May 7, 1935. W. M. SCHOLL 2,000,256

FOOT MEASURING AND IMPRESSION DEVICE

Filed Aug. 26, 1933

Fig. 1.

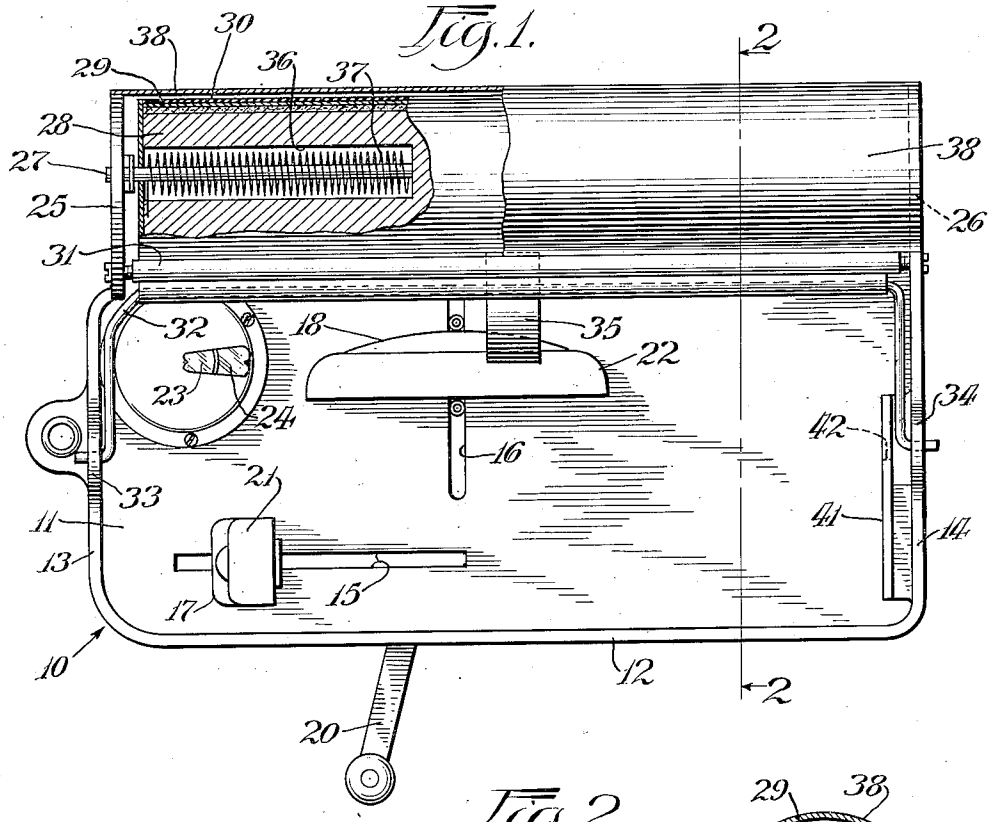


Fig. 2.

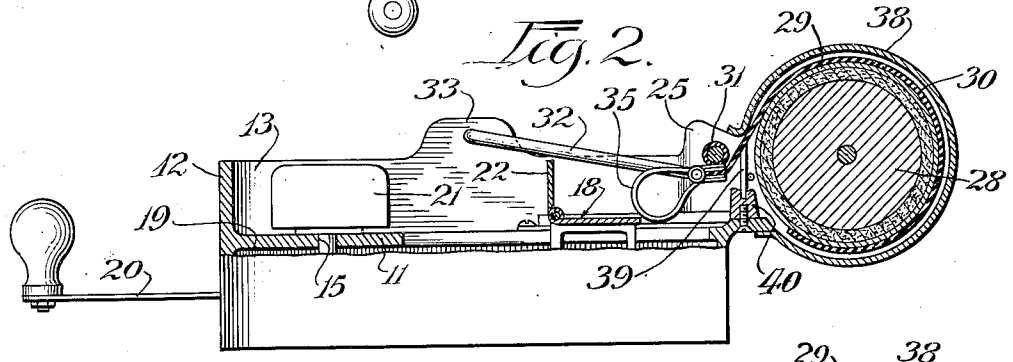
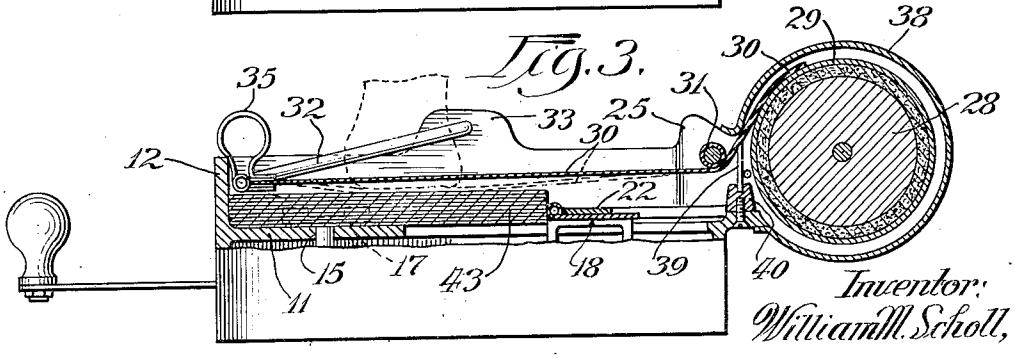


