Aug. 30, 1949. P. S. DOUMITT 2,480,361

FOOT CONDITION INDICATOR

Original Filed Sept. 6, 1939 2 Sheets-Sheet 1

FIG. 1.

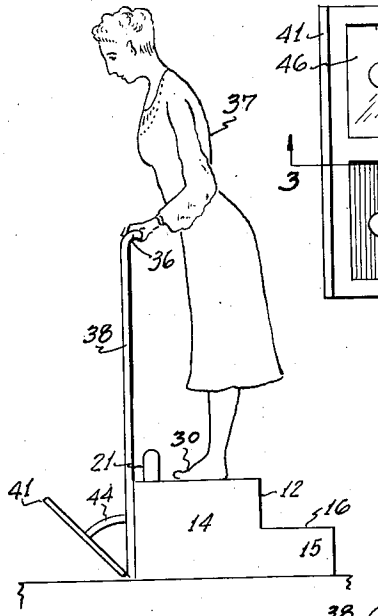


FIG. 2.

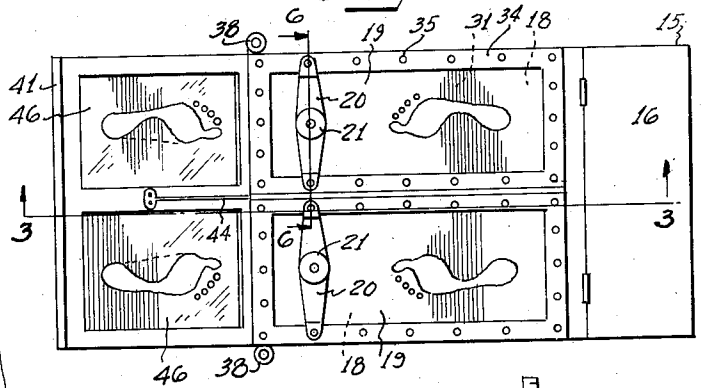


FIG. 5.

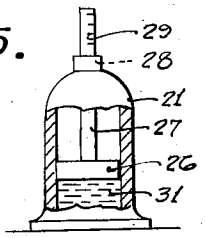


FIG. 3.

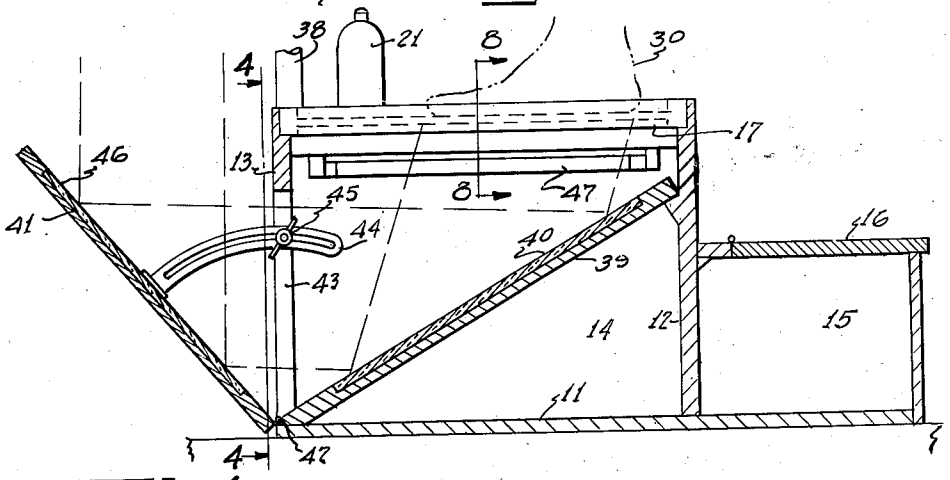
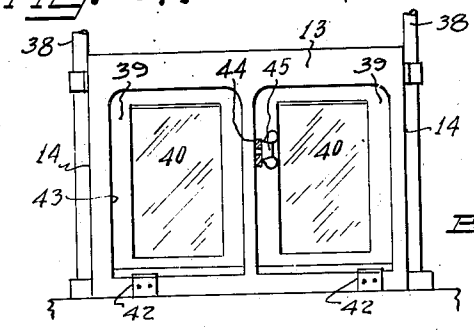


FIG. 4.



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FIG. 6.

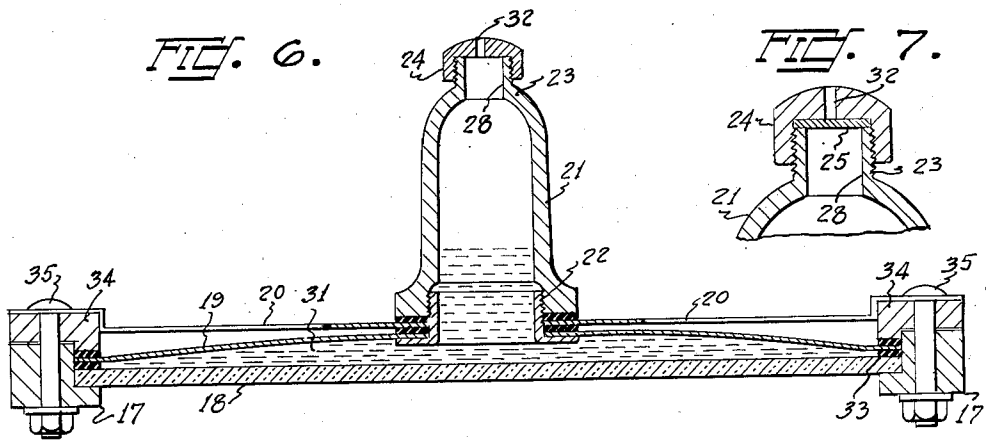


FIG. 7.

