

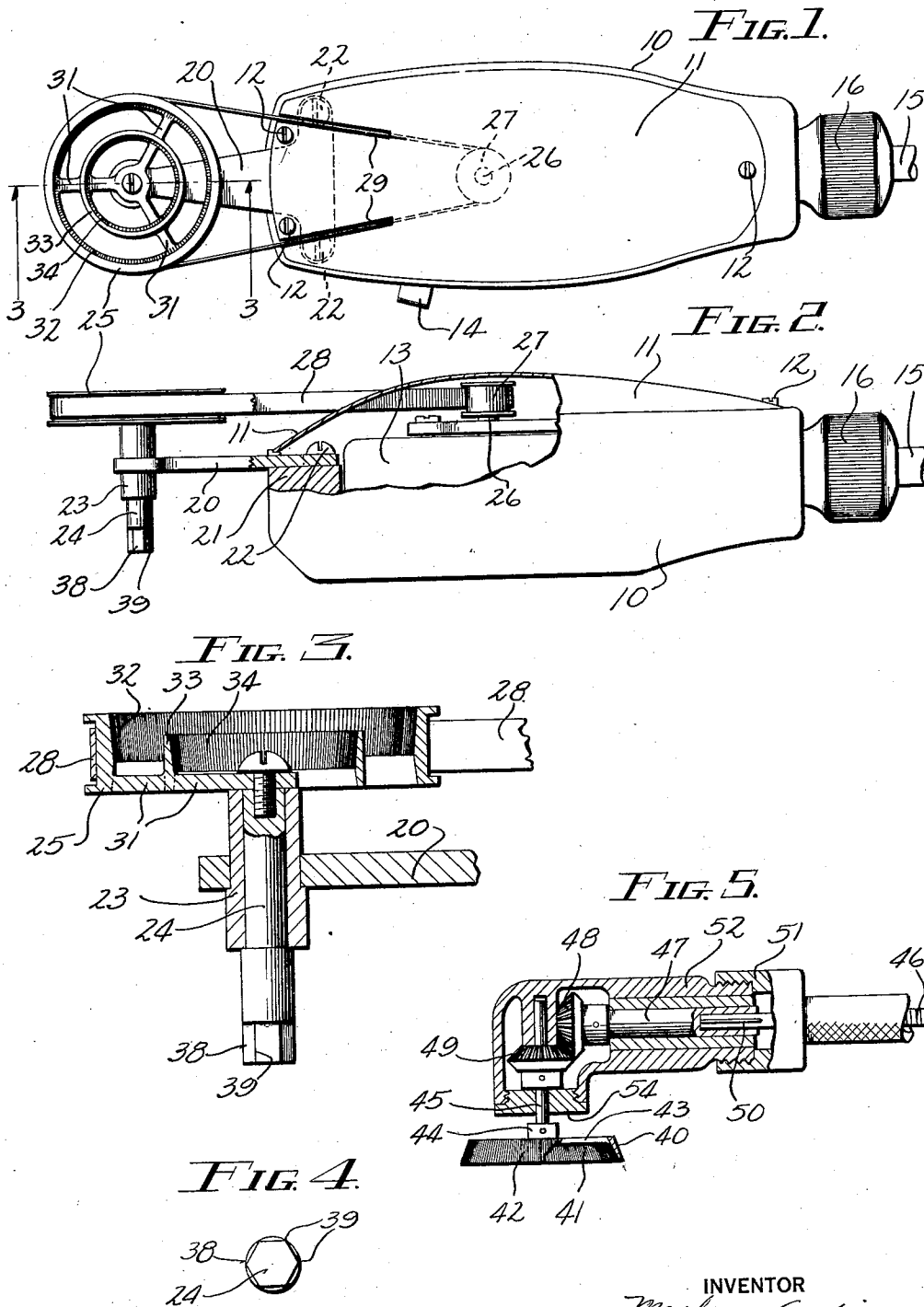
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MANICURING MECHANISM

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MANICURING MECHANISM

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My invention relates to improvements in manicuring mechanism.

My primary object is to provide a motor driven manicuring mechanism which can be manipulated and operated without danger of personal injury.

