FOOT IMPRINTING DEVICE
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This invention relates to improvements in a foot imprinting device, and more particularly to a device highly desirable for use in a shoe store, doctors and chiroprists offices, laboratories, hospitals, and other locations wherein it may be desirable to take an imprinted imprint of the plantar surface of the human foot to accurately denote particular characteristics of an individual foot and to aid in properly treating the foot if it is deformed or afflicted, the invention obviously being suitable for taking imprints of the hand or other parts of the body, as will be apparent to one skilled in the art.

In the past, many and various types of foot imprinting devices have been developed, and some of these formerly known devices included inking rolls around which an imprinting curtain was wound, the curtain being extendable over an imprinting platform. However, in all instances of which I am aware these formerly known devices were objectionably expensive to manufacture in that the platform and rolling housing were fabricated of a number of pieces of material. Also, devices of this kind heretofore known were not as efficient as desired in applying a smooth and sufficient coating of ink on the imprinting curtain, and the imprinting curtain could not be manipulated with the facility and rapidity that is desired.

With the foregoing in mind, it is an important object of the instant invention to provide a handy, portable and sanitary foot imprinting device, wherein the imprinting or impression platform and housing for the inking rolls are cast as a unit in one single piece from any suitable moldable material.

Another object of the invention resides in the provision of a foot imprinting device having an impression platform and a housing for an inking roll with an imprinting curtain extendable over the platform, equipped with simple overcenter means for actuating the curtain to its extended or to its contracted position.

It is also a feature of this invention to provide a foot imprinting device having a highly efficient inking roll of novel construction which contains the supply of ink therein and evenly distributes ink over an imprinting curtain wound around the roll.

Still a further object of the invention resides in the provision of a foot imprinting device containing an inking roller with a curtain therearound, said curtain being extendable over an impression platform during use, and the arrangement being such that ink is only applied to the curtain during movement to and from the extended position.

Still a further object of the instant invention resides in the provision of a foot imprinting device having an inking roller with an imprinting curtain wound therearound, a roller being so contoured to ensure an even and relatively thin application of ink to the underside of the curtain for each imprinting operation.

Also a feature of the invention resides in the provision of a foot imprinting device of exceedingly simple and economical construction and which is very rapid in use. While some of the more salient features, characteristics and advantages of the instant invention have been above pointed out, others will become apparent from the following disclosures, taken in conjunction with the accompanying drawings, in which—

Figure 1 is a top plan view of a foot imprinting device embodying principles of the instant invention;

Figure 2 is an enlarged fragmentary vertical sectional view taken substantially as indicated by the line II—II of Fig. 1, looking in the direction of the arrows, and showing the imprinting curtain in fully extended position ready for use;

Figure 3 is a view similar in character to Fig. 2, but illustrating the imprinting curtain in retracted position;

Figure 4 is a top plan view of the inking roller, without the curtain thereon, showing the same with parts broken away to illustrate the parts there beneath;

Figure 5 is an enlarged fragmentary vertical sectional view taken substantially as indicated by line V—V of Fig. 4, illustrating the inking roller core;

Figure 6 is a fragmentary sectional view through the casing with the inking roller removed to illustrate the end support for the roller at one side of the casing;

Figure 7 is a transverse sectional view, enlarged, through the inking roller and taken substantially as indicated by the line VII—VII of Fig. 4;

Figure 8 is a transverse sectional view through an inking roller of slightly different construction, with the imprinting curtain removed; and

Figure 9 is a plan view, similar in character to Fig. 4, with parts broken away to illustrate structure there beneath, of an inking roll of still different construction.

As shown on the drawings:

In the illustrated embodiment of this invention there is shown a foot imprinting device embodying an impression or imprinting platform 1 having reinforcing ribs 2 on the underside thereof, as seen best in Figs. 2 and 3. This platform 1 is provided with a shallow depression in its upper face outlined by a bounding wall 3. As seen in Fig. 1, the wall 3 at one point is notched as at 4 to facilitate removal of the topmost one of a stack of impression cards 5 (Figs. 2 and 3) positioned in the recess of the platform 1. Also, with reference to Fig. 1, it will be seen that at one end of the platform, an upstanding heel seat 6 is provided to aid in positioning the foot of the patient over the platform 1.

Along one side of the platform is an upstanding housing 7 for the inking roller and imprinting curtain, when the latter is not in use. Adjacent the top of the inside reach of the wall 3 an elongated slot 8 is provided in the housing through which the imprinting curtain may be extended and retracted. Further, the housing is open at the bottom, and access to the interior of the housing may be had through such bottom opening, which may be covered by a removable plate 9 held in place by a bolt or screw 10 at each end thereof, each of which bolts may engage in an internally threaded boss 11 integral with the end wall of the housing, as seen in Fig. 6.

