United States Patent

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[54] **HERMETICALLY SEALED TERMINAL CONSTRUCTION**
12 Claims, 10 Drawing Figs.

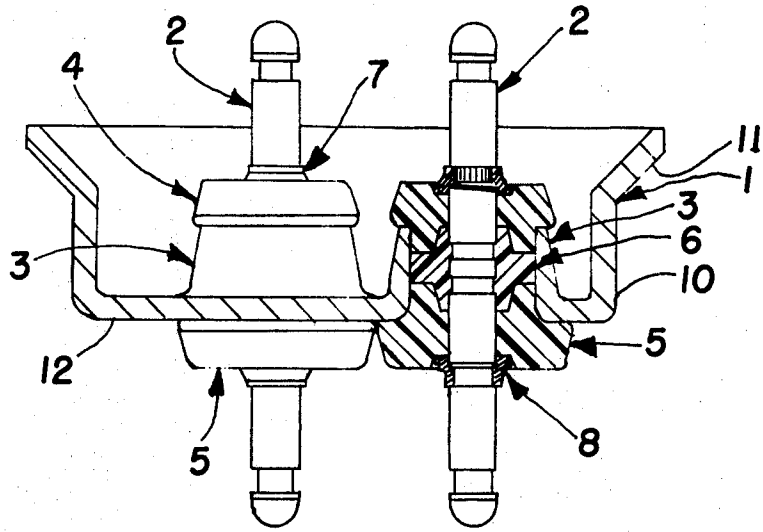
[52] **U.S. Cl.** **339/126,** 174/153, 339/217
[51] **Int. Cl.** **H01r 9/20**
[50] **Field of Search** 174/153; 339/214, 94, 126, 217

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ABSTRACT: Hermetically sealed electrical terminals in which the conductor pins are electrically insulated from and hermetically sealed to a support by means of a pair of essentially rigid dielectric caps between which a distortable dielectric sealing member is incapsulated, the assembly permitting the use of highly conductive conductor pins, such as copper and copper alloys, which cannot be used in conventional glass-to-metal hermetically sealed terminals.



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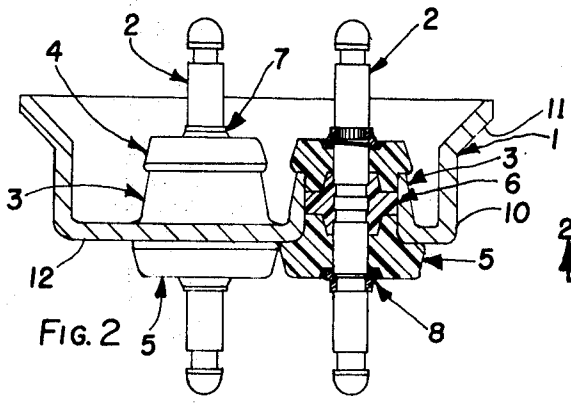


FIG. 2

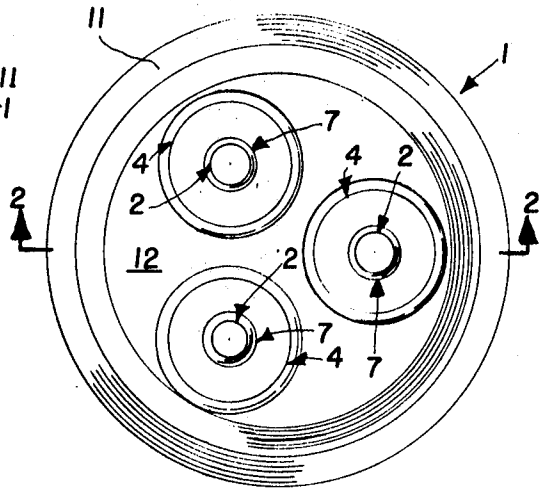
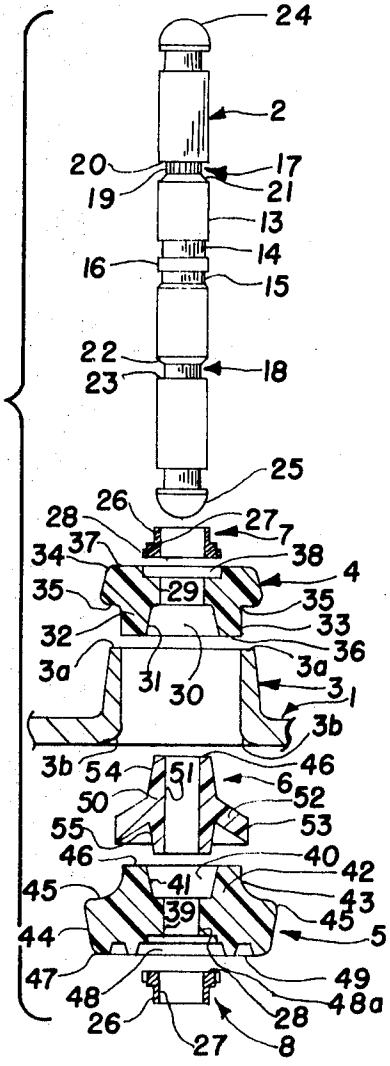