Further objects are to provide manicuring mechanism which can conveniently be manipulated by the person who is being manicured; to provide a manicuring tool which includes a driving pulley having one or more annular abrading surfaces which are guarded in such a manner as to prevent accidental contacts between such surfaces and the skin of the operator or of the person who is being manicured; to provide a manicuring tool which includes a driving pulley having a plurality of abrading rims to which the abrading material is applied to an inner conically tapered surface of the rim guarded by a smooth exterior portion; to provide a motor driven manicuring mechanism having a shaft equipped with manicuring devices of different characteristics at its respective ends; to provide a manicuring tool having one or more abrading rims and a buffing impactor in compact assembly adapted for convenient and safe alternative use; and to provide means whereby a manicuring tool may be operated from a motor by frictional driving connections whereby the tool may be operated under light power and with slight momentum and its motion instantly checked without stopping or overloading the motor.

In the drawings:

Figure 1 is a plan view of my improved manicuring mechanism.

Figure 2 is a side elevation of the same with a portion of the casing broken away to clearly illustrate the driving connections.

Figure 3 is a sectional view drawn to line 3—3 of Figure 1.

Figure 4 is an end view of the manicuring shaft showing the impacting buffer.

Figure 5 is a detail partly in elevation and partly in section showing a modified form of construction in which the tool may be driven by a flexible shaft from a relatively stationary motor.

Like parts are identified by the same refer-

ence characters throughout the several views.

A hollow handle 10 is provided with a cap 11 on what will ordinarily be regarded as the top side. This cap will normally be secured in place upon the body portion of the handle by the screws 12. Within the handle an electric motor 13 is mounted, the operation of this motor being preferably controlled by a switch lever 14 which projects to the exterior through an opening in the side of the handle casing. Electric current is supplied to the motor through the flexible cord 15 and a plug 16 socketed in the rear end of the handle.

The front of the handle is provided with a forwardly projecting arm 20 which is secured to the motor supporting block 21 by a screw 22. The arm extends through an aperture in the front wall of the handle casing and supports a perpendicularly disposed bearing sleeve 23 in which a shaft 24 is mounted.

The upper end of the shaft 24 is provided with a wheel having a ring or pulley-like rim 25 whereby the shaft 24 may be driven from the motor shaft 26 and the motor shaft pulley 27 by a belt 28 which extends through slots 29 in the cap 11. These slots extend to the forward margin of the cap 11 and serve as guides for the belt, the latter being released when the cap 11 is removed. The front end of the cap 11 curves downwardly, and a belt passing through the slots may therefore extend directly over an internal pulley 27 and an external pulley supported from the arm 20. This arrangement allows the motor pulley 27 to be normally concealed within the handle.

The portion of the rim 25 between its upper margin and the spokes 31 is conically tapered and provided with an abrasive surface 32. Within this portion of the rim and attached to the spokes 31 I preferably provide a ring 33 which also has a conically tapered abrasive surface 34 on its inner face. The two annular abrasive surfaces 34 and 32 are concentric and are normally guarded by their respective rims from coming into contact with the skin or with any surface upon which the tool may be placed. However the finger nails or toe nails of the person being mani-

cured can be so placed as to bring them in contact with either of these abrading surfaces without danger of material injury to the person since contact with any such surface will cease the moment that effort to maintain such contact ceases.

In addition to the protection afforded by the rim guarding the abrading surfaces 32 and 34 it will be found that the internal or concave curve of the arc within which the finger nail is placed will conform quite closely to the curvature of the finger nail whether applied to the end thereof or to that portion of the outer surface of the finger nail which can be brought into contact with the abrasive. Therefore a smooth continuously curving surface or edge without hollows or ridges may be more easily obtained than would be possible to obtain by means of a convex abrading surface such as is provided where the abrasive is applied to the outer surface of a wheel rim.

At the opposite end of the shaft 24 from that to which the abrading wheel is applied the shaft is provided with a polygonal end portion 38. This portion of the shaft is preferably hexagonal and when the end of the shaft is applied to a finger nail adjacent to its inner end or root the corners 39 will successively impact upon the skin margin to push the latter backwardly while the end of the shaft is buffing the nail. This impacting pressure is very effective to prevent the skin from encroaching upon the surface of the nail and to massage it into healthy condition, removing all dead cuticle.

