July 2, 1929. G. LIDSEEN 1,719,064

MECHANICAL MANICURING MACHINE

Filed Aug. 27, 1928 2 Sheets-Sheet 1

Fig. 1

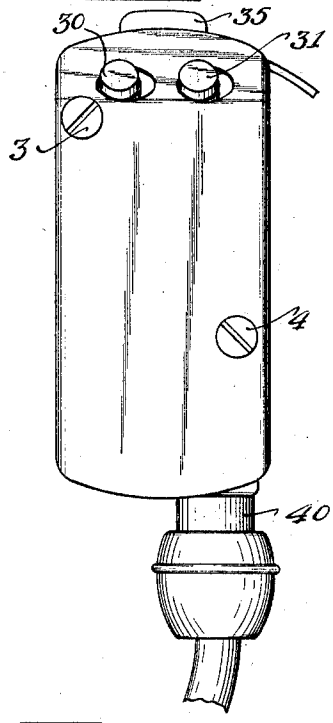


Fig. 2

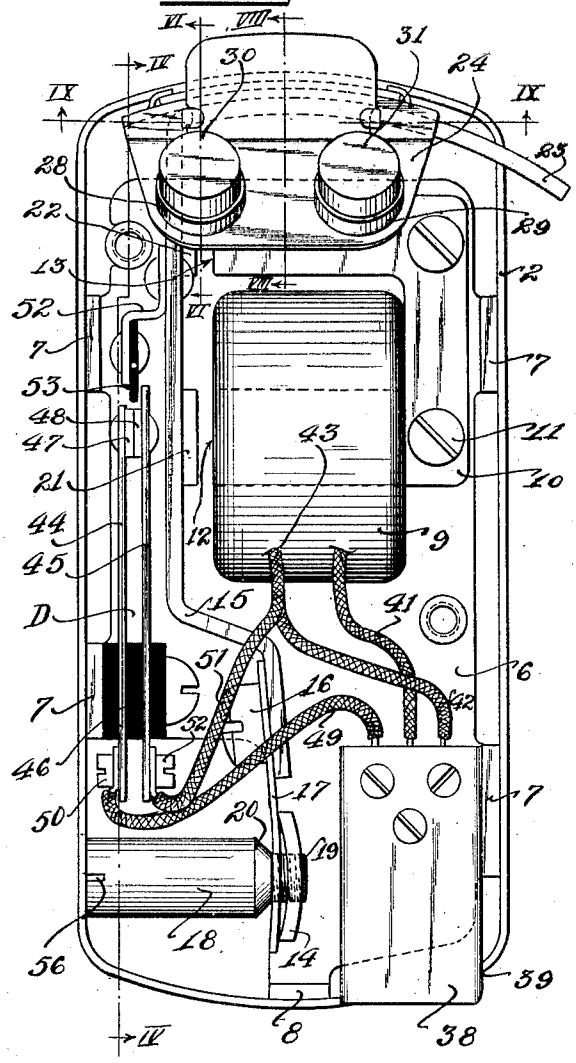
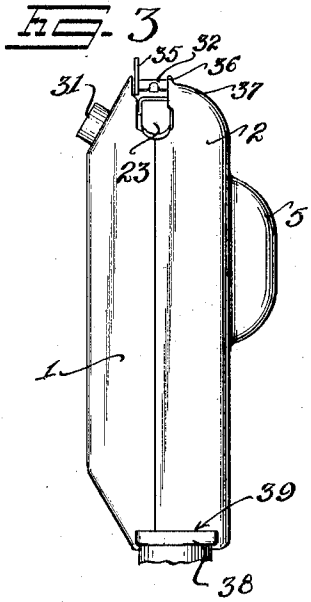