FIG. 1

FIG. 3



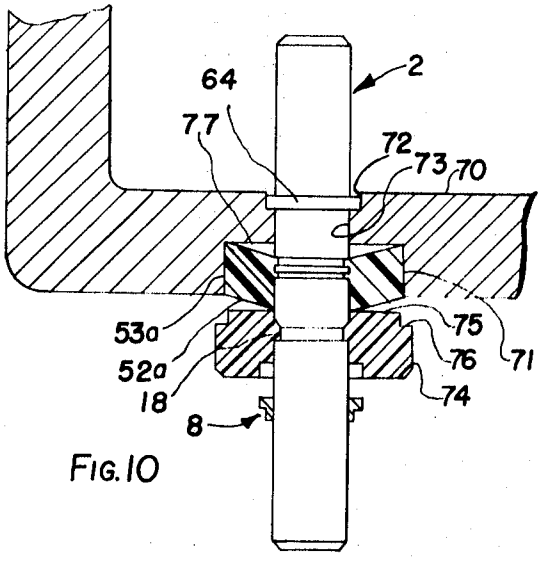


FIG. 10

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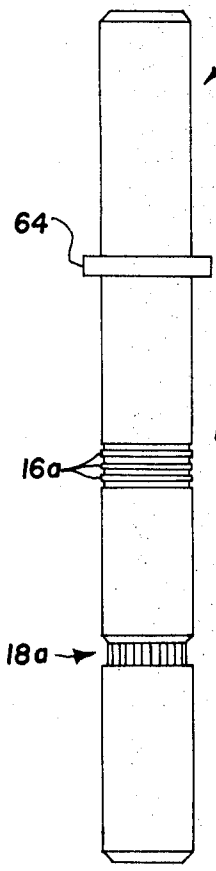


