June 23, 1942. J. CONTE 2,287,725

MOTOR DRIVEN ROTARY POLISHING DEVICE

Filed Jan. 15, 1941

Fig. 1.

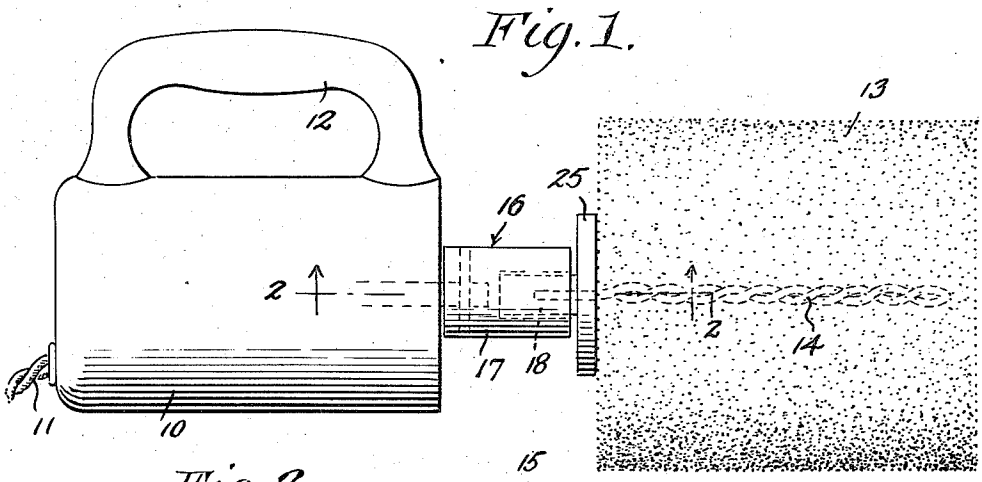



Fig. 2.

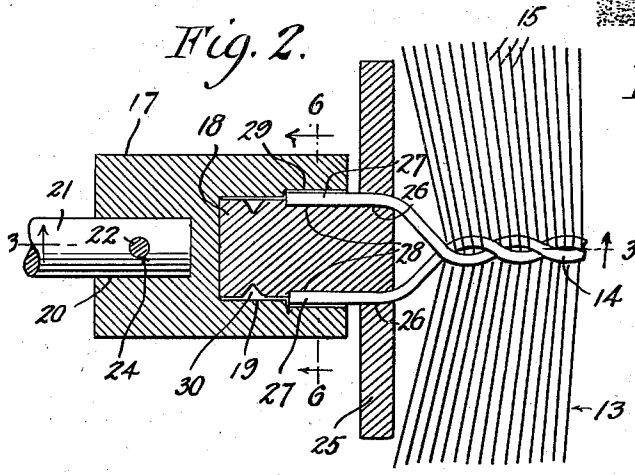



Fig. 4.

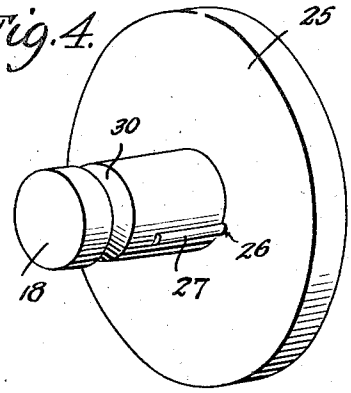



Fig. 5.

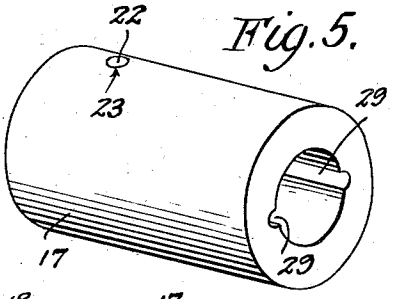



Fig. 3.

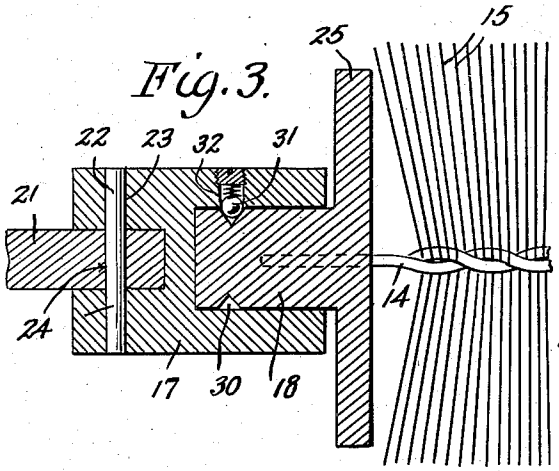
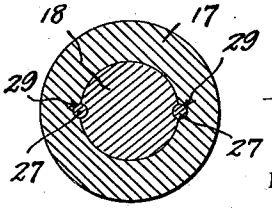



Fig. 6.