Fig. 3



Inventor

Gustave Lidseen

By Charles T. Kills Attys

July 2, 1929. G. LIDSEEN 1,719,064

MECHANICAL MANICURING MACHINE

Filed Aug. 27, 1928 2 Sheets-Sheet 2

Fig. 4

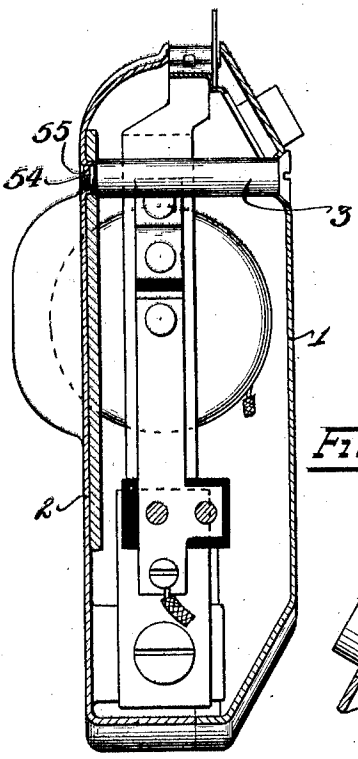


Fig. 5

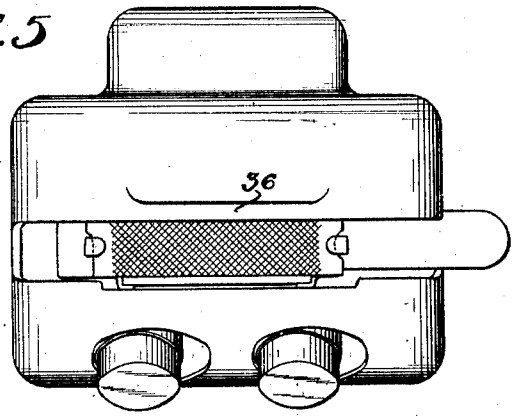


Fig. 7

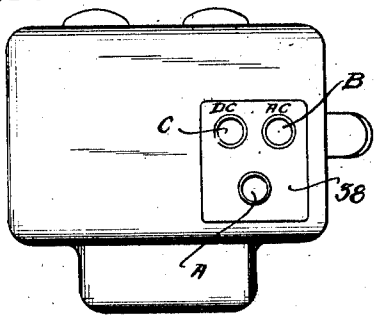


Fig. 6

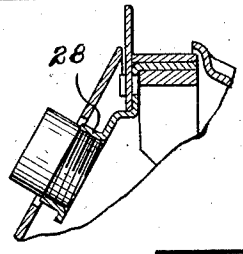


Fig. 9

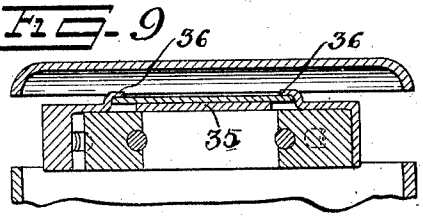


Fig. 8

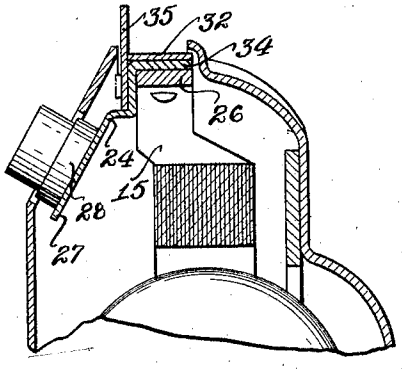
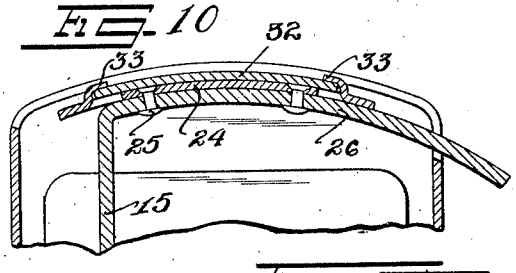


Fig. 10



Inventor

Gustave Lidseen

by Charles O. Wills Attys

Patented July 2, 1929. 1,719,064

UNITED STATES PATENT OFFICE.