FIG. 7

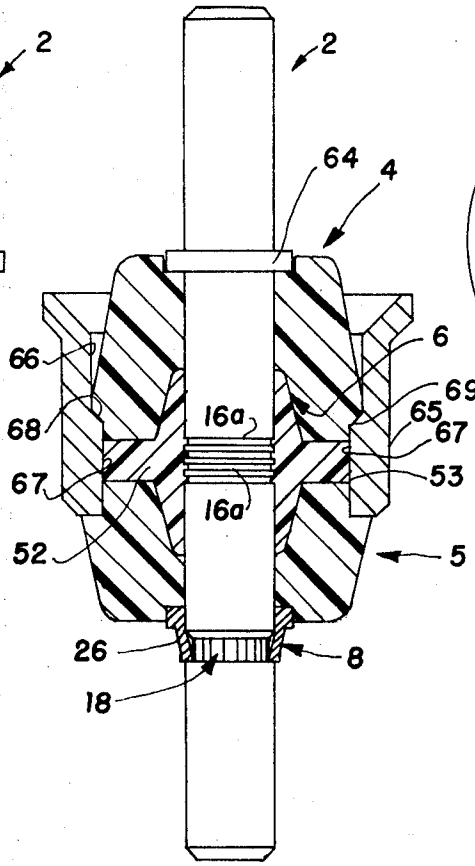


FIG. 8

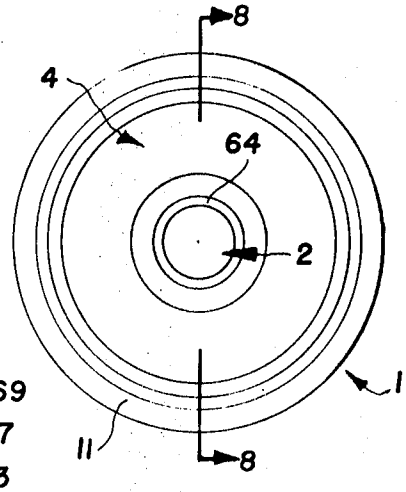


FIG. 9

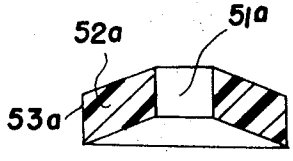


FIG. 4

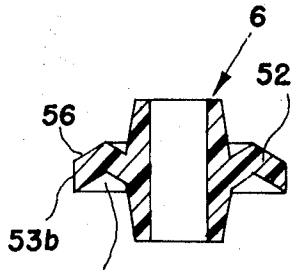


FIG. 5

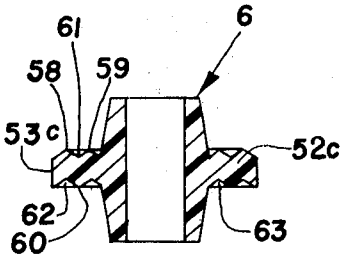


FIG. 6

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HERMETICALLY SEALED TERMINAL CONSTRUCTION

BACKGROUND OF THE INVENTION

The present invention relates to electrical terminals, and has to do more particularly with terminals of the type wherein one or more conductor pins have intermediate portions each of which projects through and is secured to a supporting body by means of a seal which electrically insulates the conductor pin from the supporting body and at the same time hermetically seals the pin against the exchange of atmosphere between one side of the terminal body and the other. Such terminals find widespread usage in diverse installations wherein environmental conditions, such as temperature and humidity, must be taken into consideration. Such terminals thus find wide usage in refrigeration equipment, in transformers, relays, starters, and electrical equipment wherein explosion proofness is required.

To date, substantially all hermetically sealed terminals are of what may be characterized as a "hard seal" type, embodying a glass-to-metal or ceramic-to-metal seal. Such seals, while effective to hermetically seal the terminals, are subject to a number of disadvantages. Paramount among these disadvantages is the limitation imposed upon the materials from which the conductor pins may be formed, due to differences in the coefficients of expansion between the conductor pin and the sealing material. Copper and copper alloy conductor pins, which are ideal conductors of electricity, cannot be used with glass or ceramic seals due to the differences in their coefficients of expansion. For this reason, conventional hermetic terminals utilize conductor pins formed from stainless steel, stainless steel with a copper core, or from nickel alloys. Such pins have an extremely low percentage of conductivity as compared, for example, with comparable-size pins formed from copper. Consequently, of necessity terminals utilizing steel conductor pins must be substantially larger than would be required if the conductor pins were formed from copper or other materials having greater conductivity.

Glass and ceramic seals are also subject to being cracked or broken if roughly handled, thereby impairing or destroying the hermetic barrier between the pins and their supporting structure, as well as impairing or destroying the ability of the seals to electrically insulate the conductor pins relative to the support in which they are mounted, which in many instances comprises a metallic member. In addition, and again due to critical temperature considerations, it has not been possible to repair conventional terminals where such repair involves a brazing or other heat-generating operation.

While numerous attempts have hitherto been made to provide what might be termed a "soft seal" hermetically sealed terminal utilizing various distortable dielectric materials as the sealing material, such terminals have been unsuccessful due to their inability to withstand high pressures, which is a standard test for establishing the integrity of an hermetically sealed terminal, as well as other environmental conditions, such as elevated temperatures. This is believed due in part to plastic flow and creep of the distortable materials which are employed to form the seal.

In contrast to the foregoing, the instant invention provides an essentially "soft seal" terminal construction which is free from the disadvantages enumerated above and which at the same time provides an effective and lasting hermetic seal.

RESUME OF THE INVENTION

The present invention contemplates a construction wherein a sealing member, which may be composed of a distortable dielectric material, preferably an elastomeric material such as natural or synthetic rubber, is incapsulated between a pair of essentially rigid insulating members which are preferably formed from a thermosetting plastic material, such as diallyl phthalate. The cap members are utilized to compress and maintain the distortable dielectric material in sealing engagement both with the conductor pin and with the surrounding supporting member, and at the same time they rigidly mount the conductor pin and also fully cover and protect the sealing member. The supporting member may comprise an annular socket as such, or it may comprise a socket-defining orifice in a larger structure, such as a housing, relay cover or mounting plate.

