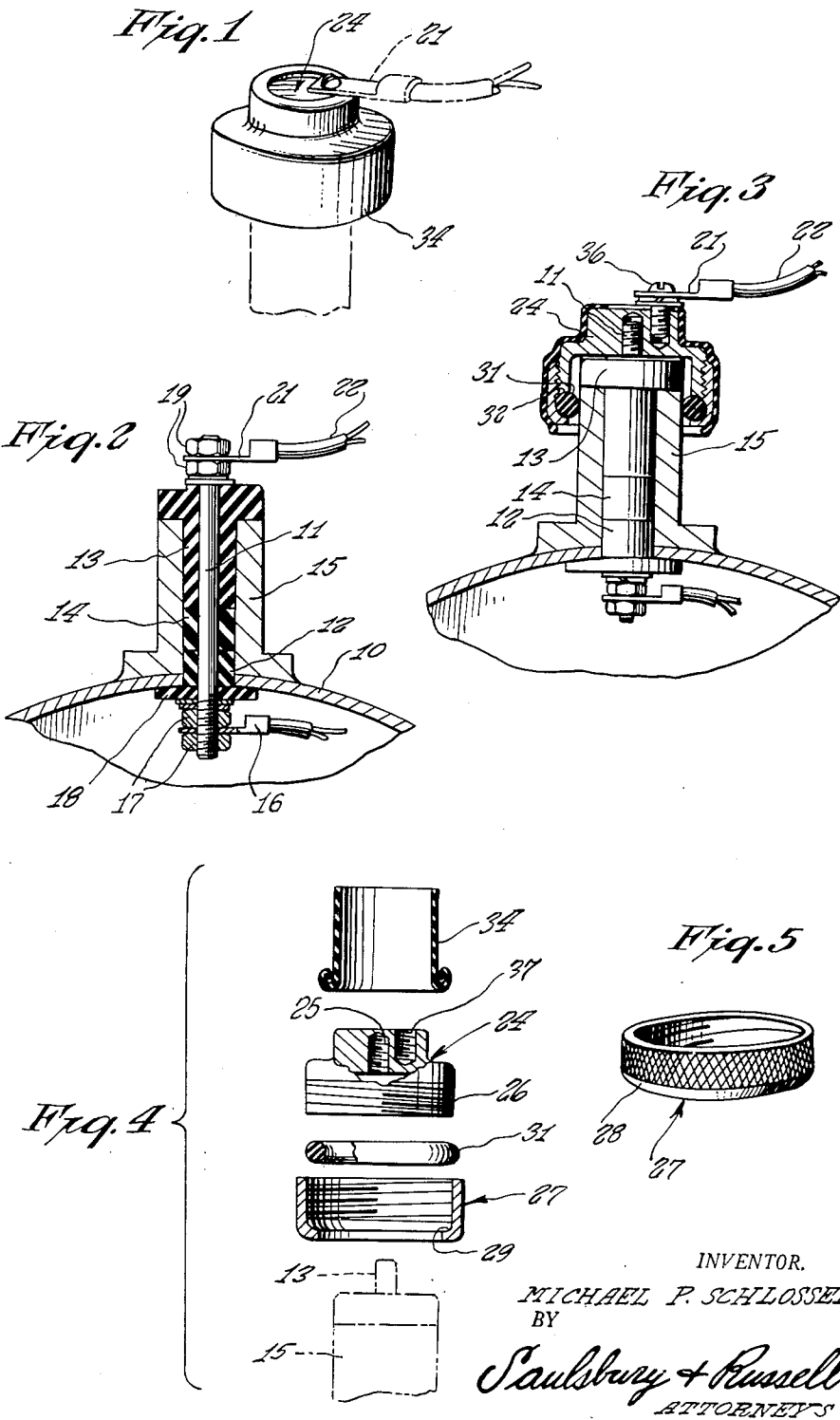


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M. P. SCHLOSSER
COMPRESSOR TERMINAL SEAL
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INVENTOR,
MICHAEL P. SCHLOSSER
BY
Saulsbury & Russell
ATTORNEYS

UNITED STATES PATENT OFFICE

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COMPRESSOR TERMINAL SEAL

Michael P. Schlösser, Port Chester, N. Y.

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3 Claims. (Cl. 174-77)

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This invention relates to a compressor terminal seal.

It so happens that with terminals used on a certain type of a refrigerator compressor and motor unit that after a period of time the seal for the terminal, which is of rubber, deteriorates to such an extent that there is a leakage from the sealed unit along the terminal rod, which must be stopped if gas is to be conserved and for the refrigerator to operate properly.

It is an object of the present invention to provide a simple seal for such a terminal as used on these compressor units which can be applied to the terminal and supported thereon in such a manner as to provide an effective seal therearound and without necessity of having to disassemble the compressor but wherein the assembly may be made on the exterior and without interfering with the original terminal seal and wherein simple insulation can be extended over the terminal member that is applied to the terminal rod.

Other objects of the present invention are to provide a terminal seal which is of simple construction, inexpensive to manufacture, easy to apply on the terminal, consumes little space, and efficient in operation.

For other objects and for a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawing, in which

Fig. 1 is a perspective view of the terminal seal secured to the terminal.

Fig. 2 is a longitudinal sectional view of the terminal without the seal of the present invention attached thereto.

Fig. 3 is a sectional view, in elevation, of the terminal and of the seal applied thereon and the new connection of the lead wire with the seal.

Fig. 4 is an exploded or collective view of the parts of the seal separated from one another, certain of the parts being in section and other parts having portions broken away.

Fig. 5 is a perspective view of the gasket securing ring.