With the exception of the plate 9 and bolts 10, all of the structure above described is preferably cast or molded in one single piece. The platform 1 and housing 7 may be molded as a single unit from any suitable moldable material, such as a thermosetting phenolic condensation product.

Mounted for rotation within the housing 7 is an inking roll generally indicated by numeral 12, and an imprinting curtain 13 has one end thereof affixed to the roll as indicated at 14, and the opposite end provided with a marginal loop 15 and also with a looped handle 16 for
manipulating the curtain. This curtain may well be made of relatively thin highly resilient rubber, or other suitable material. Extending through the marginal loop or hem 15 is the bight 17 of a U-shaped actuating member in the form of a rod, the legs 18-18 of which are outturned at their extremities and hinged or pivoted to opposite ends of the wall 3 on the impression platform 2, by suitable stirrups 19-19 or the equivalent, as seen in Fig. 1.

The inking roll 12, as seen best in Figs. 2, 3, 4 and 5, includes a core 20 of thermosetting plastic, metal, or any other suitably rigid and impervious material. An end cap 21 is secured in the top end of the core 20 to thereby form a hollow receptacle. Each end cap has welded or equivalently secured to the outer surface thereof a base 22 from which a fixed stub shaft 23 projects upon which stub shaft the roll may rotate. A series of relatively minute outlet apertures 24 are provided in the upper portion of the roll as seen in Figs. 4 and 5, and in the illustrated instance there are three rows of such apertures with the apertures in adjacent rows staggered in relationship. Ink from the roll may seep through these apertures when they are disposed but a small portion of the ink is provided on the bottom portion near an end thereof with an apertured filling boss 25 normally plugged by a stopper or bolt 26, and the filling boss is preferably disposed diametrically opposite the outlet apertures. Around the core member is a sleeve 27 which is preferably of loosely woven fabric, this sleeve being merely a spacer to keep an outer sleeve 28 of wicking material, such as felt treated to have good wicking action, away from direct contact with the core tube over the apertures, so as to avoid possible clogging of the apertures by fibers from the wicking material. An external covering 29 of relatively thin and smooth porous fabric may be provided over the wicking material 28 if deemed necessary, and the aforesaid imprinting curtain 13 is wound outside of the ink distributor sleeve 29. Of course, all sleeves are provided with a suitable aperture to permit access to the plug 26 for the filling port of the core member.

With reference to Fig. 7 it will be seen that at one end thereof, outside the respective end cap 21 in the core 20, the roll is provided with a coiled spring 30, the inner end of which is secured to the stub shaft 23, and the outer end of which is provided with a loop 31.

At each end of the housing 7 an upstanding mounting bracket 32 is secured to the housing wall in any suitable manner. The mounting bracket is provided with a suitable socket 33 for reception of the stub shaft 23 at one end of the roll, and the bracket 32 illustrated in Fig. 6 is for the stub shaft at the spring end of the roll. It is merely necessary to insert the stub shaft in the socket 32, and place the loop 31 of the spring over a projecting pin 34. When so mounted, the roll will function in the manner of the commonly known window shade, the spring tending to maintain the roll in position with the imprinting curtain wound up.

Also journaled in a suitable socket 35 on each end plate 32 in a position adjacent the slot 8 in the housing wall is a guide roller 36 over which the imprinting curtain must travel from the roll to the slot.

In operation, the instant invention is extremely simple and positive. In order to take an imprint of a patient's foot, it is simply necessary to grasp the finger loop 16 on the curtain 13, and pivot the U-shaped supporting rod 17-18 from the position seen in Fig. 3 to that seen in Fig. 2 without the curtain being extended over the platform 1. It will be noted that no holding means are necessary to maintain the curtain in position to take an imprint, because the bight 17 of the curtain control rod is over center, in that the axis extends beyond a plane through the axis of the pivoted leg ends and the axis of the guide roller 36. In order to move the curtain to retracted position it is simply necessary to flip up the end of the curtain from the position seen in Fig. 2, and the spring in the inking roll will retract the curtain.

Now it will be noted that the ink outlet apertures 24 in the core of the inking roll are disposed upwardly or on the top of the roll both when the curtain is in retracted position and when the curtain is in extended position. The curtain and the roll are sized relatively to each other so one or more full revolutions of the inking roll occurs each time the curtain is moved from one position to the other. In the illustrated instance one full revolution of the inking roll is sufficient for extension of the curtain. During the extending operation and during the retracted position, the ink outlet apertures are distributing ink on the wicking sleeve for a part of the time. That is sufficient to maintain the wicking sleeve sufficiently moist to transmit an even film of ink to the underside of the imprint curtain. When it is desired to replenish the ink supply in the inking roll, it is a simple expedient to remove the plate 9, and the plug 26 of the filling port, and fill the roll core slightly less than half full in most cases. Such a supply of ink will last for a considerable length of time.