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## MOTOR DRIVEN ROTARY POLISHING DEVICE

John Conte, Jersey City, N. J.

Application January 15, 1941, Serial No. 374,444

1 Claim. (Cl. 15—23)

This invention relates to motor driven rotary polishing devices and has particular reference to an improved coupling for connecting the motor and polishing element which permits of the expeditious removal and replacement of the polishing element.

The invention comprehends a motor and polishing element provided respectively with interengageable plug and socket members for coupling the same together and which plug and socket members are provided with cooperating means for releasably retaining the motor and polishing element against axial separation and relative turning movement.

The invention further comprehends in a polishing device of the indicated character, a polishing element having a twisted wire core, the ends of which are anchored to the surface of the plug and provide longitudinally extending splines adapted to engage in recesses in the socket member for preventing relative turning movement of the motor and polishing element.

With the foregoing and other objects in view, reference is now made to the following specification and accompanying drawing in which there is illustrated a preferred form of the invention.

In the drawing:

Fig. 1 is a side view of a polishing device constructed in accordance with the invention and showing certain of the parts in dotted lines.

Fig. 2 is an enlarged fragmentary sectional view taken approximately on line 2—2 of Fig. 1.

Fig. 3 is a similar view taken approximately on line 3—3 of Fig. 2.

Fig. 4 is an enlarged perspective view of the plug member of the coupling for connecting the motor and polishing element.

Fig. 5 is a similar view of the socket member thereof.

Fig. 6 is a vertical sectional view through the coupling on line 6—6 of Fig. 2.

Referring to the drawing by characters of reference, the polishing device includes a portable electric motor 10 having conductor cords 11 for connection with a source of current supply and which motor is provided with a handle 12 for manual manipulation of the polishing device. The polishing device also includes a polishing element 13 which may be constructed of any desired material having a wire core 14 and as illustrated the same consists of a cylindrical brush, the bristles 15 of which are secured at their centers between the spirally twisted wires of the core 14 with the bristles protruding radially therefrom.

The polishing element 13 is releasably connected to the motor 10 by means of a coupling element 16 disposed therebetween and consisting of a socket member 17 and a cylindrical plug member 18. The socket member 17 is provided with an axial bore 19 extending inwardly from one end thereof in which bore the plug member 18 is axially slidable and with an axial bore 20 extending inwardly from the opposite end thereof for receiving the end of the armature shaft 21 of the motor for connecting the socket member thereto by a key pin 22 extending through aligned openings 23 and 24 in the socket member 17 and shaft 21 respectively.

The plug member 18 is provided with a flanged outer end 25 having aligned openings 26 through which extend the terminals 27 of the twisted wire core 14 and which are anchored in longitudinally extending grooves 28 in the periphery of the plug 18 by any desired means, such as brazing or welding to thereby secure the plug to the inner side face of the polishing element 13 in axial alignment with the core 14. The terminals 27 protrude above the periphery of the plug member 18 to form longitudinally extending splines which are engaged in mating longitudinally extending grooves 29 in the periphery of the bore 19 to thereby key the plug 18 to the socket 17 for rotation therewith.

In order to detachably retain the plug 18 in the bore 19 of the socket 17 against accidental or unintentional displacement, the plug is provided with a circumferential groove 30 in the periphery thereof between the innermost end and the ends of the terminals 27. The groove 30 is preferably of V-shaped formation in cross section and is adapted to be engaged by a spring pressed detent 31 which is preferably of spherical formation and is mounted in a radial opening 32 in the socket member 17. As illustrated, the opening 32 at its inner end adjacent the bore 19 is of reduced diameter to permit the ball 31 to be partially projected therefrom into engagement with the detent groove 30 of the plug.

There is thus provided a coupling which permits of the expeditious connection and disconnection of a polishing element with the motor for rotation of the polishing element thereby and which permits of the ready interchanging of the polishing elements of varying types, such as brushes, buffers and the like.

What is claimed is:

In a motor driven rotary polishing device, a motor including a driven shaft, a polishing element including a spirally twisted wire core hav-

ing rearwardly directed spaced terminals, a plug member having a flanged outer end through which flange the terminals of the core extend and are anchored in longitudinally extending grooves in the periphery of the plug member and protrude above the periphery thereof to provide longitudinally extending splines, a socket member secured to the driven shaft of the motor and having an axial bore and longitudinally extending peripheral grooves in the periphery of the bore in which bore the plug member is slidable with its splines disposed in the said peripheral grooves for keying the plug member to the socket for rotation therewith and said plug member having a circumferential groove in the periphery thereof, and a spring pressed ball carried by said socket member and adapted to engage in said circumferential groove for detachably retaining the plug member in the bore of the socket and for releasably retaining the motor and polishing element against axial separation.

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