AUTOMATIC NAIL FILE

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References Cited
UNITED STATES PATENTS
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1,588,160 6/1926 Booty 132/76.5

ABSTRACT
An automatic manicuring device is disclosed which includes a housing, with said housing having at least one fingernail receiving slot therethrough; flexible nail filing means mounted within said housing for movement in a plane located beneath said fingernail receiving slot; and means for moving said filing means in said plane.

9 Claims, 5 Drawing Figures
AUTOMATIC NAIL FILE

FIELD OF THE INVENTION

This invention relates to automatic manicuring devices, for example, for manicuring fingernails and toenails, and more particularly to such a device which includes flexible nail filing means, such as a textured moving belt, as the means for filing the nails.

BACKGROUND OF THE INVENTION

In U.S. Pat. No. 1,915,305 issued June 27, 1933 to M. H. Gallagher, there is disclosed an automatic manicuring device, in which a solid grinding disc is positioned beneath fingernail receiving slots provided in a protective enclosure. It might be noted that although the principles of the Gallagher patent are functionally sound, there are a number of disadvantages associated therewith.

Specifically, and as noted above, the grinding disc of the Gallagher patent is a solid member, unyielding to the insertion of the fingernail. Accordingly, there would be a tendency of a manicuring device, constructed in accordance with the Gallagher patent, to cause a blunting of the manicured fingernails, rather than producing a smooth arcuate manicured nail, as is preferably desired. Additionally, the provision of a single, grinding disc in the Gallagher device is, in of itself, a disadvantage, since all users of the device have no choice but to employ the single degree of coarseness which has been preestablished for the single grinding disc thereof.

SUMMARY OF THE INVENTION

In contradistinction to the prior art, as exemplified by the aforementioned Gallagher patent, the automatic manicuring device of the instant invention includes flexible nail filing means which naturally yield to the arcuate shape of the nail impressed thereon during the manicuring sequence. Additionally, and as a further primary feature of the instant invention, the manicuring device hereof includes a plurality of distinct flexible nail filing surfaces, which are provided with differing degrees of coarseness with respect to one another.

Thus, the automatic manicuring device of the instant invention broadly comprises a housing, having at least one fingernail receiving slot therethrough; flexible nail filing means mounted within said housing for movement in a plane located beneath said fingernail receiving slot; and means for moving said nail filing means in said plane. Preferably, the flexible nail filing means comprises at least one textured moving belt, supported within the aforementioned housing by first and second rollers, such that a portion of the textured belt is positioned in the plane immediately beneath the fingernail receiving slot. Thus, when the fingernail is inserted in the slot, the flexible textured filing belt can conform to the arcuate shape of the nail during the filing process.

In accordance with the aforementioned second, primary aspect of the instant invention, the housing of the device includes a second fingernail receiving slot there-through, and the nail filing means includes a second flexible textured belt supported within the housing by the aforementioned first and second rollers in such a manner that a portion of the second belt is always positioned beneath the second slot in the housing. In this manner, two nails can be manicured simultaneously (be they of the same person or a different person), or, and in accordance with this aspect of the invention, the two belts may be provided with differing textures to provide the user of the device with a choice of surfaces.

In accordance with further features of the instant invention, the device hereof is a portable, battery operated, self-contained unit not dependent upon the use of an available outlet and cord, necessarily associated therewith. Furthermore, on-off switching means is provided to selectively energize the motor hereof and, in one particularly advantageous arrangement of the invention, such a switch is provided beneath and in association with the aforementioned flexible nail filing means, such that the motor of the device will be automatically energized when the fingernail is inserted through the aforementioned slot into engagement with the flexible nail filing means. Additionally, the housing hereof, includes a removable cover section which carries the aforementioned fingernail receiving slots, whereby interchangeable covers with different slot configurations may be employed.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

FIG. 1 is a perspective view of an automatic manicuring device constructed in accordance with the teachings of the instant invention.

FIG. 2 is a sectional view of the device shown in FIG. 1 taken along the lines 2—2 thereof.

FIG. 3 is a top view of the device of FIG. 1, with the cover thereof removed and certain other parts removed for the sake of drawing clarity.

FIG. 4 is a top view of an alternative embodiment of the automatic manicuring device of the instant invention.

FIG. 5 is a side view of an alternative embodiment of a device constructed in accordance with the instant invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Turning to the figures, there is illustrated an automatic manicuring device 10 constructed in accordance with the instant invention. Broadly speaking, the device 10 includes a housing 12 having one or more fingernail receiving slots 13 there through; flexible nail filing means broadly designated 14, mounted within the housing 12 for movement in a plane located beneath the fingernail receiving slots 13; and means 16 for moving the nail filing means 14.

In the illustrated embodiment, the flexible nail filing means 14, comprises at least one textured belt 18 supported about first and second rollers 20 and 22, such that a portion 24 of the belt 18 is positioned in the plane immediately beneath the fingernail receiving slots 13. It will be appreciated that since the belt 18 comprises what is known as a "endless" belt, that a portion thereof will always lie in the plane beneath the fingernail receiving slots 13, as the belt is driven by the moving means 16 to be further described. The belt 18 may consist of any suitable flexible material, such as paper, rubber, etc., provided with a desired textured abrasive surface. For example, a strip of sandpaper, with pre-selected coarseness maybe connected end to end to form the belt 18.

