

## CONNECTOR HAVING A CONSTANT CONTACT POST

### CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is related to U.S. Patent Application S/N: \_\_\_\_\_, Attorney Docket No. PPC.6702-NY, filed on \_\_\_\_\_ entitled “Connector Having a Constant Contact Nut,” the contents of which are incorporated in its entirety.

### FIELD OF THE INVENTION

[0002] The present invention relates to connectors used in coaxial cable communication applications, and more specifically to embodiments of a coaxial cable connector having a constant contact post that extends electrical continuity through the connector.

### BACKGROUND OF THE INVENTION

[0003] Broadband communications have become an increasingly prevalent form of electromagnetic information exchange and coaxial cables are common conduits for transmission of broadband communications. Coaxial cables are typically designed so that an electromagnetic field carrying communications signals exists only in the space between inner and outer coaxial conductors of the cables. This allows coaxial cable runs to be installed next to metal objects without the power losses that occur in other transmission lines, and provides protection of the communications signals from external electromagnetic interference. Connectors for coaxial cables are typically connected onto complementary interface ports to electrically integrate coaxial cables to various electronic devices and cable communication equipment. Connection is often made through rotating

an internally threaded nut of the connector about a corresponding externally threaded interface port. Fully tightening the threaded connection of the coaxial cable connector to the interface port helps to ensure a ground connection between the connector and the corresponding interface port. However, connectors are often times not properly tightened or otherwise installed. Moreover, the structure of common connectors may permit loss of ground and discontinuity of the electromagnetic shielding that is intended to be extended from the cable, through the connector, and to the corresponding coaxial cable interface port.

[0004] Hence, a need exists for an improved connector having a constant contact post for ensuring ground continuity through the connector, and establishing and maintaining electrical and physical communication between the post and a port coupling element.

#### SUMMARY OF THE INVENTION

[0005] A first general aspect of the invention provides a connector comprising a connector body attached to a post, the post including a first end, a second end, and a flange proximate the second end, a port coupling element attached to the post, wherein the port coupling element is rotatable about the post, and a plurality of openings on the post, the plurality of openings extending a distance toward the first end from the flange.

[0006] A second general aspect of the invention provides a coaxial cable connector comprising a connector body attached to a post, the post having a first end and an opposing second end, a port coupling element rotatable about the post, wherein the port coupling element has an inner surface, and a plurality of engagement fingers

proximate the second end, wherein the plurality of engagement fingers are biased into a position of interference with the inner surface of the port coupling element.

[0007] A third general aspect of the invention provides a connector comprising a connector body attached to a post, the post having a first end, an opposing second end, and a slotted flange, the slotted flange being resilient in a radial direction, and a port coupling element attached to the post, wherein a positioning of the port coupling element radially compresses the slotted flange, further wherein the slotted flange exerts an opposing radial contact force against an inner wall of the port coupling element, wherein the opposing radial contact force establishes and maintains physical and electrical contact between the port coupling element and the post regardless of the axial position of the post and the port coupling element.

[0008] A fourth general aspect of the invention provides a method of maintaining ground continuity in a connector providing a connector body attached to a post, the post having a first end, an opposing second end, and a flange having a plurality of openings positioned thereon, and biasing the flange in a position of interference with a port coupling element, the port coupling element being attached to post.

[0009] A fifth general aspect of the invention provides a method of maintaining electrical continuity with a port comprising providing a connector body attached to a post, the post having a first end and an opposing second end, a port coupling element rotatable about the post, wherein the port coupling element has an internal surface, and a plurality of engagement fingers proximate the second end, the plurality of engagement fingers being resilient in a radial direction, and compressing the plurality of engagement fingers in a radially inward direction, wherein the compression of the plurality of

engagement fingers by a positioning of the port coupling element results in the plurality of engagement fingers exerting a radially outward force against the port coupling element, wherein the radially outward force against the port coupling element establishes and maintains physical and electrical continuity between the post and the port coupling element regardless of the relative axial position between the post and the port coupling element.

[0010] The foregoing and other features of construction and operation of the invention will be more readily understood and fully appreciated from the following detailed disclosure, taken in conjunction with accompanying drawings.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0011] Some of the embodiments of this invention will be described in detail, with reference to the following figures, wherein like designations denote like members, wherein:

FIG. 1 depicts an exploded perspective cut-away view of an embodiment of the elements of an embodiment of a coaxial cable connector, in accordance with the present invention;

FIG. 2 depicts a perspective view of an embodiment of a post, in accordance with the present invention; and

FIG. 3 depicts a perspective cut-away view of an embodiment of a connector, in accordance with the present invention.

#### DETAILED DESCRIPTION

[0012] Although certain embodiments of the present invention are shown and described in detail, it should be understood that various changes and modifications may be made without departing from the scope of the appended claims. The scope of the present invention will in no way be limited to the number of constituting components, the materials thereof, the shapes thereof, the relative arrangement thereof, etc., and are disclosed simply as an example of embodiments of the present invention.

[0013] As a preface to the detailed description, it should be noted that, as used in this specification and the appended claims, the singular forms “a”, “an” and “the” include plural referents, unless the context clearly dictates otherwise.

[0014] Referring to the drawings, FIG. 1 depicts one embodiment of a coaxial cable connector. The coaxial cable connector 100 may accept a prepared coaxial cable 10, and may be operably affixed to a coaxial cable 10 so that the cable 10 is securely attached to the connector 100. The coaxial cable 10 may include a protective outer jacket 12, a conductive grounding shield 14, a dielectric foil layer 15, an interior dielectric 16 and a center conductor 18. The coaxial cable 10 may be prepared as embodied in FIG. 1 by removing the protective outer jacket 12 and drawing back the conductive grounding shield 14 to expose a portion of the dielectric foil layer 15 surrounding the interior dielectric 16. Further preparation of the embodied coaxial cable 10 may include stripping the dielectric foil layer 15 and the dielectric 16 to expose a portion of the center conductor 18. The protective outer jacket 12 is intended to protect the various components of the coaxial cable 10 from damage which may result from exposure to dirt or moisture and from corrosion. Moreover, the protective outer jacket 12 may serve in some measure to secure the various components of the coaxial cable 10 in a contained

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