Referring now to the figures, 10 represents a compressor unit housing which is sealed and into which there extends a terminal rod 11. This rod extends through insulating rings 12, and 13 and a rubber seal sleeve 14 disposed between the insulating rings or sleeves 12 and 13. This assembly is disposed in a sleeve of metal 15 which is secured to the exterior of the housing 10 and protrudes therefrom. The terminal rod 11 is assembled within the sleeve 15 before the unit

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housing 10 has been finally sealed and a connection is made on the lower end of the rod with a cable terminal 16 by means of nuts 17. An insulating washer 18 will engage with the inner face of the housing 10. The outer end of the terminal rod is threaded to receive nuts 19 for securing a terminal 21 of lead wires 22. As the nuts 17 and 19 are tightened, the rubber sleeve 14 is squeezed in such a manner as to provide a tight seal engagement with the rod 11 and the inner surface of the sleeve portion 15 on the housing 10. Normally, this seal is sufficient to prevent leakage but after a period of time the rubber sleeve deteriorates and leakage will occur through the sleeve projection 15 and outwardly along the rod 11.

In order to overcome this leakage without having to disassemble the terminal assembly and the sealed unit, I have provided a terminal seal adapted to be extended over the rod 11 and the sleeve projection 15 and have sealing engagement with the exterior surface of the sleeve projection 15 so that any leakage of gas will be prevented. According to the invention, there is provided a member formed of aluminum or other conducting material and as indicated at 24 which has a threaded central opening 25 and an exteriorly threaded skirt portion 26. This member 24 is threadedly connected onto the threaded end of the terminal rod 11 and brought tight onto the insulating ring 13. Before making the connection of the member 24, a ring 27 having knurling 28 thereon is first extended over the sleeve projection 15. This ring 27 has an internal rounded seat 29 adapted to receive gasket ring 31 and to provide a large area of contact of the ring surface 31 therewith. Likewise the ring 31 is extended over the sleeve projection 15 and into the ring 27. The ring 27 is internally threaded with a left hand thread so that upon connecting the ring with the externally threaded skirt portion 26 of the member 24, the turning of the same will not cause the disengagement of the member 24 from the terminal. The threads on the member 26 are likewise left hand threads to receive the ring 27. The end of the member 24 is grooved as indicated at 32 to have flush engagement with the top of the gasket ring 31. Accordingly, a pocket is obtained between the ring and the member 24 whereby as the ring 27 is tightened upon the member 24, the gasket ring 31 will be urged radially inwardly to have tight engagement with the exterior surface of the sleeve projection 15. Gas leakage will accordingly be prohibited along the exterior surface of

the sleeve projection 15 and the terminal will accordingly be sealed.

The terminal member 24 will accordingly be energized with current and thus should be insulated. A rubber sleeve 34 is fitted over the top of the terminal member and can be rolled down over and about the lower edge of the ring 27 which is rounded to receive the same and to retain it. This insulating sleeve 34 is preferably of rubber and can be stretched over and extended about the parts and will have tight engagement with the surfaces thereof. The upper end of the sleeve is opened in order to permit the extension of a screw 35 into an offset opening 37 entering from the top of the member 24. By having this hole 37 offset, the member 24 need not be made long. With the screw 36 a terminal 21 of the wire 22 is connected to the member 24. The finished terminal sleeve will appear as shown in Figure 1.

It should now be apparent that there has been provided an effective seal for compressor unit terminals which can be connected to the terminal rod without need of special tools and made secure in sealing engagement with the sleeve projection of the housing without having to disassemble the compressor unit for releasing the terminal rod 11. This seal can be made upon the terminal in the field and without having to return the refrigerator to the shop. When the terminal seal has become ineffective, it can be readily replaced or the gasket ring 31 can be changed.

While various changes may be made in the detail construction, it shall be understood that such changes shall be within the spirit and scope of the present invention as defined by the appended claims.

I claim:

1. A terminal seal comprising a member having a central threaded opening adapted for the connection of the member upon a terminal rod, said member having an externally threaded skirt portion adapted to extend down the sides of the terminal, a sealing ring adapted to be extended about a sleeve projection of the terminal, a retaining ring for causing the sealing ring to be compressed against the skirt portion of the member and against the sleeve projection of the terminal, said retaining ring having internal left hand threads for the securement of the retainer ring with the skirt portion of the member and means for securing an electric wire to the member.

2. A terminal seal comprising a member having a central threaded opening adapted for the connection of the member upon a terminal rod, said member having an externally threaded skirt portion adapted to extend down the sides of the terminal, a sealing ring adapted to be extended about a sleeve projection of the terminal, a retaining ring for causing the sealing ring to be compressed against the skirt portion of the member and against the sleeve projection of the terminal, said retaining ring having internal left hand threads for the securement of the retainer ring with the skirt portion of the member and means for securing an electric wire to the member, said retaining ring having a radially inwardly extending portion with a rounded surface for receiving the sealing ring in a flush manner, and the lower end of the skirt portion being grooved to similarly receive the surface of the sealing ring whereby upon the member and the retaining ring being brought into closed engagement upon one another, the sealing ring will have its sealing portions extended radially inwardly and adapted for tight sealing engagement with the exterior surface of the sleeve projection.

3. A terminal seal for compressor units and the like comprising a member having a main portion with a central threaded opening therein adapted to effect the connection of the member upon a terminal rod, said member having an integral depending skirt portion adapted to extend downwardly over a sleeve projection of the terminal, a sealing ring carried on the depending skirt portion and adapted to sealingly engage the terminal sleeve projection, said sealing ring being removable and forming a part of the assembly, and means for connecting a terminal wire to the member independently of the interior surface thereof.

MICHAEL P. SCHLOSSER.

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