In taking an imprint of the foot, it is a simple expedient merely to position the foot on the platform 1, and then the patient places his foot upon the inked curtain 13. The curtain flexes downwardly and an impression of the foot is taken on the uppermost one of the cards 5. Immediately after the taking of the imprint, the curtain is slipped back into retracted position, and the topmost card bearing an accurate imprint removed from the platform recess. The entire device is easily portable, may be placed in substantially any desired location on a flat surface, and is not only economical but pleasing in appearance and highly sanitary.

In Fig. 8 I have disclosed a slightly different form of inking roll which comprises the same core 20 with the outlet apertures 24 therein as above described. In this instance, however, the core is covered by a sleeve 37 of wicking material in the form of porous foam latex through which the ink will pass, and this sleeve in turn is preferably covered by distributing sleeve 38 of the same character as the aforesaid sleeve 29. The inking roller shown in Fig. 8 may be more desirable for use with certain types of ink than the roller of Figs. 4, 5 and 7, depending somewhat upon the viscosities of the various inks in use.

In Fig. 9 I have illustrated a still different construction for the inking roll wherein the same core member is utilized as above described, and wherein the same wicking sleeve 28 with a distributing cover 29 as described in Figs. 4, 5 and 7. However, in this instance, spaced bands 39 of wicking material, preferably of lesser thickness than the sleeve 28 are disposed around the core member between the apertures 24. These bands 39 adequately space the wicking sleeve 28 from the core member, and the bands being also of wicking material will effect lateral distribution of the ink so that there will be no regions devoid of ink in the wicking sleeve 28. The operation of this inking roll is the same as those above described, and again this roll may be more desirable than the others, depending upon the viscosities of the various inks.

From the foregoing, it is apparent that I have provided a novel and highly efficient foot imprinting device embodying a molded one-piece structure including both an impression platform and a housing for the inking roll and imprinting curtain when not in use, and a structure highly adapted in moving the imprinting curtain from extended to retracted position and vice versa, and a structure in which the right amount of ink evenly distributed for an impression occurs at each operation.

It will be understood that modifications and variations may be effected without departing from the scope of the novel concepts of the present invention.
I claim as my invention:

1. In a foot imprinting device, an impression platform, a housing adjacent one side of said platform, a spring urged inking roll in said housing, an imprinting curtain on said roll, and a U-shaped rod having its legs hinged to the ends of said platform and the height connected to said curtain.

2. In a foot imprinting device, an impression platform, a housing adjacent one side of said platform, a spring urged inking roll in said housing, an imprinting curtain on said roll, a U-shaped rod having its legs hinged to the ends of said platform and the height connected to said curtain, and a guide roll over which said curtain moves, and said height being over center with respect to a plane through the axes of the leg hinges and said guide roll when said curtain is extended over said platform.

3. In a foot imprinting device, an impression platform, a housing along one side of said platform, a hollow inking roll in said housing, said roll holding a supply of ink therein with outlet apertures in the top region only thereof, an imprinting curtain around said roll and extendable over said platform, and said roll being sized to turn one full revolution while said curtain is being extended whereby said outlet apertures are at the top of the roll except when said curtain is being extended or retracted.

4. In a foot imprinting device, an impression platform, a housing along one side of said platform, a hollow inking roll in said housing, said roll holding a supply of ink therein with outlet apertures in the top region only thereof, an imprinting curtain around said roll and extendable over said platform, said roll being sized to turn one full revolution while said curtain is being extended whereby said outlet apertures are at the top of the roll except when said curtain is being extended or retracted, said inking roll having a filling opening therein opposite said apertures, and a removable plug for said opening.

5. In a foot imprinting device, an impression platform, a housing along one side of said platform, a hollow inking roll in said housing, said roll holding a supply of ink therein with outlet apertures in the top region only thereof, an imprinting curtain around said roll and extendable over said platform, said roll and curtain being relatively sized so that said apertures are at the top of the roll when said curtain is both retracted and extended.

6. In a foot imprinting device, an impression platform, a housing along one side of said platform, a hollow inking roll in said housing, said roll comprising an ink containing core having outlet apertures spaced therealong, spaced bands of wicking material around said core between said apertures, a sleeve of wicking material over said bands, and an imprinting curtain wound on said roll.

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