GUSTAVE LIDSEEN, OF CHICAGO, ILLINOIS.

MECHANICAL MANICURING MACHINE.

Application filed August 27, 1928. Serial No. 302,211.

This invention relates to a mechanical manicuring machine or device.

The invention contemplates a compact casing containing an arm carrying sundry instrumentalities for performing various operations practiced in manicuring, together with means for reciprocating the arm.

The machine includes a casing containing an arm or vibrator, which arm carries a buffer, a polisher, a cuticle set or pusher, together with several files or a file and a sand board. A coil is provided for vibrating the arm, which coil is arranged to be energized by either alternating or direct current, without any change in the construction of the machine.

An object of the invention is to provide an electrically operated manicuring machine operable by either alternating or direct current.

Another object of the invention is to provide a machine for mechanically performing various operations incidental to manicuring.

Another object is to provide a manicuring machine in which a vibrating arm carries a plurality of tools useful in manicuring.

A further object of the invention is to provide an electrically operated manicuring machine which is compact, easy to use, which is operable by either direct or alternating current, which is efficient in use and economical to manufacture.

The above, other and further objects of the invention will be apparent from the following description, accompanying drawings and appended claims.

One form of the invention is shown in the accompanying drawings and the views thereof are as follows:

Figure 1 is a top plan view of a manicuring machine embodying my invention.

Figure 2 is an enlarged top plan view of the lower part of the casing, showing the various elements in operative relation.

Figure 3 is a side elevational view of the machine.

Figure 4 is a section taken on line IV—IV of the Figure 2.

Figure 5 is an enlarged end view looking at the upper end of Figure 1.

Figure 6 is a section on line VI—VI of Figure 2.

Figure 7 is an end elevation looking at the lower end of the machine of Figure 1.

Figure 8 is a section on line VIII—VIII of Figure 2.

Figure 9 is a section on line IX—IX of Figure 2.

Figure 10 is a fragmental sectional view showing certain details of construction.

The embodiment shown in the drawings comprises a casing formed of a top portion 1 and a bottom portion 2 which are held together in operative relation by bolts 3 and 4.

The lower part of casing 2 is formed with a depression 5 for reception of the energizing coil.

A plate or frame 6 as best shown in Figure 2, is inserted in one of the casing portions shown in the drawings as portion 2 and which plate rests on the bottom of said portion. Lateral projections 7 are provided for positioning the plate within the casing, while an end projection 8 positions the plate lengthwise in the casing 2.

An energizing coil 9 is secured to the plate 6 by means of its core 10 which is bolted at 11 to the plate. The core is a bipolar core having one pole 12 in the axis of the coil and the pole 13 disposed laterally of the coil and spaced a slight distance from the same.

The plate 6 has an upturned lug 14 which is curved in top plan view.

The armature 15 is attached by means of a bolt 16 to a spring 17 which is retained against the concave surface of the lug 14 by an adjusting screw 18, which screw has a reduced portion 19 threaded into the lug 14 and a shoulder 20 bearing against the opposite side of the spring 17 whereby the tension of the spring 17 may be varied with respect to the lug 14 for adjusting the vibration of the armature 15.

A pole piece 21 is attached to the armature 15 in position to be influenced by the core 12 of the coil, while another pole piece 22 is attached to the armature in position to be influenced by the second pole 13. The second pole is provided for imparting greater pulling effect to the armature, thereby rendering the machine more efficient in use.

The armature 15 has its free end bent at an angle, with an end 23 projecting beyond the side of the casing 2. This end 23 serves as a cuticle set or pusher.

Figure 3 shows the ends of the portions 1 and 2 of the casing as being apertured or slotted, through which slot the cuticle pusher extends.

