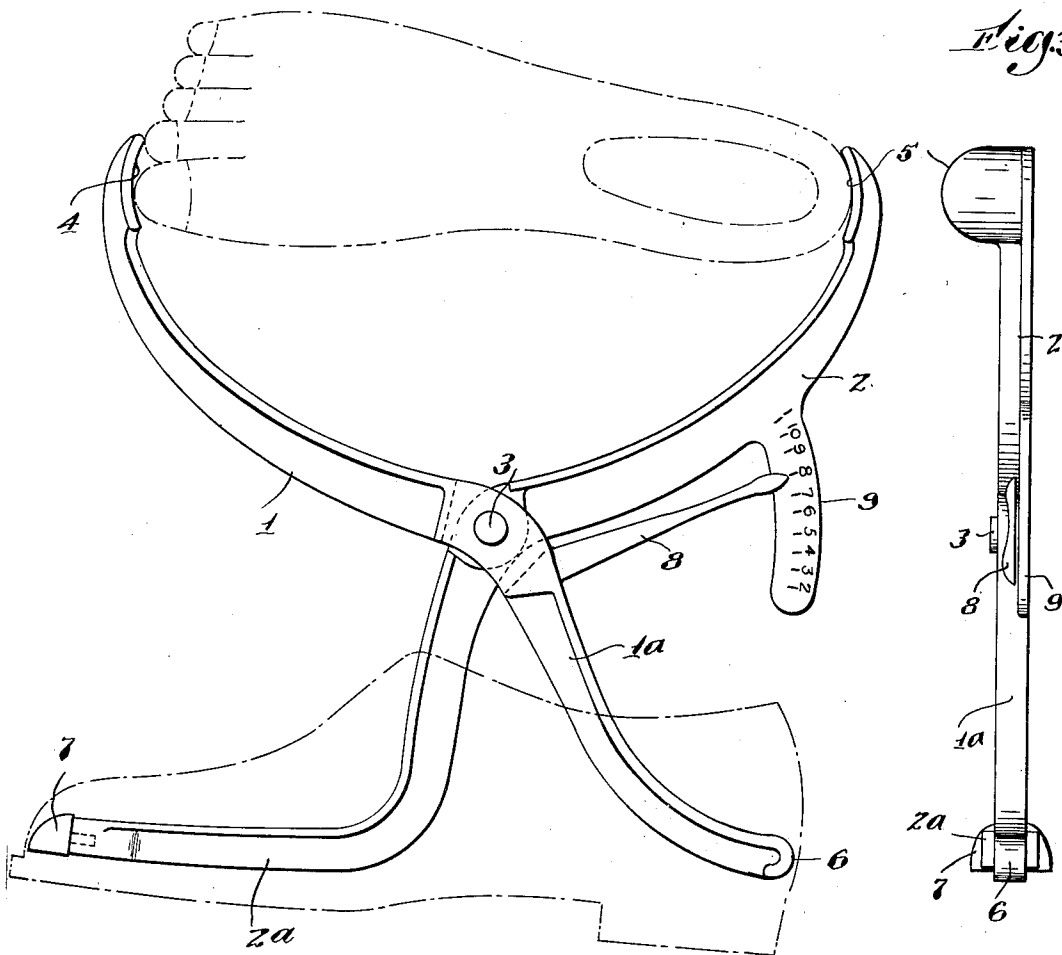


Fig. 1.

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UNITED STATES PATENT OFFICE

1,921,997

SHOE FITTING DEVICE

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Application February 26, 1931. Serial No. 517,799

5 Claims. (Cl. 33—3)

This invention relates to the art of fitting shoes to the human foot and is intended to provide a simple and reliable device for comparing the overall length measurement of a foot, that is to be fitted, with an appropriate shoe and the effective inside length measurement of a shoe that is appropriate to fit the foot being measured.

Generally speaking, the invention comprises a pair of arms pivotally connected together intermediately of their ends, the opposed members on one side of the pivot being formed as an outside caliper to gauge the overall length of an interposed foot, while the portions of the arms on the opposite side of the pivotal axis are disposed to form an inside caliper gauge arranged to gauge the inside length of a shoe, the arms being provided respectively with an indicating pointer and a coordinated length-size scale arranged to indicate the same length measurements when calipering the overall length of the foot and the inside length measurement when calipering the inside length of the shoe that is of appropriate length to fit said foot. This and other features of the invention will be particularly described in the following specification and will be defined in the claims hereto annexed.