FIG. 8.

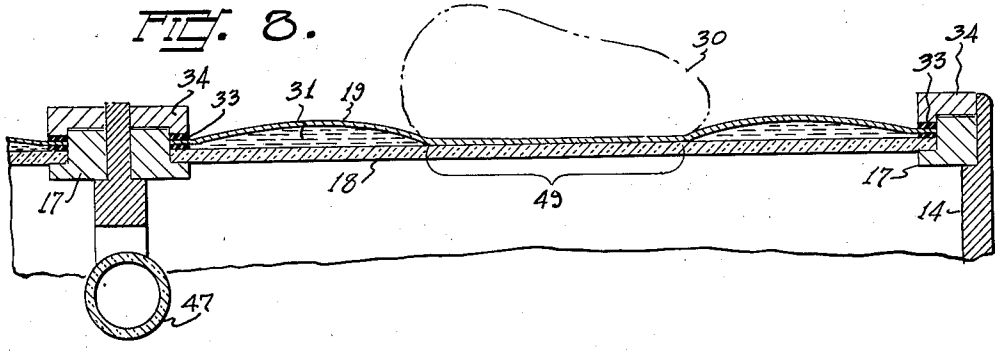


FIG. 9.

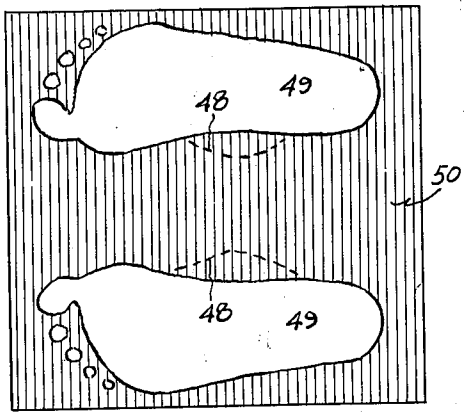
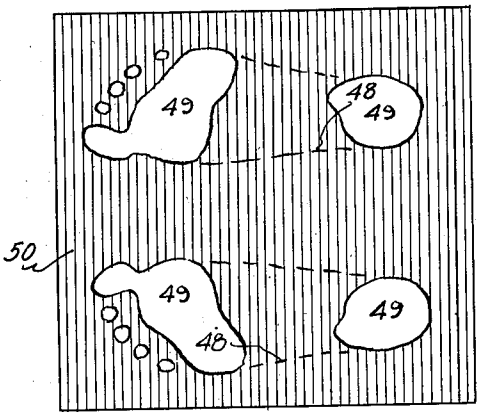


FIG. 10.



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2,480,361

FOOT CONDITION INDICATOR

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Substituted for application Serial No. 293,555, September 6, 1939. This application April 25, 1949, Serial No. 89,529

2 Claims. (Cl. 128—2)

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This application is a substitute for previously abandoned application Serial Number 293,555 filed September 6, 1939.

This invention relates generally to the science of foot correction, and particularly to a foot condition indicator.

The main object of this invention is to construct an apparatus whereby it would be easily possible for the foot specialist, be he a doctor or a shoe merchant, or the patient or patron, to clearly visualize the condition of the foot, that is, whether it is normal or flat foot or high arch or has any other marked irregularities.

The second object is to construct an apparatus of the class described which will instantly and accurately illustrate not only the contact area between the ground and the bones of the foot, but also to indicate the relative positions of those bones which are not in close contact with the ground.

The third object is to construct the device as to render same easily operated and adjusted and at the same time relatively simple to manufacture and not inclined to get out of order.

The fourth object is to construct an apparatus whereby relative changes in the contact area may be indicated in a form which may be easily recorded in order to assist in determining if a given type of shoe is changing the foot condition.

These and other objects are accomplished in the manner set forth in the following specification as illustrated in the accompanying drawing, in which:

Fig. 1 is a side elevation showing the apparatus in use.

Fig. 2 is a plan of the apparatus.

Fig. 3 is a longitudinal section taken along the line 3—3 in Fig. 2 with the upper portion of the support broken away.

Fig. 4 is a section taken along the line 4—4 in Fig. 3.

Fig. 5 is a section through the indicating attachment.

Fig. 6 is a vertical section taken along the line 6—6 in Fig. 2.