In the illustrated embodiment, the moving means 16 comprises a motor 26, the output shaft 28 of which is linked to the roller 22 by means of a pulley 30; and a
battery 32, which may be of the rechargeable type, if desired, for selectively energizing the motor 26. In the embodiment of FIG. 2, a thumb switch 34 is provided for selectively establishing an electrical connection between the battery 32 and the motor 26. In the alternative embodiment of FIG. 5, the operating switch takes the form of a normally open switch 36 positioned beneath the upper portion 24 of the belt 18. In operation, the switch 36 is urged to its closed position to establish the electrical path between the battery 32 and the motor 26 in response to the insertion of a fingernail through the slots 13, and into engagement with the upper portion 24 of the belt. Thus, it may be said that the embodiment of FIG. 5, the manicuring device 10, is automatically self-starting.

In a particularly advantageous embodiment of the instant invention, the housing 12 includes more than one nail receiving slot 13, in this embodiment two such slots 13', and 13''. Similarly, as best seen in FIG. 3, the flexible nail filing means 14 comprises a second textured belt 36, supported by the aforementioned rollers 20 and 22, such that a portion 38 thereof is positioned immediately beneath the aforementioned second fingernail receiving slot. It will be appreciated, therefore, that in this embodiment, two nails can be simultaneously manicured. Moreover, and as a particularly advantageous feature of the instant invention, the two belts 18 and 36 are provided with differing textures (i.e. one coarse and one fine), whereby a choice of manicuring surfaces is available to the user.

With reference to FIG. 2, it will be seen that the housing 12 comprises a base portion 40, and a cover portion 42, removably secured thereto by threaded members 44. The base portion 40 carries the motor 26, the battery 32, the switch 34, and the support struts 46, which rotatably support the aforementioned rollers 20 and 22. In accordance with a further feature of the instant invention, an interchangeable cover member, such as illustrated at 42' in FIG. 4, with slots 13''' of different configuration then the slots 13 of FIG. 1 may be substituted for the cover 42 of FIG. 2. For example, if the device 10 will be used for small children or infants, it may be desirable to use the smaller dimensioned slots 13''' provided in the interchangeable cover 42'.

In operation the nail to be manicured is inserted through the slots 13 of FIG. 1 (or different configured slots provided in an interchangeable cover member such as 42'), and engaged with the moving, abrasive belt (or belts) positioned therebeneath. As noted, the manual switch 34 may be depressed or the self-starting switch 36 of FIG. 5 may be employed for energization of the motor and consequent movement of the belt. It is important to appreciate, and it is to be considered a primary aspect of the instant invention, that because the nail filing means are flexible, they will conform to the arcuate shape of the nails to be manicured, such that blunting of the nail will be prevented.

While this invention has been described with respect to a particular embodiment thereof numerous others will become obvious to those of ordinary skill in the art in light thereof, and it is preferred, therefore that the scope of the invention be limited, not by the specific disclosure herein, only by the appended claims.

1. An automatic manicuring device comprising: a housing, said housing having at least one fingernail receiving slot therethrough; flexible nail filing means mounted within said housing for movement in a plane located beneath said fingernail receiving slot; and means for moving said nail filing means in said plane.

2. The automatic manicuring device of claim 1 wherein said flexible nail filing means comprises at least one textured belt supported within said housing by first and second rollers, such that a portion of said belt is positioned in said plane.

3. The automatic manicuring device of claim 2 wherein said housing includes a second fingernail receiving slot therethrough; and said nail filing means includes a second textured belt supported within said housing by said first and second rollers such that a portion of said second belt is positioned in said plane.

4. The automatic manicuring device of claim 3 wherein said first and second belts have different textures with respect to one another.

5. The automatic manicuring device of claim 2 wherein said one textured belt is unsupported by anything other than said first and second rollers.

6. The automatic manufacturing device of claim 3 wherein said first and second belts are unsupported by anything other than said first and second rollers.

7. The automatic manicuring device of claim 2 wherein said means for moving said nail filing means includes:
a motor located within said housing;
connecting means linking the output shaft of said motor with one of said first and second rollers;
battery means located within said housing for energizing said motor, and switch means for selectively establishing an electrical connection between said battery means and said motor.

8. The automatic manicuring device of claim 7 wherein said switch means includes a normally open switch positioned beneath said portion of said belt which is positioned in said plane; said switch being urged to its closed condition to establish said electrical connection between said battery means and said motor in response to the insertion of a fingernail through said slot and into engagement with said portion of said belt.

9. The automatic manicuring device of claim 3 wherein said housing includes:
a bottom plate on which said first and second rollers and said means for moving said nail filing means are supported; and a removable cover member in which includes said first and second slots; whereby interchangeable covers including different sized slots may be employed.
UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 3,754,556
DATED : Aug. 28, 1973
INVENTOR(S) : Jasper J. Watkins

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

On the title page, Item 167 Inventor should read:
-- Jasper P. Watkins --.

Signed and Sealed this

Second Day of November 1982

[SEAL]

Attest:

GERALD J. MOSSINGHOFF
Attesting Officer
Commissioner of Patents and Trademarks