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I. R. WALTMAN

2,236,739

LAST DETERMINATOR

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Fig. 1

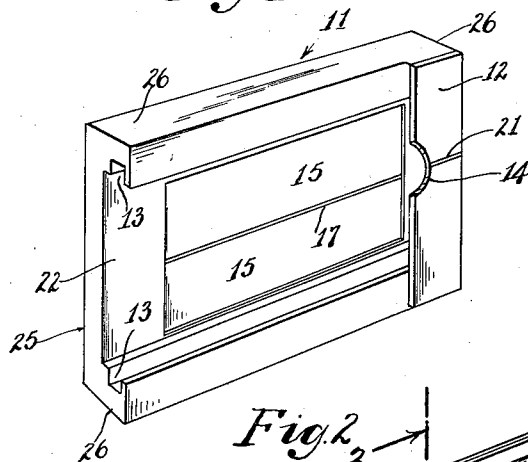


Fig. 3

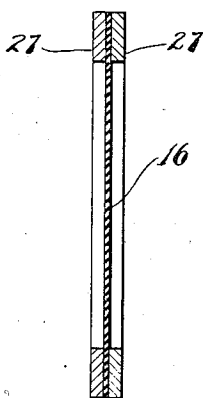


Fig. 2

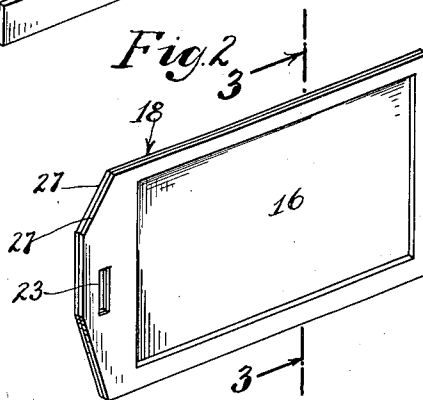


Fig. 4

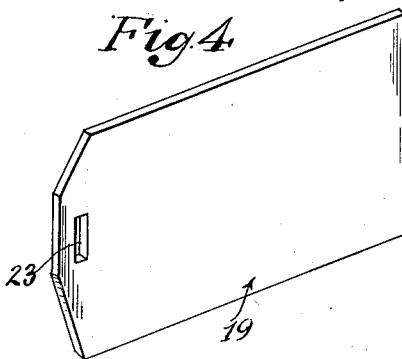
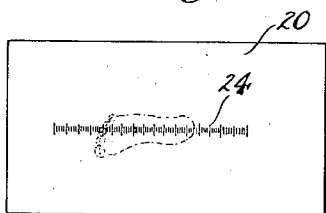


Fig. 5



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2 Claims. (Cl. 282—1)

This invention relates to a means for ascertaining the direction of the human foot, particularly the forefoot, to enable the proper fitting of shoes therefor.

At the present time, there are different devices in use for ascertaining what is generally considered to be the correct size of shoe for a foot, and which devices indicate to the eye, or record, the length and width of a foot, and according to such dimensions a shoe of a stock construction is provided. Normally, such stock shoes vary, apart from the different sizes, only in the construction of the arch portion, provision being made for high arches, low arches and the normal arch. Such devices are a more or less satisfactory means of fitting a shoe to a normal foot, but make no provision for those minor deformities and ailments such as corns, callouses, bunions, enlargement of bones and joints and bursitis (inflammation of the bursae sac) where they exist, and which, incidentally, have usually been induced by improperly fitted shoes.

The standard measurement for shoes is merely length and width. But, another important element in the proper fitting of a shoe is the "last," by which is meant the direction of the forefoot, since there are feet that deflect inwardly, and others outwardly, and some straight.

If we take a foot that deflects inwardly and put a straight last shoe on it the resulting deformities due to such improper fitting will be production of corns, callouses and bunions along the inner portion of the big toe, and production of corns and callouses on the bunion joint. It will also cause shortening of the extensor tendons leading to the big toe. If on the same type of foot we try a shoe the forefoot of which deflects outwardly, the same conditions will result, but with more severe manifestations.

If we take a foot that deflects outwardly and insert it in a straight last shoe the following deformities will result—production of corns, callouses and swelling of the head of the fifth metatarsal bone, production of corns on the little toe, production of bursitis on the rest of the dorsal surface of the toes, and a shortening of the extensor tendons leading to the four outer toes, and the production of callouses on the plantar surface in the region of the metatarsal area. If we take this same foot that deflects outwardly and insert it in a shoe that deflects inwardly the same conditions will result, but with more severe manifestations.

If a straight foot is inserted in a shoe that de-

fects inwardly, the deformities that result are as follows—corns, callouses, bursitis and enlargement of the head of the fifth metatarsal bone, production of corns, callouses, bursitis on the four outer toes, shortening of the extensor tendons leading to the four outer toes, depression of the metatarsal area. If we take a straight foot and insert it into a shoe the forefoot of which deflects outwardly, we produce corns, callouses, bursitis and enlargement at the head of the first metatarsal to form a bunion; also the production of corns and callouses along the inner portion of the big toe.