In the accompanying drawings are shown two forms of the invention, both of which embody substantially the same construction of foot calipering means, but one of which has the inside shoe calipering means adapted to measure the inside length of a man's shoe, while the other form of the invention is intended to give the inside length measurement of a shoe having a higher type of heel.

In the drawings:

Fig. 1 is a plan view of my improved device for comprising the length measurement of a foot with the inside length measurement of a shoe of the low heel type.

Fig. 2 is an end view of the same.

Fig. 3 is a side view of the same.

Fig. 4 is a plan view of a modified form adapted for use in calipering a shoe of the high heel type.

Fig. 5 is an end view thereof.

Fig. 6 is a side view of the same.

While the drawings show how the caliper may be applied to a foot that is bearing the weight of the person, and it is preferred to apply it in this manner, yet obviously the caliper might be used when the foot is raised.

In the practice of the invention according to the illustration of the drawings, the device con-

sists of two crossed arms 1 and 2 that are pivotally connected together intermediate of their ends. The upper members of the arms are of a substantially convex form and dimensioned to caliper or gauge against the rear of the heel and the tip of the great toe, these members being provided with suitable gauging surfaces 4 and 5 to facilitate positioning the gauge properly over the foot in a lengthwise direction.

The opposite members 1^a and 2^a of the respective crossed arms are of unequal length and have a rather concave form to present their measuring tips 6 and 7 in an outwardly projecting manner to facilitate insertion of the gauge inside of the shoe so as to form gauging contact of the shorter member with the heel and of the longer member with the toe respectively.

As is well known, shoes for human feet are made somewhat longer than the foot to leave a clearance space in the toe portion to prevent contact or pressure of the great toe against the tip of the shoe. This extra length or clearance space is called the extension and is usually made about two length-sizes or two-thirds of an inch in actual measurement, although the amount of extension varies greatly with different lasts. To compensate for this extension an extra detachable tip 7 is applied to the outer end of calipering member 2^a as by a pin and socket joint, so that the actual distance from the end of the member 2^a, without the detachable tip, to the calipering tip 6 of the member 1^a will correspond exactly to the distance measurement between the two calipering faces 4 and 5.

One of the calipering members 1^a, for example, is provided with a projecting indicator or pointer 8, while the other calipering member adjacent to the pointer is provided with a length-size indicating scale 9 over which the pointer travels as the arms are moved into calipering position. The indicating scale is laid out so that in measuring a No. 6 or a No. 8, or other size length of foot, the pointer will register with such number. Since the overall distance from the outer end of one calipering member 2^a to the outer end or tip of the other inside calipering member 1^a in any given position of adjustment is the same as the inside measurement between calipering faces 4 and 5 and, since the extension tip fills the extension or clearance space in the shoe beyond the tip of the inserted foot, it will be seen that the length-size, when measuring the length of an interposed foot, indicated on the scale will be the same as when measuring the inside length of a shoe,

provided that shoe is of appropriate length to fit the foot being measured.

The device forms a very simple, convenient and convincing means for demonstrating to the customer, who insists upon too long or too short a shoe, usually the latter, that the shoe selected by him is not the proper length for his foot. For example, if a customer, whose foot length measurement calls for a No. 8 shoe, insists that he should have a No. 7 shoe, the salesman with this caliper can visually demonstrate to the customer the overall length measurement in length-sizes of his foot and then calipering the inside of the No. 7 shoe will clearly demonstrate the difference in length measurement. Whereas, with the proper length of shoe the inside and the outside calipering will register or indicate the same identical length-size. The foot should be calipered when standing.

In measuring high heeled shoes, such as are very commonly worn by women, the marked curvature of the sole or bottom of the shoe must be compensated for, since obviously the foot following this markedly curved contour of the shoe bottom from the heel to the toe really gives a fore-shortened measurement between the heel and the tip of the toe. To meet this situation and compensate for the fore-shortening to the curved line that the foot assumes, there is provided a modified construction for use in connection with the fitting of high heel shoes.

This form is illustrated in Figs. 4 to 6. So far as the upper or outside calipering members 10 and 11 are concerned, they are constructed substantially like the arms 1 and 2 above described, but the downward extension 10^a of arm 10 is more nearly straight, as is the downward extension 11^a of arm 11. To the lower end of member 11^a is secured a thin spring metal gauging member 15 to whose outer end is secured the extension tip or block 15^a, in any suitable way as by a fastening screw passing into the bottom of the block through strip 15.