The distortable dielectric sealing member comprises a body, preferably of frustoconical configuration of a size such that when compressed between the cap members, the frustoconical body will be axially compressed and displaced, the combined compression and displacement acting to place the seal under radial compression between the surrounding annular socket of the supporting member and the conductor pin.

The conductor pins utilized in the instant invention may be composed of any conductive material since the problem of relative expansion and contraction between the conductor pin and its surrounding seal is eliminated. The invention thus opens the hermetically sealed terminal field to miniaturization in that comparable conductive capacity can be achieved utilizing conductor pins of much smaller size formed from materials having higher conductive capacities than the pins currently in use. At the same time an airtight electrical terminal construction is provided for use in conjunction with sealed compressors or other sealed units wherein leakage into or out of the unit, by way of the terminals, is effectively prevented. Locking means, which may take the form of eyelets surrounding the pins, are utilized to fixedly secure the end caps and interposed sealing members relative to the conductor pins with the sealing members maintained in their compressed condition, the eyelets and pins coacting to hold the parts in assembled condition.

DESCRIPTION OF THE DRAWINGS I

FIG. 1 is a plan view of an exemplary terminal in accordance with the invention, the terminal illustrated comprising a three-connector header particularly suited for use in compressors for refrigeration equipment.

FIG. 2 is a vertical sectional view taken along the line 2—2 of FIG. 1.

FIG. 3 is an exploded vertical sectional view illustrating the component parts of the terminal construction.

FIGS. 4, 5, and 6 are vertical sectional views illustrating alternative configurations for the distortable dielectric sealing member.

FIG. 7 is a side elevational view of a modified form of conductor pin.

FIG. 8 is a vertical sectional view illustrating the conductor pin of FIG. 7 incorporated in a modified terminal construction.

FIG. 9 is a plan view of the modified terminal construction illustrated in FIG. 8.

FIG. 10 illustrates a modification wherein the supporting member comprises an integral part of a larger structure, such as a housing.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring first to FIGS. 1 and 2, the terminal construction illustrated is composed of a supporting member 1 mounting a plurality of connector pins 2 which, in accordance with the invention, are fixedly and hermetically sealed within the annular socket-forming sleeves 3 by means of the opposing end caps 4 and 5 which incapsulate the distortable sealing member 6 therebetween, the end caps 4 and 5 being fixedly secured in their assembled positions by means of the eyelets 7 and 8 secured to pins 2.

The supporting member 1 may be of any desired configuration and can be formed of any material suitable for the purpose, although for most terminals a steel body is preferred since it is relatively inexpensive and can be easily handled and formed into the desired shape. Essentially, however, the material from which the supporting body will be formed is governed in large measure by the mode of installation of the

terminal, i.e., whether it is to be welded, soldered, brazed, pressed fitted, or possibly adhesively secured in place.

In the embodiment illustrated in FIGS. 1 and 2, the supporting member is of cup-shaped configuration, having an annular body wall 10 terminating at one end in an out-turned mounting flange 11 and at its opposite end in a base 12 interrupted by the spaced-apart sleeves or sockets 3 which project upwardly within the annular body wall 10 at spaced-apart intervals. The configuration illustrated is a conventional arrangement for a three-pin header.

The conductor pin, which is best seen in FIG. 3, may be formed from essentially any conductive material, although copper or copper alloy pins are preferred because of their high electrical conductivity. However, since expansion and contraction of the pin does not pose a problem due to the design of the terminal, the terminal designer is afforded a wide choice of conductor pin materials, depending upon the desired strength, size, and conductivity of the pins.

While the configuration of the pin may vary depending upon the particular application for which it is designed, it will preferably comprise an elongated body 13 having medially disposed annular grooves 14 and 15 defining an annular rib 16 therebetween, the grooves and rib being positioned to lie within the confines of the sealing member 6 in the assembled terminal. Such configuration breaks the surface continuity of the pin in the area of the distortable sealing member and assists in the formation of a tight seal, although in some instances it has been found that an airtight seal can be provided without configuring the pin in the area of the seal.

The conductor pin is also provided with eyelet-receiving grooves 17 and 18. In the embodiment illustrated, the groove 17 is knurled at 19 and is provided with a right-angle outer shoulder 20 and a beveled or tapered inner shoulder 21. Groove 18 also has a tapered inner shoulder 22 and a right-angle outer shoulder 23, although in this instance the groove 18 is not knurled. While the particular configuration of the eyelet grooves just described has been found to be highly suitable for receiving the cap-anchoring eyelets 7 and 8, it should be evident that the configuration may be modified, the primary consideration being the provision of an abutment means which may be securely engaged by the eyelets. Desirably, the pins will be symmetrical so that they may be installed with either end uppermost.