Fig. 3.



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2,000,256

FOOT MEASURING AND IMPRESSION DEVICE

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5 Claims. (Cl. 282—1)

My invention relates to foot measuring and impression devices and is concerned more particularly with providing a unitary and easily transportable apparatus that may be used either to make accurate determinations of the length and width of a human foot, or to take foot impressions that provide information respecting the configuration of the foot as well as its size.

In the fitting of footwear, the selection of the proper shoe for any particular person should be based upon accurate information respecting the foot and this knowledge should not only include data on the length and width of the foot, but also precise information regarding any abnormalities thereof, such as may be produced by fallen arches, enlarged joints, callouses, and like ailments. Devices are now in use for determining foot widths and lengths, and there are other devices for taking impressions of the foot by pressing the latter against an ink-carrying member which in turn presses against a sheet of paper, so that a shoe retailer, for example, is required to have one of each kind to provide efficient shoe fitting. Moreover, in many cases, the nature of the construction of present foot impression devices is such that considerable pressure of the foot is required in order to make an intelligible impression. The securement of this adequate pressure is frequently quite difficult, particularly where the person has weak feet or legs, or in the case of a child, so that it is important to provide an impression device which requires a minimum of pressure in the obtaining of proper impression.

It is therefore the principal object of my invention to provide a single apparatus which possesses the capacity both for ascertaining foot lengths and widths and also for taking efficient foot impressions.

A further object is to provide an apparatus of the character indicated in which those members which contact the foot to determine its length and width are also utilized to position an impression-receiving member, such as a sheet of paper.

A further object is to provide a foot impression device in which the ink-carrying member, usually a sheet of rubber, is secured at one end to and wrapped around a roll, the sheet being capacitated for movement over and spaced sufficiently close to the sheet of paper which receives the impression to require only a slight pressure of the foot for making an adequate impression.

A further object is to devise a foot impression device in which the rubber apron is wrapped around a spring retracted roll, the free ends of the apron being secured to a bail whose arms are pivotally mounted on the frame in such a position that when the apron is in position to make an impression, the bail is located below its pivot and the apron is therefore held in operative position by the retracting action of the spring in the roll.

These and further objects of my invention will be set forth in the following specification, reference being had to the accompanying drawing, and the novel means by which said objects are effectuated will be definitely pointed out in the claims.

In the drawing:

Figure 1 is a plan view, partly in section, of my improved foot measuring and impression device, the rubber apron being shown wrapped around its roll to thereby expose the base of the device and the foot contacting members which determine the foot and width measurements of the foot.

Fig. 2 is a section along the line 2–2 in Fig. 1, looking in the direction of the arrows, showing the several parts in position to measure the length and width of a foot.

Fig. 3 is a section similar to Fig. 2, but showing the rubber apron extended over a pad of paper, for example, and a foot pressing against the apron to make the impression.

Referring to the drawing, the numeral 10 designates the principal frame of the device which comprises a base 11 having upstanding side walls 12 and end walls 13 and 14, the base and walls forming generally a foot receiving receptacle. A pair of normally disposed slots 15 and 16 are provided in the base 11, the slot 15 extending generally lengthwise of the base and the slot 16 transversely thereof.