My invention aims to provide means for determining the direction in which the forefoot runs and the use of which will show not only the proper length but also such deformities as exist, thus enabling the selection of a shoe that will relieve existing ailments, and prevent the formation of such common foot ailments as corns, bunions, callouses and the like, and to this end I have designed a new and novel recording device that will determine the direction in which the forefoot runs, further details of which, and the operation of which will be described with reference to the accompanying drawing, in which:

Figure 1 is a top perspective view of my device with the movable parts removed;

Figure 2 is a perspective view of the rubber centered impression platen;

Figure 3 is a cross section, on a larger scale, of Figure 2, on the line 3—3;

Figure 4 is a perspective view of the platen for supporting the recording chart;

Figure 5 is a plan view of the recorded sheet.

My recording device consists of an open box-like structure 11, sufficiently long and wide to accommodate a foot. The upper end 12 of the box is closed and the lower end open, while the sides are grooved, as at 13, on their inner portions, to receive and hold the recording elements. In the closed end of the box there is fashioned a heel seat 14. Embedded in the bottom 22 of the box is an ink pad 15 for inking the under surface of the impression rubber 16, and across the surface of which pad, and bisecting it lengthwise, is a thin metal strip 17. The impression platen 18 is inserted in the grooves 13 and when over the ink pad 15 the impression rubber 16 is pressed down by hand or otherwise and the underside thereof thoroughly inked. The inking will be bisected by a clear line caused by the uninked metal strip 17, and this line will show through on the upper side of the impression rubber 16. The supporting platen 19 is then placed

in position in the grooves 13, under the impression platen 18, and upon the supporting platen is placed a chart 20 containing the conventional foot gradations 24. The platen 19 and chart 20 are then pushed into place under the inked platen 18. The blank bisecting line showing through the inked impression rubber 16 is then aligned with the bisecting line 21 through the heel seat and the device is ready for use. The foot is then placed in its normal position on the rubber impression sheet 16, the heel being placed in the heel seat 14, the tendon of Achilles being then perpendicular to the line 21. Pressure of the foot on the rubber 16 imparts, through the inked under surface, an impression of the foot to the chart 20, which impression will then show not only the length but also the last or direction of the foot and such deflection as exists, and from which chart can readily be determined the proper shoe to conform to such direction.

In its preferred form I have found that a box-like structure twenty inches long and ten inches wide provides a proper receptacle for the recording elements and the practice of my invention. In a construction of that size the basic platen, or bottom of the box, 25 should be one inch thick. Embedded in this is the ink pad 15, eighteen inches long and seven inches wide and sufficiently deep, about one-quarter inch, to hold a supply of ink. The three walls, 26, of the box are four inches high and one inch in thickness. The impression platen 18 is nineteen and one-half inches long and nine and one-half inches wide, the center of which is composed of a sheet of rubber, 16, such as dental dam, suspended midway of the upper and lower surfaces of the surrounding frame and drawn taut so that when the foot is pressed down there will be a certain stretch to the rubber, preventing a blurred impression of the foot on the chart.

The supporting platen 19 is of the same length and width as the platen 18 but not necessarily as thick. Both platens 18 and 19 extend outside the open end of the box 11 to provide a gripping means 23 for readily withdrawing those elements

as required. The foregoing dimensions, while providing a practical apparatus, are not essential to my invention, and may be varied as circumstances indicate. Also, it is not essential that the inking medium be contained in the box 11 as a separate inking pad can be used, but its inclusion in the structure of the box provides a compact and always available medium for inking the impression rubber 16.

The structure described can be made of wood, metal rubber or plastics, the only essential being that it is capable of supporting the weight of the user.

It will be seen that I have invented a simple, compact and inexpensive apparatus for the purposes described, and one that is easy to handle and which permits of quickly and easily replacing the impression rubber and inking pad, which are the only parts likely to be affected by wear and time.

What I claim is:

1. A device for determining the direction or last of the human forefoot, comprising an inking pad, a rubber impression sheet, a platen for holding such impression sheet, said inking pad having a bisecting line lengthwise to produce a corresponding bisecting line on the inked surface of the impression platen, a chart for recording the impression of a foot, a platen for holding said chart in proper relation to said impression platen when inked, a bisected heel seat for positioning the foot, and means for containing said elements in proper relation to each other.

2. A device for determining the direction of the human forefoot, comprising a basic platen, grooved side walls extending upward from said platen, an end wall, a bisected heel seat positioned on said side walls, a platen holding a rubber impression sheet, means for inking the underside of said sheet, a supplementary platen for holding a chart in relation to said rubber impression sheet, said impression and supplementary platens having extended gripping ends for readily manipulating same.

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