The configuration of the distal ends of the connector pins does not constitute a limitation on the invention and may be varied as desired. However, since the pin must be passed through the eyelets, the caps, and the sealing member, at least one end of the pin should have a diameter substantially no greater than its body 13, as will be discussed in greater detail hereinafter. In the embodiment illustrated, the pin is provided at its opposite end with heads 24 and 25 to facilitate the engagement of the pin with mating socket members.

The eyelets 7 and 8 may be formed from any suitable material, although brass is preferred in that it is easy to machine and readily lends itself to being crimped while at the same time possessing sufficient strength to securely anchor the cap members in place. The eyelets may be identical, each comprising a tubular body 26 having a bore 27 of a size to pass freely around the conductor pin and moved to its position of use, the eyelets each having an out-turned annular flange or seat 28 positioned to engage the underlying cap member. The periphery of the seat 28 may be knurled, if desired, for biting engagement with the annular wall surface of a seat-engaging recess in the underlying cap member.

The cap members 4 and 5 serve as essentially rigid insulating members which centrally affix the conductor pins in the supporting body and, at the same time, coact to compress and incapsulate the sealing member 6. A high strength thermosetting plastic material having high dielectrical properties is preferred for the cap members, although any essentially rigid insulating material may be employed. A preferred thermosetting plastic material is diallyl phthalate, which is a polymerizable monomer which will polymerize with heat and catalyst into a hard insoluble polymer capable of being used as such or in conjunction with various fillers, such as Fiberglas. Various thermoplastic resins, such as Nylon may be employed, although it is preferred to avoid using resins which are subject to cold flow since they lack the desired rigidity. In essence, the caps comprise essentially nondistortable dielectric members.

As best seen in FIG. 3, the cap member 4 has a center bore 29 having a diameter of a size to receive the body 13 of the conductor pin 2, the bore opening at its inner end into a pocket 30 having a tapered annular wall 31 which defines the inner surface of an annular collar 32 adapted to be received in the annular sleeve or socket 3 forming a part of the supporting member 1. Its outer wall surface 33 is of a diameter such that it will be snugly received within the sleeve 3; and preferably the outer wall surface 33 also will be tapered slightly to facilitate its insertion in the sleeve. If desired, the bore 29 also may be tapered outwardly by a few degrees in the direction of the pocket 30.

The cap member 4 has an enlarged head portion which defines an annular ledge 35 adapted to seat against the end edge 3*a* of socket 3. The end edge 36 of collar 32 defines an annular compression face which, as will be discussed hereinafter, coacts with an opposing face on cap member 5 to compress the sealing member 6 therebetween.

As also seen in FIG. 3, the cap member 4 has an essentially flat outer surface 37 which may be provided with a centrally disposed recess 38 surrounding the bore 29, the recess being of a size to receive the out-turned flange 28 of the eyelet 7. As previously indicated, the periphery of the eyelet flange 28 may be knurled and of a size to enter into biting engagement with the wall surface of recess 38 when the eyelet is seated therein.

The cap member 5 is of essentially the same configuration as the cap member 4, being provided with a center bore 39, a pocket 40 having an outwardly tapered inner wall 41 defining the inner surface of a collar 42 having an outer wall 43, both of which walls are preferably tapered, as previously indicated. The cap member 5 also has an enlarged head 44 terminating in an annular ledge 45 which, in this instance, is formed on a radius so as to conform to the curved lowermost end 3*a* of socket-defining sleeve 3. The innermost end of the collar 42 defines an annular compression face 46 which, in the assembled terminal, lies in spaced relation to the corresponding compression face 36 of cap member 4. The cap member 5 also has an outer surface 47 and may include an eyelet-receiving recess 48, which in the embodiment illustrated has a double diameter, with the flange 28 of the eyelet 8 adapted to seat against the innermost diameter 48*a*. If desired, the outer surface 47 of the cap may be provided with one or more annular grooves, such as the groove 49, which effectively increases the length of the oversurface path between the conductor pin and the socket 3 of the supporting member. Similar annular grooves may be provided in the surface 37 of cap member 4, if so desired.

