

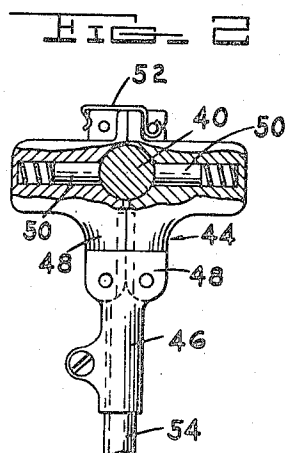
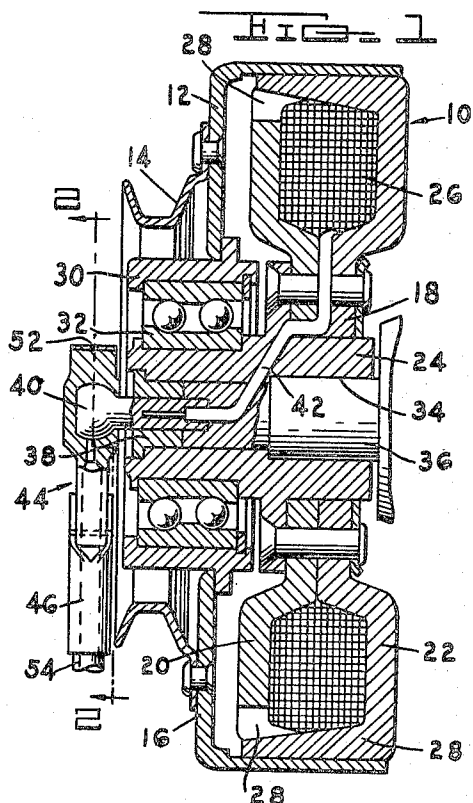
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ELECTRICAL POWER TRANSMITTING MECHANISM

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ELECTRICAL POWER-TRANSMITTING
MECHANISM

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This invention relates to electromagnetic power transmitting devices and more particularly to a novel means of supplying current to the electromagnetic coils thereof.

Broadly the invention comprehends the provision of an electromagnetic power transmitting device comprising cooperative power input and output members and an electromagnetic coil carried by one of the members wherein current is supplied to the coil between relatively movable members arranged along the axis of the device.

An object of the invention is the provision of simple and effective current conducting means for supplying current to the coil of an electromagnetic device between relatively rotatable members.

Another object of the invention is the provision of means for conducting current between a stationary member and a member rotatable thereto adapted to be supplied current for the operation thereof.

Another object of the invention is the provision of an electrical current conducting coupling providing for the effective transmission of current between relatively rotatable members for supply to an electromagnetic coil of an electromagnetic power transmitting mechanism.

A further object of the invention is the provision of an electromagnetic power transmitting drive having an electromagnetic coil as a part thereof wherein the current is supplied to a terminal of the coil rotatable therewith by a non-rotatable spring pressed brush assembly.

Other objects and advantages of the invention will appear from the following description taken in connection with the drawings, forming a part of the specification; and in which:

Fig. 1 is a vertical cross-sectional view of an eddy current electromagnetic power transmitting mechanism having a novel current conducting mechanism incorporated therewith; and

Fig. 2 is a partially vertical cross-sectionalized view taken substantially along lines 2-2 of Fig. 1.

The present invention is directed at the provision of means for effectively transmitting current between relatively rotatable members such as in the case of supplying current from a source of electrical power to an electromagnet of a rotary electromagnetically operated mechanism for the energization thereof. Through the provision of a terminal for the coil having the shape of an elephant's foot or the like and a brush assembly embracingly coupled to the terminal, an effective transmission of electrical cur-

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rent is possible while at the same time permitting of a feasible arrangement of the respective stationary and rotatable elements of the current transmitting means relative to the electromagnetic power transmitting mechanism of which it is to form a part. The brush assembly in one specific form comprises a pair of spring pressed brushes arranged in a suitable stationary holder in opposed axially aligned relation to one another having contacting engagement with the elephant foot terminal through the provision of concave faces being complementary to the external surface of the foot terminal.

Referring to the drawings for more specific details of the invention, 10 represents generally an electromagnetic power transmitting mechanism of the eddy current type comprising a driven member 12 adapted to be driven from a suitable source of power, not shown, by way of a grooved pulley 14 secured to the radial flange 16 of the driven member, and a cooperating rotor 18 mounted for rotation internally of the drum.