Foot contacting members 17 and 18 are guidably mounted in the slots 15 and 16, respectively, and these members are actuated by a mechanism (not shown) that is located in a chamber 19 beneath the base 11. This mechanism is controlled by a handle 20 that projects through the side walls 12. The arrangement of this mechanism is substantially as disclosed in the patent to Cobb et al., No. 1,792,892, dated February 17, 1931, for a foot measuring implement. The specific details of this mechanism form no part of the present invention and reference may be had to the aforesaid Cobb patent for the essential features thereof, it being understood for the purpose of the present application that the members 17 and 18 may be

placed in the positions shown in Fig. 1 by actuating the handle 20. Thereafter, the foot may be rested upon the base 11 and the members moved into contact therewith by the handle 20 to determine its length and width in the general manner hereinafter described. In order to provide an adequate surface contact with the foot, the members 17 and 18 are preferably provided with hinged shields 21 and 22 which may be rotated into the position shown in Fig. 2 when taking length and width measurements of the foot, and thereafter rotated downwardly to overlie the respective members when it is desired to take an impression of the foot, as illustrated generally in Fig. 3.

Foot measurements, as determined by the members 17 and 18, may be exhibited on suitably calibrated dials 23 and 24, all as more particularly explained in the aforesaid Cobb patent.

The end walls 13 and 14 are extended beyond the base 11 to form barckets 25 and 26, respectively, and an axle 27 is bridged between these brackets and held against rotation therein. A roll 28 is revolubly supported upon the axle 27 and is provided on its periphery with an inking surface, such as a silk covered felt pad 29, a characteristic roll construction being disclosed in the patent to Rosino, No. 1,225,500, dated May 8, 1917, for a device for taking foot impressions.

An ink carrying member, such as a rubber apron 30 is wrapped around the roll 28 and extended beneath a guide roll 31 which is rotatably supported between the brackets 25 and 26. Beyond the roll 31, the free end of the apron 30 is secured to a bail 32 whose arms are further extended towards the wall 12 for insertion through suitable apertures provided in ears 33 and 34, that extend upwardly from the end walls 13 and 14, respectively. The bail 32 is accordingly pivotally supported on these end walls and, as clearly shown in Fig. 2, the bail pivots are preferably slightly disposed above the guide roller 31 for a purpose presently explained. In order to provide for convenient actuation of the apron 30, a finger loop 35 is secured thereto around the bail 32.

A bore 36 extends inwardly from one end of the roll 28 and is concentrically disposed with reference to the axle 27 for the purpose of receiving a coil spring 37, one end of the spring being secured to the axle and the other end to the roll. These parts are so arranged that the spring serves to maintain the apron in the retracted position shown in Fig. 1.

In the commercial form of the device, a cover 38 preferably encloses the roll 28 and is supported at its ends on the brackets 25 and 26. In order to provide for an even distribution of the ink which is transferred to the apron by the ink pad, a distributing fin 39 is employed which contacts with the underside of the apron as it leaves the roll, as clearly shown in Fig. 2, and this fin is mounted in the strip 40 which is secured to the base 11.

A heel plate 41 extends upwardly from the base 11 in spaced relation to the end wall 14 and this plate affords a backing for the heel of the foot when placed on the base as hereinafter described. The plate is provided with an open ended slot 42 which is in substantial registration with that arm of the bail which extends through the ear 34. By reason of this slot, it is possible to easily detach the bail from the frame merely by pressing the arms of the bail toward each other, the right arm of the bail, as viewed in Fig. 1, passing through the slot 42 during this movement.

As already indicated, my improved device may be used to either ascertain the length and width measurements of a foot, or to make impressions thereof on a suitable impression receiving means. Assuming that it is first required to simply measure the length and width, the foot contacting members 17 and 18 may be moved to their outermost position by means of the handle 20, as described more particularly in the aforesaid Cobb patent, after which the foot is rested on the base 11 with the heel thereof contacting the plate 41 and one side of the foot touching the side wall 12. The members 17 and 18 are then moved toward the foot by the handle 20 until contact is established, it being understood that the hinged members 21 and 22 occupy the upward positions shown in Fig. 2. When the members contact with the foot, suitable readings may be had from the dials 23 and 24 and the members may then be retracted to the positions shown in Fig. 1.