The sealing member 6 is a distortable dielectric member, and is preferably formed from an elastomeric material, such as either natural rubber or a synthetic, such as neoprene or Buna N. Fundamentally, the sealing member is composed of a dielectric material capable of being deflected and compressed between the opposing cap members and yet of such character that it will not stress relieve itself to the extent of impairing the integrity of the seal which is formed.

The configuration of the sealing member is extremely important in that it is designed to be acted upon by the caps so as to develop mechanical forces effective to form an airtight seal between the socket 3 of the supporting member and the conductor pin 2. Essentially, the configuration of the seal is such as to develop radial forces of appreciable magnitude by means of relatively small axial forces.

Again referring to FIG. 3, the sealing member 6 in the embodiment illustrated has a hub 50 with a center bore 51 extending therethrough, and a distortable body 52 projecting outwardly from its middle. In the embodiment illustrated, the distortable body is in the nature of an essentially frustoconical

skirt having a peripheral wall surface 53 lying in substantially parallel relation to the longitudinal axis of the center bore 51. The sealing member is further characterized by tapered hub portions 54 and 55 extending outwardly in opposite directions from the annular skirt 52, the tapered hub portions being of a size to be seated in and compressed by the tapered wall surfaces of the pockets 30 and 40 in the cap members 4 and 5, respectively.

The external dimensions of the sealing member 6 are preferably oversize with respect to the mating parts of the end members. Thus, by way of example, the cross-sectional dimensions of the tapered portions 54 and 55 of the hub 50 will be larger than the corresponding cross section dimensions of the tapered annular walls 31 and 41 of cap members 4 and 5, respectively, and hence will be compressed when the parts are assembled. In similar fashion, the outside diameter of the peripheral wall surface 53 of distortable body 52 preferably will be larger than the inside diameter of the socket-forming sleeve 3. It is also preferred that the center bore 51 in the sealing member be of somewhat smaller diameter than the diameter of the body portion 13 of the conductor pin.

It should thus be apparent that as the sealing member is distorted from its preassembled condition, as illustrated in FIG. 3, to its assembled condition, as shown in FIG. 2, it will be compressed both axially and radially, with primary emphasis upon the radial compression of the distortable body 52. Thus, the frustoconical skirt defined by the annular body 52 is flattened and compressed between the opposing annular compression faces 36 and 46 of the cap members, and at the same time the surrounding socket 8 compresses the body 52 radially inwardly, the body being maintained in its radially compressed, essentially planar disclike condition by means of the cap members and socket. The dimensioning of the parts is such that the major forces developed are radial forces exerted on the pin throughout the length of the sealing member, with oppositely directed radial forces exerted against the inner surface of socket 3 in the area of the peripheral wall surface 53 and against the tapered wall surfaces 31 and 41 of end caps in the areas of the tapered hub portions 54 and 55. In this connection, it will be understood that the axial spacing between the opposing cap members 4 and 5, when in the assembled condition illustrated in FIG. 2, will be such as to place the sealing member under axial compression with the frustoconical skirt flattened; and it also will be evident that when the terminal is fully assembled, the sealing member is completely captive, being confined between the cap members and the surrounding sleeve, and hence fully protected.

Various modifications may be made in the invention without departing from its spirit and purpose. For example, while it is preferred that the bore in the sealing member be of smaller diameter than the diameter of the conductor pin, it may be the same size or even slightly larger, depending on the overall dimensions of the sealing member and the extent to which the member is to be distorted and radially compressed. Likewise, the outside diameter of the distortable body 52 may be varied, and while the tightest seal will normally be obtained where the diameter of the annular wall 53 is greater than the inside diameter of socket 3 even when in the unexpanded condition shown in FIG. 2, there are situations wherein the diameter of annular wall 53 may be the same as, or even somewhat smaller than the inside diameter of socket 3, depending on the overall dimensions of the parts and the extent of compression required to provide the desired seal in any given installation. Similar considerations apply to the hub portions 54 and 55 which, for example, may be of initially smaller diameter than the pockets 30 and 40 and expanded during assembly by an oversize conductor pin.

While a sealing member of the configuration shown in FIG. 3 is preferred since the tapered hub effectively follows the contour of the wall surfaces of the pockets in the end caps and will expand to fill voids which might occur, there are instances wherein the hub may be omitted, the sealing member being configured as illustrated in FIG. 4 wherein it takes the form of a frustoconical skirt as such. Thus, the sealing member will consist of an annular skirt 52*a* surrounding a center bore 51*a*, the skirt-defining body terminating outwardly in a peripheral wall surface 53*a*.

