Abstract: An electrical connector assembly combination includes a receptacle with a plurality of electrical contacts, and a connector device with housing configured to accept and retain a terminal end of a flexible assembly comprising one or more flexible electrical conductors. The terminal end of the flexible assembly includes one or more electrical contacts. The connector device is capable of being reversibly coupled and interlocked with the receptacle such that each of the electrical contacts in the receptacle is electrically connected to a corresponding contact at the terminal end of the flexible assembly in a secure, removable and non-permanent manner.

Declarations under Rule 4.17:
— as to the identity of the inventor (Rule 4.17(ii))
— as to applicant’s entitlement to apply for and be granted a patent (Rule 4.17(a))
— as to the applicant’s entitlement to claim the priority of the earlier application (Rule 4.17(Hi))

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— with amended claims (Art. 19(1))
— with information concerning request for restoration of the right of priority in respect of one or more priority claims (Rules 26bis.3 and 48.2(b)(vii))

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1. An electrical assembly combination comprising:

   a receiver comprising a receiver housing, wherein said receiver housing
comprises a first end and a second end and a plurality of receiver housing electrical
contacts, wherein said first end of said receiver housing mechanically couples to a rigid
assembly with a plurality of rigid assembly electrical contacts such that each one of said
plurality of receiver housing electrical contacts is electrically coupled to a corresponding
one of said plurality of rigid assembly electrical contacts; and

   a connector comprising a connector housing with a connector interlocking cap
and a compression grommet inside said connector housing, wherein said connector
interlocking cap removably couples directly to said second end of said receiver housing
thereby forming an interlocking mechanism, wherein said connector housing securely
retains a terminal end of a flexible assembly with said compression grommet between
said terminal end and a top wall of said inside of said connector housing, wherein each
one of said plurality of receiver housing electrical contacts mates inside said receiver
housing by a solderless connection to a corresponding one of a plurality of flexible
assembly electrical contacts at said terminal end within an enclosure formed when said
connector with said flexible assembly is coupled to said receiver housing.

2. The electrical assembly combination of claim 1, wherein said receiver housing
comprises a receiver interlocking member at said second end.
3. The electrical assembly combination of claim 2, wherein said connector interlocking cap and said receiver interlocking member couple through a twist-to-lock mechanism.

4. The electrical assembly combination of claim 1, wherein said solderless connection comprises a pin-socket mating system.

5. The electrical assembly combination of claim 1, wherein said solderless connection comprises a spring probe system.

6. The electrical assembly combination of claim 1, wherein said solderless connection comprises a compressive contact system.

7. The electrical assembly combination of claim 1, wherein said connector further comprises a flexible assembly retention component that securely holds the flexible assembly terminal within the connector housing, wherein said flexible assembly retention component fits around a perimeter of said terminal end of said flexible assembly.

8. The electrical assembly combination of claim 1, wherein said connector further comprises a flexible device enclosure inside said connector interlocking cap for enclosing and sealing said terminal end of said flexible assembly inside said connector.

9. The electrical assembly combination of claim 1, wherein said receiver further comprises an insulator assembly to electrically isolate each one of said plurality of receiver housing electrical contacts from each other.
10. An electrical assembly combination comprising:

   a receiver comprising a receiver housing, wherein said receiver housing comprises a first end and a second end and a plurality of receiver housing electrical contacts, wherein said first end of said receiver housing mechanically couples to a rigid assembly with a plurality of rigid assembly electrical contacts such that each one of said plurality of receiver housing electrical contacts is electrically coupled to a corresponding one of said plurality of rigid assembly electrical contacts, wherein said receiver housing further comprises a receiver interlocking member at said second end; and

   a connector comprising a connector housing with a connector interlocking cap and a compression grommet inside said connector housing, wherein said connector interlocking cap removably couples directly to said receiver interlocking member thereby forming an interlocking mechanism, wherein said connector housing securely retains a terminal end of a flexible assembly such that said compression grommet is between said terminal end and a top wall of said inside of said connector housing, said terminal end comprising a plurality of flexible assembly electrical contacts, wherein each one of said plurality of receiver housing electrical contacts mates inside said receiver housing by a solderless connection to a corresponding one of a plurality of flexible assembly electrical contacts at said terminal end within an enclosure formed when said connector with said flexible assembly is coupled to said receiver housing.

11. The electrical assembly combination of claim 10, wherein said solderless connection is by compressive contact.
12. The electrical assembly combination of claim 10, wherein said connector further comprises a flexible assembly retention component that securely holds the flexible assembly terminal within the connector.

13. The electrical assembly combination of claim 10, wherein said connector further comprises a flexible device enclosure inside said connector interlocking cap for enclosing and sealing said terminal end of said flexible assembly inside said connector.

14. The electrical assembly combination of claim 10, wherein said receiver further comprises an insulator assembly to electrically isolate each one of said plurality of receiver housing electrical contacts from each other.

15. The electrical assembly combination of claim 10, wherein said connector interlocking cap and said receiver interlocking member couple through a twist-to-lock mechanism.

16. An electrical assembly connector comprising:
   a connector interlocking cap;
   a flexible device enclosure partially inside said connector interlocking cap; and
   a compression grommet inside said flexible device enclosure,
   wherein said connector interlocking cap directly couples to an interlocking member of a receiver to form a twist-to-lock mechanism thereby securing said flexible device enclosure within said connector interlocking cap and said receiver, wherein said compression grommet is between a terminal end of a flexible assembly located within said flexible device enclosure and a top wall of said inside of said flexible device.
enclosure, said terminal end comprising a plurality of flexible assembly electrical contacts, wherein each one of said plurality of flexible assembly electrical contacts mates within said receiver to a corresponding one of a plurality of receiver housing electrical contacts within said receiver by a solderless connection method selected from a group consisting of pin-socket mating system, spring probe system and compressive contact system when said connector with said flexible assembly is coupled to said receiver housing.

17. The electrical assembly connector of claim 16, wherein an opposing end to said receiver interlocking member mechanically couples to a rigid assembly with a plurality of rigid assembly electrical contacts such that each one of said plurality of rigid assembly electrical contacts is electrically coupled to a corresponding one of said plurality of receiver housing electrical contacts.

18. The electrical assembly connector of claim 16, wherein said connector further comprises a flexible assembly retention component to securely retain the flexible assembly terminal within the connector.

19. The electrical assembly connector of claim 16, wherein said connector further comprises a sealing grommet to protect said terminal end of said flexible assembly inside said connector.

20. The electrical assembly connector of claim 16, wherein said receiver further comprises an insulator assembly to electrically isolate one receiver housing electrical contact from another receiver housing electrical contact.