The rotor 18 comprises a pair of identical annular members 20 and 22 of cross-section U-shape fixedly mounted in adjacent relationship upon a stub shaft 24 and providing therebetween an annular space for the reception of a ring-shaped electromagnetic coil 26. The members 20 and 22 forming the field body of the power transmitting mechanism are each provided with pole arms 28 axially extended in overlapping relation externally of the coil 26, said arms at their external periphery being spaced from the internal annular surface of the drum by a predetermined amount. The drum has secured upon radial flange 16 thereof an axial hub member 30 which supports the drum for rotation upon a bearing 32 mounted upon stub shaft 24.

The stub shaft has a central bore 34 there-through for the reception of an output shaft 36 in one end thereof and a thimble insulation bushing 38 oppositely disposed in the other end. The bushing 38 supports therein a contact terminal button 40 having the shape of an elephant's foot or more specifically a truncated sphere, said terminal being connected to the coil by a lead wire 42 extending from one end of the coil between the hub sections of the members 20 and 22, through an opening in the stub shaft 24 and an opening in shaft 36 and which is fixedly secured in the button 40. The terminal button is fixed with relation to the rotor and shaft 24 as to be rotatable therewith and extends an axial distance beyond the shaft 38, the purpose of which will hereinafter appear.

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As a means of transmitting electrical current to the coil by way of terminal button 40 and lead wire 42, a brush assembly 44 is adapted to be arranged in engaging relation thereupon. Because of the rotative nature of the button 40, it is necessary for the effective transmission of electrical current thereto that the member, such as brush assembly 44, be mounted stationary and maintain a constant flow of current therethrough to the terminal button. As a means of achieving this result, the brush assembly comprises a post member 46 upon which is mounted a pair of pivoted elements 48, each of which has a spring pressed brush 50 therein. The elements are so arranged pivotally on member 46 as to be adapted to embrace terminal button 40 therebetween with the brushes in spring tensioned relation upon the outer periphery of the button wherein the brushes lie along an axis in opposing relation to one another. The elements 48 are provided with a spring clip 52 for frictionally clamping the elements together in encompassing relation upon the button 40. An electrical lead 54 is securely clamped in the post 46 and supplies current to the brushes 50 by way of the elements 48 from an electrical source of power, not shown.

Because of the provision of the spherically-shaped external surface of the terminal 40 and the complementary shape of the contacting portions of brushes 50, a maximum amount of current conducting area is achieved therebetween providing for a more effective transmission of current therethrough as well as affecting a superior holding means of the brush assembly 44 upon the terminal when in assembled relation thereto.

While this invention has been described in connection with certain specific embodiments, the principle involved is susceptible of numerous other applications that will readily occur to persons skilled in the art.

What I claim is:

1. An electromagnetic power transmitting mechanism comprising a driving member, a driven member associated with and adapted to be driven by the driving member, an electromagnetic coil secured upon one of the members having a lead line extending therefrom, a terminal having a truncated spherical shape connected to the end of the lead line from the coil and a stationary electrical power transmitting member having a pair of oppositely disposed, resiliently mounted brushes therein arranged in encompassing and electrical contacting position upon the terminal extending in a direction perpen-

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dicular thereto and a cage which closely embraces the spherical terminal on its spherical and truncated surface.

2. An electromagnetic power transmitting mechanism comprising a driving member, a driven member associated with and adapted to be driven by the driving member, an electromagnetic coil secured upon one of the members having a lead line extending therefrom, a terminal post terminating in a truncated sphere, a stationary brush assembly comprising a pair of pivoted arms each having a resiliently mounted brush thereon arranged on the post with the brushes in engaging relation upon the periphery of the sphere, and an electrical power conveying line connected to the brush assembly.

3. An electrical power transmitting coupling comprising a truncated spherical shaped terminal having an electrical line extending therefrom, an assembly mounted in loose encompassing relation on the terminal comprising a pair of arms pivotal toward and away from one another, a pair of brushes one in each arm engaging the periphery of the terminal in opposed relation to one another, and means holding the arms in clamped relation upon the terminal, said terminal and brush adapted for rotation relative to one another.

4. An electrical power transmitting coupling comprising a truncated spherical terminal post having an electrical lead line extending therefrom, a cage assembly mounted on the post having an internal cavity complementary to the peripheral shape of the post receiving the post therein in close embracing relation and a pair of diametrically opposed spring pressed brushes mounted in the cage having contacting relation upon the spherical surface of the post.

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