In taking a foot impression, a suitable impression receiving member, such as the pad of paper 43, is rested on the base 11 with an end and one side thereof contacting with the heel plate 41 and the side wall 12. The remaining end and side of this pad may then be contacted by the members 17 and 18 in order to definitely position the pad and retain the same in this fixed position. Thereafter, the apron 30 is moved over the pad 43 by pulling on the finger loop 35, this action swinging the bail from the position shown in Fig. 2 to that illustrated in Fig. 3. In the latter position, it will be particularly noted that, not only is the apron disposed a relatively small distance above the surface of the pad, but the apron is held in this position by the retracting effort of the spring 37 because of the "over-center" position of the bail.

The foot may then be pressed against the apron and then against the pad 43 and those parts of the apron to which pressure is applied will effect an ink transfer to the pad. The impression so made will be somewhat shadowy in appearance and will thereby indicate abnormalities of the foot because those parts which protrude the most will produce the darkest areas on the impression because of the increased pressure. Many ailments of the foot may thus be effectively ascertained and a proper decision made regarding the style of footwear.

The provision of spacing the apron just slightly above the upper surface of the pad 43 is an important feature of this invention, because it substantially lessens the amount of pressure required to effect an adequate impression, owing to the short distance through which it is necessary to displace the apron. This operating advantage is further enhanced because of the location of the guide roller 31 which is preferably disposed so as to obtain a parallel disposition of the apron with reference to the top surface of the pad 43. By requiring a minimum of foot pressure to obtain an efficient impression, it is possible for a person with weak feet or legs, or children, to use this device and still obtain impressions which are intelligible to the fitter of shoewear.

I claim:

1. A foot impression device comprising a foot receiving receptacle having a base for support-

ing an impression receiving means, a rolled inking member offset from one side of the receptacle and adapted to be unwound for movement over the means, spring means for normally maintaining the member in wound position, a pivoted bail secured to the free end of the member, the bail pivots being located a sufficient distance above the base to permit the bail being swung below the pivots and to be held in operative position over the base by the pull of the spring means, and a guide roller under which the member is drawn for directing the same into substantially paralled relation to and at a relatively small distance above the impression means.

2. A foot impression device comprising a foot receiving receptacle having a base provided with upstanding end walls, a rolled inking member mounted on the end walls and adapted to be unwound for movement over the base, spring means for normally maintaining the member in wound position, a bail secured to the free end of the member and having its ends extended through apertures in the end walls for pivotal mounting thereon, and a heel plate spaced from one end wall and having an open-ended slot in substantial registration with one of said apertures, to permit a withdrawal of the adjacent bail arm from the aperture through the slot when the bail is disengaged from the end wall, the plate serving as a stop for the heel during the taking of an impression and shielding the heel from the adjacent bail arm.

3. A foot impression device comprising a foot receiving receptacle having a base provided with upstanding end walls, a rolled inking member mounted on the end walls and adapted to be unwound for movement over the base, spring means for normally maintaining the member in wound position, a bail secured to the free end of the member and having its ends extended through apertures in the end walls for pivotal mounting thereon, and a heel plate spaced from one end wall to serve as a stop for the heel during the taking of an impression and shielding the heel from the adjacent bail arm.

4. A combination device for taking measurements and impressions of the foot comprising a base for supporting an impression-receiving means and provided with an upstanding end and side wall for contacting one end and one side of the foot, respectively, length and width members shiftable across the base to contact with the opposite end and side of the foot, respectively, and to position the impression-receiving means against the end and side wall, and an ink carrying member movable over the impression-receiving means and adapted to be pressed thereagainst by the foot.

5. A foot impression device comprising a foot receiving receptacle having a base for supporting an impression-receiving means, an ink carrying member movable into position over the impression-receiving means, a roller on which the member is wound, ink distributing means adapted to wipe over the inked side of the member when the latter is unwound, and a guide roller for directing the member into contact with the distributing means and into substantially parallel relation to and at a relatively small distance above the surface of the impression-receiving means.

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