Fig. 7 is a fragmentary view showing the method of sealing the indicator fluid reservoir during shipment.

Fig. 8 is a section taken along the line 8—8 in Fig. 3.

Fig. 9 is a view showing the manner in which a flat foot condition is indicated on a red background.

Fig. 10 is a view showing the manner in which a high arch condition is indicated on a red background.

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Similar numerals of reference refer to similar parts throughout the several views.

Referring in detail to the drawings, there is shown a base 11 upon which is formed a boxlike cabinet consisting of the rear wall 12, the front 13 and side walls 14. The storage box 15 is disposed against the back 12 and its hinged top 16 serves as a step.

Across the top of the cabinet and supported by the walls 12, 13 and 14 are placed a pair of sash 17 in each of which is disposed a heavy glass plate 18 of sufficient strength to support the weight of the person whose feet are being observed.

Secured around the edges of each transparent glass 18 is a transparent membrane 19. Mounted on a bridge 20 which is secured to its respective sash 17 is a liquid reservoir 21 which communicates with the space between the membrane 19 and the glass 18, through the flanged bushing 22. The upper end 23 of the reservoir 21 is threaded to receive the perforated air vent cap 24. For shipping purposes a gasket 25 is placed under the cap 24.

In some instances, the reservoir 21 may be supplied with a float 26 having a piston rod 27 attached thereto which projects upwardly through the hole 28 permitting the graduations 29 to be read on the upper edge of the end 23.

It can be seen that as the foot 30 is placed upon the membrane 19 that the liquid 31 is displaced into the reservoir 21, that is, the portion of the foot wherein the bones are nearest to the glass 18 will expel all of the liquid 31 from between the membrane 19 and the glass 18 causing it to rise in the reservoir 21 and displace the corresponding amount of air from the hole 32 in the vent cap 24.

In order to hermetically seal the membrane 19 to the glass 18, suitable gaskets 33 are provided and these are held in place by means of the clamping strips 34 and the bolts 35 which pass through the sash 17.

It is desirable to provide a railing 36 for the convenience of the user 37, the railing being disposed across the upper end of the standards 38 which are secured to the cabinet walls 14.

Within the cabinet and disposed between the walls 14 is an inclined plate 39 upon the upper side of which is mounted the reflecting mirror 40. A door 41 which is connected to the plate 39 by means of a hinge 42 also forms a closure for the opening 43 in the front wall 13. The

angularity of the door 41 can be controlled by means of the slotted arm 44 which is attached to the door 41 and the clamping screw 45 which is secured to the front 13. The reflecting mirrors 46 are secured to the door 41 on the side facing the mirror 40.

It is desirable to provide a lamp 47, preferably of the tubular variety, along the under side of the sash 17, preferably between the two portions thereof.

In Fig. 9, for example, is shown an illustration of how the feet of a flat footed person would appear to the observer. The dotted lines 48 indicate the position of the bones which are somewhat remote from the ground level. The same is true of Fig. 10 wherein is shown an example of high arch feet. The uncolored areas 49 indicate the areas of contact and the red areas 50 indicate the portion of the glass through which the colored liquid 31 can be seen.

The operation of the device is as follows:

When it is desired to observe the condition of a person's feet, that person first removes his shoes and then stands upon the membranes 19, there being one for each foot. Owing to the fact that there is a column of liquid 31 in the reservoir 21, there is a slight pressure on the liquid under the membrane 19, thus the portion of the foot wherein the bones are near the under surface will force the liquid 31 away from the glass 18 and the image of this bony portion will be reflected by the mirrors 40 and 46 to the eye of the observer 37.

If, for example, the foot specialist wishes to make a record of a given condition, he uses the attachment shown in Fig. 5 and enters in his records the readings on the rod 27 before and during the time the foot is resting on the membrane 19, the difference in the readings corresponding with the change in the contacting areas. The membrane 19 is preferably transparent.

It must be understood that while two persons

showing the same readings may have flat feet and high arches respectively, the readings being similar due to a difference in foot size as well as the weight thereon, these readings will remain relative in a given case enabling one to detect changes in the feet as evidenced by the contacting areas thereof.

I claim:

1. In a device of the class described, the combination of a light cabinet having a transparent top and having a transparent membrane disposed over said top and hermetically sealed thereto about its outer edges, a reservoir mounted over said transparency communicating with the space between said transparency and the membrane, a quantity of colored liquid contained within said reservoir and the space between said membrane and transparency, and adjustable reflectors adapted to reflect images from the under side of said transparency upwardly to the eye of a person standing upon said membrane.

2. In a device of the class described, the combination of a transparent table constituting the bottom of a liquid container, a cover for said container consisting of a resilient membrane, means for yieldably confining a colored liquid between said transparency and said membrane, means for illuminating the underside of said transparency, means for reflecting an image from the underside of said transparency to the eye of a person standing above said transparency, an upright cylinder having its lower end communicating with the liquid containing compartment and having a graduated piston therein projecting from the top thereof whereby the displacement of liquid under a given membrane may be indicated upon said piston.

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No references cited.