A plate 24 of non-magnetic metal is riveted at 25 to the bent portion 26 of the armature 15. Said plate is shaped as shown in Fig-

ures 6 and 8. The upper portion of the plate 27 is inclined and is provided with two circular collars 28 and 29 which are threaded on the interior.

A buffer 30 is threaded into the collar 28 and a polisher 31 is threaded into collar 29 so as to be reciprocated or vibrated whenever the armature is vibrated by the coil.

An abrasive element such as a file or sand board 32 is secured by means of projections 33 flatwise against the curved downwardly extending portion 34 of the plate 24, which file vibrates in the opening formed by the casing portions 1 and 2. A second file or sand board 35 is fastened by means of clips 36 against the plate 24 at right angles to the file 32, which file 35 projects outwardly beyond the file 32.

The casing portion 2 is provided with a ridge 36 defining the lower margin of the aperture, which ridge serves as a finger nail guide, while the end of the casing 37 immediately underneath the guide 36 serves as a finger rest so that the finger may be turned about the rest 37 or the machine may be turned as a whole about the finger when the same is against the rest 37 for governing the depth of cut by the file 32 and also governing the fineness of the cut.

A socket 38 is attached to the end of the plate 6 and projects through an opening 39 in the casing at the opposite end thereto from the operating tools. This socket is arranged to receive a two prong electrical plug 40 for supplying an electrical current to the coil 9.

The socket 38 is provided with three contact conductor receptacles A, B and C. A conductor 41 is connected to the contactor A and to one end of the coil winding. The conductor 42 is connected with a contactor B and to the other end of the coil winding at 43.

The two prong plug 40 being inserted in the socket 38 with the prongs in the contactors A and B and connected to a source of alternating current, will energize the coil 9 for vibrating the arm 15, vibration being accomplished by reason of the use of alternating current.

A make and break device D comprising an arm 44 and another arm 45 is secured to the plate 6 by insulating blocks 46 suitably fastened to the plate. The arm 44 carries a contact point 47 while the arm 45 carries a similar contact 48. Normally, these contacts are in engagement.

A conductor 49 is connected to the contactor C of the socket 38 and a binding post 50 on the arm 44 of the make and break device. A conductor 51 is connected at one end to binding post 52 on the other arm 45 of the make and break device and at the other end is connected to the terminal 43 of the coil winding.

The armature 15 is provided with a projection 52 which is substantially Z-shaped and which carries an insulating projection 53 positioned over the projecting end of the arm 45 of the make and break device D to open the contacts 47 and 48 when the armature 15 is attracted towards the coil 9.

When direct current is available for operation of the machine, the two prong plug 40 will be inserted in the socket 38, with one prong in the contactor A and the other prong in the contactor C so that the flow of current will then be through the make and break device D and the coil 9 which is energizing the coil to attract the armature 15. When the armature 15 has been attracted a certain distance, the insulated projection 53 will open the circuit through the contacts 47 and 48 on the two arms of the make and break device, thus interrupting the flow of direct current to the coil 9 whereupon the flow of current ceases and the arm 45 springs back into position shown in Figure 2 whereupon the circuit through the contacts 47 and 48 is closed, again energizing the coil 9. This operation continues as long as the direct current is supplied to the machine, thus vibrating the armature 15 and its attached tools or manicuring devices.

The operation of the machine is as follows:

When alternating current is used, the two prong plug 40 is inserted in the contactors A and B of the socket 38 whereupon the coil 9 is energized to vibrate the armature 15. Such vibration reciprocates the buffer 30, polisher 31, cuticle set 23 and the files 32 and 35. The cuticle pusher 23 serves its purpose whereupon the nail is filed by bringing the machine against the end of the finger, with the finger against the finger rest 37 and the nail extending over the guide 36 for filing by the file 32 or 35.

Operation of the machine by direct current is the same except that the two prong plug 40 would be inserted in the contactors A and C of the socket 38.