While the body of the sealing member is preferably of the frustoconical configurations illustrated in FIGS. 3 and 4, it may take other configurations, such as those illustrated in FIGS. 5 and 6. Thus, FIG. 5 illustrates an embodiment wherein the body 52*b* is essentially V-shaped in cross section, having a peripheral wall surface 53*b* which will be radially compressed when the V-shaped skirt having a ridge 56 and a valley 57 is flattened by the cap members.

FIG. 6 illustrates yet another embodiment wherein the body 52*c* is, in effect, of corrugated configuration in cross section, again having a peripheral wall surface 53*c* subtending the ridges 58, 59 and 60, and the valleys 61, 62 and 63. Other shapes may also be employed for the distortable body, the essential characteristic being an annular body which in part at least may be deflected axially relative to its pin-receiving bore and of a size to be effectively compressed between the surrounding socket and the centrally disposed conductor pin, with the deflected body maintained in the compressed condition by means of the opposing cap members.

The configuration of the conductor pin may also be varied, and one such variation is illustrated in FIG. 7. As seen therein, the pin is provided with an integral eyelet or stop 64 machined into the pin as an incident of its manufacture. Such configuration will take the place of the eyelet 7, as shown in FIG. 3. Similarly, the pin may be provided with a plurality of annular ribs 16*a* to break the continuity of the pin surface in the area of the seal to thereby prevent leakage along the surface of the pin which might occur if there is a surface imperfection in the pin or its surface has been scratched.

FIG. 8 illustrates a modification of the invention wherein the conductor pin illustrated in FIG. 7 is incorporated in a modified terminal construction wherein the body part 1 is in the form of an annular ring 65 having a first inside diameter 66 and a somewhat smaller second inside diameter 67 against which the peripheral wall surface 53 of the annular enlargement 52 of the sealing member is adapted to seat. In this embodiment, the cap member 4 is adapted to seat within the first inside diameter 66 of the annular ring 65, the cap having an annular ledge 68 adapted to seat on the inclined shoulder 69 interconnecting the first and second inside diameters of the annular mounting ring. It should thus be evident that a particular configuration of the parts does not constitute a limitation on the invention other than to the extent the resilient body must be capable of being compressed and confined by the opposing cap members or their equivalents.

One such equivalent arrangement is shown in FIG. 10 wherein the connector pin 2 is mounted directly to a housing 70 having an integral socket 71 for receiving the sealing member 52*a* which in this instance, is of the type illustrated in FIG. 4. The housing 70 is itself formed from a dielectric material and hence performs the functions of both the supporting member and one of the cap members. In the embodiment illustrated, the connector pin is of the type shown in FIG. 7, the integral stop 64 seating in an annular recess 72 surrounding a pin-receiving bore 73 extending through the housing between socket 71 and recess 72. The annular wall 53*a* of the sealing member is of a size to be received in socket 71 when in its initial or noncompressed condition, as illustrated. The cap 74 is provided with an annular compression face 75 surrounded by a ledge 76 adapted to seat against the outer surface of the housing 70 when the parts are assembled. Upon axial displacement of the cap member 74 toward the housing 70, the sealing member will be compressed and restrained within the socket 71, the bottom wall 77 of the socket effectively providing a compression face coacting with the face 75 of cap member 74 to compress the sealing member therebetween. The parts will be locked in assembled condition by means of eyelet 8 which, as in the earlier embodiments, is caused to engage groove 18 in the conductor pin. It may be

noted that in this particular embodiment, the cap member **74** need not be formed from a dielectric material since the housing **70** which acts as the supporting member itself serves as the insulating medium in cooperation with the sealing member **52***a*.

The mode of assembly of terminals constructed in accordance with the invention will vary depending upon the particular installation, although it will be evident that the various parts may be assembled using handtools, or they may be machine fed, collated on spindles or other holding means, and automatically assembled in a series of machine operations.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. In a hermetically sealed terminal construction,
a supporting member having a socket-defining sleeve,
opposing compression members closing the opposite ends of said sleeve, said compression members each having a center bore extending therethrough,
a conductor pin extending through the center bores in said compression members,
a distortable dielectric sealing member surrounding said conductor pin and incapsulated in said socket-defining sleeve between said compression members, said sealing member having an annular body of a size to be radially compressed within said sleeve and maintained in the radially compressed condition by means of said compression member, and
said sealing member comprising an essentially frustoconical skirt having a peripheral wall surface which engages said socket-defining sleeve, the peripheral wall surface of said sealing member having an initial diameter which is larger than the diameter of said socket-defining sleeve.

