



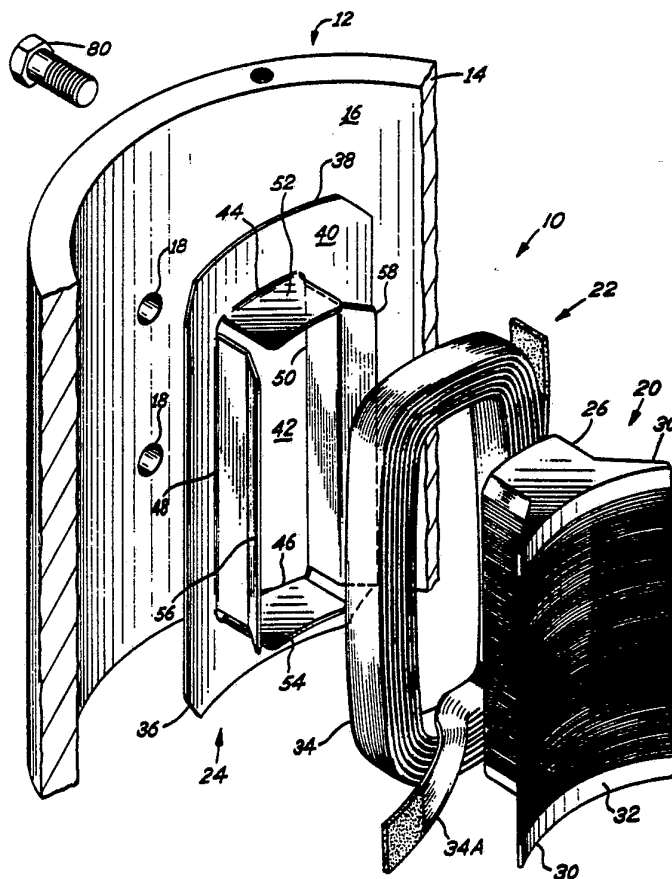
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(54) Title: FIELD ASSEMBLY INSULATOR

(57) Abstract

A new and improved integral, flexible insulating member for a motor field assembly is disclosed. The insulating member includes a curved back section adapted to receive the motor pole piece through a centrally located opening. The insulating member further includes end and side sections extending from the opening and adapted to receive the motor winding such that the end and side sections interpose the winding and pole piece. The back section of the insulating member interposes the winding and motor frame. The insulator is compressed about the winding to substantially avoid vibration thereof during operation.



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AMENDED CLAIMS

[received by the International Bureau on 28 July 1989 (28.07.89);
original claims 1,2,4,6,7,9 and 10 amended; other claims unchanged (4 pages)]

1. An improved integral flexible insulator for use in a field assembly of a motor having a generally cylindrical motor frame, said field assembly including a winding having a central opening therein and a pole piece, with one portion of said pole piece being extendable through the central opening of said winding so that said winding may be disposed between another portion of said pole piece and the radially inwardly facing surface of said motor frame when said field assembly is attached to said motor frame, said insulator comprising:

a back section having an inner back wall that may engage and conform to the radially inwardly facing surface of said motor frame when said insulator is attached to the motor frame, said back section also including first and second opposed end boundaries and first and second opposed side boundaries that define a substantially central pole opening in the inner back wall of the back section that may receive the one portion of said pole piece such that one portion of said pole piece may be attached to the inwardly facing surface of said motor frame;

first and second end sections that are integral parts of the back section and that extend generally radially inwardly from said first and second opposed end boundaries of said back section;

first and second side sections that are integral parts of the back section and that extend generally radially inwardly from said first and second opposed side boundaries of said back section;

said first and second end sections and said first and second side sections being adapted to

40 be received within the central opening of said winding such that said winding engages said inner back wall of said back section and portions of the first and second side sections when said field assembly is attached to said motor frame

45 whereby said integral flexible insulator physically isolates and insulates said winding from said motor frame and said pole piece and said winding is partially encompassed and gripped by said insulator.

5 2. An integral flexible insulator as claimed in claim 1 wherein said pole piece engages portions of said first and second side sections spaced radially inwardly from said back section; and wherein said back section is curved.

3. An integral flexible insulator as claimed in claim 1 wherein said pole opening is substantially rectangular.

5 4. An integral flexible insulator as claimed in claim 1 or 2 wherein the effective radius of the inner back wall of the back section is greater than that of the radially inwardly facing surface of said motor frame.

5 5. An integral flexible insulator as claimed in claim 4 where each of said first and second side sections includes a first portion extending substantially perpendicular to said back section and a second portion extending from said first portion at a predetermined angle.

5 6. An improved motor field assembly for attachment to a generally cylindrical motor frame; a pole piece including a base and tapered pole tips extending from said base so that the pole tips define a pole face that faces generally radially inwardly;

a pre-wound winding having a central opening therein;

an integral flexible insulator including

10 (i) a back section, defining an inner back wall, that engages and conforms to the radially inwardly facing surface of said motor frame, said back section including first and second opposed end boundaries and first and second

15 opposed side boundaries defining a substantially central pole opening that receives said base of said pole piece such that said pole piece extends through the central pole opening so as to be attachable to said motor frame, (ii) first

20 and second end sections that are integral parts of said back section and that extend generally radially inwardly from said first and second opposed end boundaries of said back section, and (iii) first and second side sections that are

25 integral parts of said section and that extend generally radially inwardly from said first and second opposed side boundaries of said back section;

said first and second end sections and said

30 first and second side sections being received within the central opening of said pre-wound winding such that said pre-wound winding engages said inner back wall of said back section and such that the first and second end sections and

35 the first and second side sections are interposed between said pre-wound winding and said pole piece;

said tapered pole tips of said pole piece engaging said first and second side sections so

40 as to compress said pre-wound winding between said first and second side sections and said inner back wall of said back section so that said integral flexible insulator grips said pre-

45 wound winding so as to substantially avoid
vibration thereof,

said integral flexible insulator also
serving to dielectrically isolate said pre-wound
winding from said motor frame and to isolate
said pole piece from said pre-wound winding.

5 7. A field assembly as claimed in claim 6
wherein said back section of said integral flexible
insulator is curved such that the effective radius
of the inner back wall of the back section is
greater than that of the radially inwardly facing
surface of said motor frame.

5 8. A field assembly as claimed in claim 7
wherein each of said first and second side sections
includes a first portion extending substantially
perpendicular to said back section and a second
portion extending from said first portion at a
predetermined angle.

9. A field assembly as claimed in claims 1 or
6 wherein said integral flexible insulator is a high
temperature thermoplastic.

10. A field assembly as claimed in claim 6 or
8 further including a varnish bond coating.