The plate 6 carries all of the instrumentalities above described and is secured in position within the casing portion 2 by means of the bolts 3 and 4 when the part 1 is applied over the part 2 and the bolts inserted in place. Figure 4 shows a lower end of bolt 3 threaded at 54 for threaded engagement at 55 with the casing 2. The aperture in the casing 2 for the bolt 3 is formed by turning inwardly the metal of the casing at the aperture for providing sufficient surface to receive the threads for the bolt.

The adjusting screw 18 may be turned in either direction to vary the vibratory movement of the armature 15 by inserting a screw driver in the slot 56 of said screw.

The device is very compact, a full sized device being no larger than the machine shown in Figure 1 and as a matter of fact as made it is smaller.

While I have described more or less pre-

cisely the details of construction of my invention, yet I do not wish to be understood as limiting myself thereto as I am aware that changes may be made in the arrangement and proportion of parts and that equivalents may be substituted, all without departing from the spirit and scope of my invention.

I claim as my invention:

1. An electrically operated manicuring machine comprising a casing, a coil in said casing, an armature, a plurality of manicuring tools supported by said armature projecting through said casing, and means carried by said casing and electrically connected to said coil whereby the same may be selectively energized by direct current as well as by alternating current.

2. An electrically operated manicuring machine comprising a casing having apertures therein, a coil in said casing, an armature, a plurality of manicuring tools supported by said armature projecting through the apertures in said casing, and means carried by said casing and electrically connected to said coil whereby the same may be energized by direct current as well as by alternating current.

3. An electrically operated manicuring machine comprising a casing having apertures therein, a coil in said casing, an armature, a plurality of manicuring tools supported by said armature and operatively effective through said apertures, and means carried by said casing and electrically connected to said coil for energizing said coil by direct current as well as by alternating current.

4. An electrically operated manicuring machine comprising a casing having apertures therein, a coil in said casing, an armature, a plurality of manicuring tools supported by said armature and operatively effective through said apertures, a circuit breaker within said casing, a three-way socket in said casing, two ways of said socket being in circuit with the terminals of the coil windings, the third way being in circuit with said circuit breaker, a connection between said circuit breaker and one of the terminals of the coil winding, said two ways in circuit with the coil windings arranged for connection with alternating current and said third way and the way connected to the coil terminal in connection with said circuit breaker arranged for connection with direct current.

5. An electrically operated manicuring machine comprising a casing, a coil in said casing, an armature, a plurality of manicuring tools supported by said armature projecting through said casing, and means carried by said casing and electrically connected to said coil whereby the same may be selectively energized by direct current as well as by alternating current, said means including an electrical socket in said casing having a plurality of contacts in circuit with said coil, certain of said contacts arranged for alternating current and other of said contacts arranged for direct current.

6. An electrically operated manicuring machine comprising a casing, a coil in said casing, an armature, a plurality of manicuring tools supported by said armature projecting through said casing, means carried by said casing and electrically connected to said coil whereby the same may be selectively energized by direct current as well as by alternating current, said means including an electrical socket in said casing having a plurality of contacts in circuit with said coil, certain of said contacts arranged for alternating current and other of said contacts arranged for direct current, and a circuit breaker in circuit with the direct current connections.

7. An electrically operated manicuring machine comprising a casing, a coil in said casing, an armature, a plurality of manicuring tools supported by said armature projecting through said casing, means carried by said casing and electrically connected to said coil whereby the same may be selectively energized by direct current as well as by alternating current, said means including an electrical socket in said casing having a plurality of contacts in circuit with said coil, certain of said contacts arranged for alternating current and other of said contacts arranged for direct current, a circuit breaker in circuit with the direct current connections, and means carried by said armature for opening said breaker after said armature has been moved a certain distance under influence of said coil.