2. The terminal construction claimed in claim **1** wherein said sealing member has a center bore therein in which said conductor pin is received, said center bore having a diameter which is initially slightly smaller than the portion of said conductor pin engaged thereby.

3. In a hermetically sealed terminal construction,
a supporting member having a socket-defining sleeve,
opposing compression members closing the opposite ends of said sleeve, said compression members each having a center bore extending therethrough,
a conductor pin extending through the center bores in said compression members,
a distortable dielectric sealing member surrounding said conductor pin and incapsulated in said socket-defining sleeve between said compression members, said sealing member having an annular body of a size to be radially compressed within said sleeve and maintained in the radially compressed condition by means of said compression members, and
said sealing member having tapered hub portions lying on opposite sides of said annular body, said compression members having mating tapered portions of a size to engage and compress the tapered hub portions of said sealing member, the annular body of said sealing member being initially of essentially frustoconical configuration and having a peripheral wall surface, said essentially frustoconical body being flattened and compressed by the said compression members whereby, in the assembled terminal, said frustoconical body assumes an essentially planar disclike configuration in which it lies at substantially right angles to the longitudinal axis of said surrounding sleeve.

4. The terminal construction claimed in claim **3** wherein said conductor pin has an annular groove therein defining an interruption to the surface of said pin lying within the confines of said sealing member.

5. The terminal construction claimed in claim **4** including mounting means fixedly securing said compression members relative to each other and to said conductor pin.

6. The terminal construction claimed in claim **5** wherein at least one of said mounting means comprises an eyelet surrounding said conductor pin, said eyelet having a flange portion engaging the adjoining compression member and a body portion in crimped engagement with an annular groove in said conductor pin.

7. In a hermetically sealed terminal construction,
a supporting body having a socket-defining sleeve,
an opposing pair of cap members at least partially inserted in the opposite ends of said sleeve, said cap members each being formed from an essentially rigid nondistortable dielectric material and having a center bore extending therethrough opening inwardly into a pocket having a tapered annular wall defining the inner surface of an annular collar adapted to be snugly received within said socket-defining sleeve, said collar defining an annular compression face at its innermost end,
a conductor pin extending through the center bores in said cap members, said conductor pin having an elongated body portion the diameter of which is of a size to be snugly received in said center bores,
a distortable dielectric sealing member having a hub surrounding said conductor pin and an intermediate skirt-defining body extending radially outwardly beyond said hub, the portions of said hub lying on opposite sides of said annular body being tapered to correspond to the tapered pockets in said cap members, said skirt-defining body having an outside diameter which, when unrestrained, is greater than the inside diameter of said socket-defining sleeve,
said sealing member being contained within said socket-defining sleeve between said cap members, with said sockets in engagement with the tapered hub portions of said sealing member, with said annular skirt-defining body under radial compression between said sleeve and said conductor pin, and with the compression faces of said cap members in compressive engagement with opposite sides of said radially compressed annular skirt-defining body so as to maintain said body in the radially compressed condition, and
mounting means fixedly securing said cap members relative to each other and to said conductor pin.

8. The terminal construction claimed in claim **7** wherein said annular body is of generally frustoconical configuration when in the unrestrained condition, and wherein, when compressed between said cap members, said annular body is of essentially disclike planar configuration.

9. The terminal construction claimed in claim **7** wherein said annular body is of essentially V-shaped cross section and has a peripheral wall surface lying at substantially right angles with respect to the longitudinal axis of said socket-defining sleeve.

10. The terminal construction claimed in claim **7** wherein said annular body is of corrugated configuration in cross section, being characterized by a plurality of interconnected ridges and valleys, said body having a peripheral wall surface lying at substantially right angles to the longitudinal axis of said socket-defining sleeve.

11. The terminal construction claimed in claim **7** wherein said cap members are formed from a plastic material, and wherein said sealing member is formed from an elastomeric material.

12. The terminal construction claimed in claim **11** wherein said cap members are formed from diallyl phthalate, and wherein said sealing member is formed from synthetic rubber.