Now, it will be observed that the higher the heel is raised by this type of shoe, the greater will be the curvature of the arched middle portion of the bottom and therefore the shorter will be the straight line distance between the heel and the toe. Since this spring arm or member 15, whose forward movement is limited by contact of the tip 15^a with the tip of the shoe toe, the spring tends to follow the contour of the shoe bottom, as shown in Fig. 4, but in any case the salesman making the measurement can press this spring member into contact with the intermediate arched portion of the shoe bottom so as to fully compensate for the fore-shortening of the straight line distance between vertical lines passing through the heel and through the toe of the shoe.

Now it is a well known fact that the length-size numbering of shoes is not based on a uniform standard. A shoe marked by one manufacturer as a No. 8 may be, and often is, actually of shorter length measurement than a shoe marked No. 7 by some other manufacturer, so that it is natural that the customer should be misled as to the actual length of shoe required.

With the use of the present device, however, it is possible to test any selected shoe in comparison with the actual length-size measurement of the foot to be fitted and demonstrate whether the selected shoe, no matter how it may be size numbered, is of appropriate length to fit the foot being measured. The device, therefore, does

away with all uncertainty due to lack of uniform size numbering and insures the customer a proper length of shoe in a manner that can be readily and visually demonstrated to the customer when selecting his shoe, and it is not even necessary for the customer to try on the shoe to demonstrate whether or not the shoe selected is of the appropriate length.

The device would be most effective and free from liability to error when the shoes are marked or numbered according to the length-size of the foot which it is intended to fit.

What I claim is:

1. A shoe fitting device embracing in its construction, crossed arms pivotally connected intermediate of their ends, the members of the arms on one side of the pivot being formed to caliper the overall length of an interposed foot, the members of said arms on the opposite side of the pivot being formed and dimensioned to be inserted in a shoe to caliper the inside length thereof, one of said shoe-calipering members being provided with a tip corresponding to the usual clearance space in the toe of a shoe, one of said arms being provided with a length-size scale and the other arm being provided with an indicating pointer for indicating the length-size measurement of the foot being calipered and of the shoe being measured.

2. A shoe fitting device embracing in its construction, a pair of crossed arms pivotally connected together intermediate of their ends, the arm members on one side of the pivot being adapted to form calipering contact with the heel and toe, respectively, of an interposed foot, one of said arms being provided with a length-size scale and the other arm being provided with an indicator movable in proximity to said scale to indicate the length-size measurements of the foot, the members on the other side of the pivot from the foot-calipering members being disposed to be inserted in and caliper the length-size of a shoe, both calipering members being dimensioned to have the same calipering distance when set in any given indicating position, and a detachable tip member secured to one of the shoe-calipering members to compensate for the extension space in the toe of the shoe being calipered.

3. A shoe fitting device embracing in its construction, a pair of crossed arms pivotally connected together at their crossing points intermediate of their ends, one of said arms being provided with a length-size scale, the other arm being provided with a length-size pointer movable along said scale, the members on one side of the center being disposed to caliper the overall length of a foot, the members on the other side of said center being of unequal length and disposed to caliper the inside length of a shoe, the longer of said shoe-calipering members including a flexible strip arranged to project into the fore part of the shoe and adapted to follow the profile of the shoe bottom whereby correct length measurement is obtained with varying heights of heel on the shoe.

4. A shoe fitting device embracing in its construction, a pair of crossed arms formed to provide on one side of the center foot-calipering members and on the other side of the center shoe-calipering means embracing rigid members, one of which is provided with a flexible spring extension provided at its outer end with a clearance block dimensioned to correspond with the size extension provided in said shoe, the respec-

tive calipering members being dimensioned to indicate the same length-size when calipering a foot as when calipering a shoe of proper internal length appropriate to fit said foot.

5 5. A shoe fitting device embracing in its construction a pair of crossed arms pivotally connected intermediate of their ends to form, on one side of the center, exterior calipering members with interior facing contact surfaces for
10 calipering the length of a foot and forming on the opposite side of the center a pair of shoe calipering members of unequal length provided

with outwardly facing contact surfaces arranged, when inserted in the shoe, to form calipering contact with the toe and the heel portion of the shoe, respectively, one of the crossed arms being provided with a shoe-size scale and the other crossed arm having a pointer movable over said shoe-size scale to register the same length-size on said scale when the foot calipers are calipering an interposed foot and when the shoe calipers are calipering the interior of a shoe of
85 appropriate size to fit said foot.

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