8. An electrically operated manicuring machine comprising a casing, a coil in said casing, an armature, a plurality of manicuring tools supported by said armature projecting through said casing, means carried by said casing and electrically connected to said coil whereby the same may be selectively energized by direct current as well as by alternating current, said means including an electrical socket in said casing having a plurality of contacts in circuit with said coil, certain of said contacts arranged for alternating current and other of said contacts arranged for direct current, a circuit breaker in circuit with the direct current connections, means carried by said armature for opening said breaker after said armature has been moved a certain distance under influence of said coil, and means for adjusting the stroke of said armature.

9. A power actuated manicuring machine comprising a two part casing, a plate in one of said parts, said plate supporting a coil, an armature, and a socket, said armature supporting a plurality of manicuring tools, said other casing part being apertured whereby said tools may be effective outwardly of said

casing for manicuring purposes, and means for fastening said two parts together.

10. A manicuring machine comprising a two part casing, a plate removably associated with one of said parts, said plate supporting a coil, an armature for the coil, and an electric socket, all of said elements being removable as a unit with said plate.

11. An electrically operated manicuring machine comprising a casing, a coil in said casing, an armature, a plurality of manicuring tools supported by said armature projecting through said casing, means carried by said casing and electrically connected to said coil whereby the same may be selectively energized by direct current as well as by alternating current, and a plate for supporting all of said foregoing elements within said casing.

12. An electrically operated manicuring machine comprising a casing, a coil in said casing, an armature, a plurality of manicuring tools supported by said armature projecting through said casing, means carried by said casing and electrically connected to said coil whereby the same may be selectively energized by direct current as well as by alternating current, said means including an electrical socket in said casing having a plurality of contacts in circuit with said coil, certain of said contacts arranged for alternating current and other of said contacts arranged for direct current, a circuit breaker in circuit with the direct current connections, means carried by said armature for opening said breaker after said armature has been moved a certain distance under influence of said coil, and a plate supporting all of said foregoing elements in said casing.

13. A power actuated manicuring machine comprising a separable casing, a plate within one part of said casing supporting a coil, said plate supporting also an armature for the coil, a make and break device and an electric socket, said armature carrying a plurality of manicuring tools, another part of said casing being provided with apertures whereby said tools may be operably effective externally of said casing, and means for fastening said several casing parts together, said fastening means securing said plate to its casing part.

14. A power actuated manicuring machine comprising a separable casing, a plate within one part of said casing supporting a coil, said plate supporting also an armature for the coil, a make and break device and an electric socket, said armature carrying a plurality of manicuring tools, another part of said casing being provided with apertures whereby said tools may be operably effective externally of said casing, means for fastening said several casing parts together, said fastening means securing said plate to its casing part, and means cooperating with the armature support for varying the movement of said armature.

15. A manicuring machine comprising a casing, a coil within said casing, an armature supported at one end subject to influence by said coil, a plate attached to said armature near its opposite end and removably carrying a plurality of manicuring tools, said casing being provided with openings through which said tools are operably effective, a make and break device within said casing, a socket having a plurality of contacts, conductors between two of said contacts and said coil, a conductor between another contact and said make and break device, a conductor between said make and break device and one end of said coil, the circuits formed by said conductors permitting energization of said coil by alternating current as well as by direct current.

16. A manicuring machine comprising a casing, a coil within said casing, an armature supported at one end subject to influence by said coil, a plate attached to said armature near its opposite end and removably carrying a plurality of manicuring tools, said casing being provided with openings through which said tools are operably effective, a make and break device within said casing, a socket within said casing having three contactors, two of said contactors being connected to the ends of said coil, a third contactor connected to one side of said make and break device, a conductor between the other side of said make and break device and one end of said coil, and a two prong plug insertable in said socket for supplying current directly to said coil in one position of said plug and for supplying current to said coil through said make and break device in another position of said plug.

In testimony whereof I have hereunto subscribed my name at Chicago, Cook County, Illinois.

GUSTAVE LIDSEEN.