I preferably employ a belt 28 composed of a flat rubber band which combines a high frictional characteristic with a high degree of elasticity. Such a belt will drive the pulley under exceedingly light tension because of its frictional engagement with the pulley surfaces. And yet its high degree of elasticity allows it to stretch and instantly release the pulley without overloading the motor or causing the pulley to injure the finger when the latter is carelessly inserted between the spokes or pressed with excessive force against the abrading surface.

In Fig. 5 I have illustrated a modification in which a conically tapered ring 40 is provided with internal and external abrading surfaces 41 and 42 respectively. This rim is supported by spokes 43 from a hub 44 attached to a supporting shaft 45. This shaft may be driven from any suitable source of power, but in the construction shown it is driven from a flexible shaft 46 through the pinion carrying shaft 47 and beveled pinions 48 and 49, the latter being secured to shaft 45. The flexible shaft has a splined end portion 50 telescoped in the associated end of shaft 47 and held in position by a cap 51 screwed to the end of the gear casing 52. The gear casing is elbowed and receives the gears in the elbowed portion, the shaft 45

passing through a detachable cap 54. In this Fig. 5 construction it is not material to the invention herein disclosed whether the outer surface of the rim 40 is provided with abrasive, and it will be obvious that if abrasive is used on the outer surface of this rim there will be greater danger of injury to the person or thing than will exist if the exterior abrasive is omitted.

I claim:

1. In a manicuring tool a driven pulley rim having power transmitting connections and provided with an internal abrasive surface adapted for operation upon the outer end portions of finger nails, said rim being supported from a central hub at points laterally offset from said abrasive surface.
2. A manicuring tool comprising the combination with a hollow handle, a motor therein, a driven wheel supported from the handle in an exposed position and operatively connected with the motor and said wheel having a rim provided with a smooth narrow side margin and an internal abrasive surface adapted for operation upon the outer end portion of finger nails, said surface being conically tapered from the outer margin of the rim toward a central plane.
3. In a manicuring mechanism a motor driven wheel having concentric rings each having an inner surface tapering in the direction of the central plane of the ring and each having an abrasive surface.
4. A manicuring mechanism comprising the combination with a tool handle provided with an internal motor and a cap wall downwardly curving toward the front end of the handle, and provided with slots through which a belt may pass, a shaft supported from the front end of the handle and provided with a pulley connected with the motor by a belt extending through said slots, said pulley having a rim provided with an abrasive inner surface adapted for manicuring operations.
5. A manicuring mechanism comprising the combination with a tool handle provided with an internal motor and a cap wall downwardly curving toward the front end of the handle, and provided with slots through which a belt may pass, a shaft supported from the front end of the handle and provided with a pulley connected with a motor by a belt extending through said slots, said pulley having a rim provided with an abrasive inner surface adapted for manicuring operations, and said pulley having an auxiliary rim also provided with an internal abrasive surface, the supporting shaft having a polygonal end adapted for buffing and impacting operations.
6. A manicuring mechanism comprising the combination with a hollow handle through an opening in which driving mechanism extends, a shaft supported from the

front end of the handle and provided with a wheel having an annular portion, the inner surface of which is abrasive and adapted for manicuring operations.

5 7. A manicuring mechanism comprising a handle from the interior of which driving mechanism extends along the longitudinal axis of the handle, a driven wheel supported from the handle and actuated by said driving mechanism, and a shaft upon which said
10 wheel is mounted, one end of said shaft being formed with flat sides and a smooth surfaced end adapted for buffing operations, and said wheel having annular rim-like portions
15 the inner surfaces of which are formed for abrading operations upon the ends of finger nails and for similar manicuring operations.

8. A power driven manicuring mechanism having a plurality of spaced annular rings of
20 different diameters, said rings being in guarding relation to each other and each ring being provided with an abrasive annular inner surface adapted for manicuring operations,
25 each of said rings having a smooth narrow side margin adapted to enter the space between the tip of a finger and the associated finger nail to allow the abrasive surface to fit concavely over the end of the nail during rotation of the ring.

30 9. A manicuring tool provided with a motor driven grinder having attached thereto a protecting guard ring adapted to serve as a pulley rim, and a resiliently yielding plate in driving relation to said rim.

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