Candidate’s answer

Response to EPO

Dear Sir

In response to the Communication, a replacement set of claims is filed herewith.

1. Amendments and Basis

Claim 1 has been amended to incorporate claim 2, which was dependent on claim 1. Basis can be found in previous claim 2 and paragraph 7, lines 5 – 8.

Claim 1 has also been amended to incorporate subject matter based on the second part of previous claim 3, but amended for clarity to remove the method step wording.

Specifically, the amended wording recites “the stop is disposed between the straight tube and the hinge”.

This subject matter is clearly and unambiguously derivable from the second part of previous claim 3 and from paragraph 7, lines 2 to 5, as these state that when the cover is opened and the insulated cable is fed through the straight tube, the tube guides the cable towards the hinge until it abuts against the stop. The stop prevents the cable from reaching the hinge, so the stop is necessarily disposed between the straight tube and the hinge. This is also clear from figures 2 and 3.

The first feature of claim 3 (the pin contact protruding from the front wall of the body) can be removed without adding matter under Article 123(2) EPC as:

(1) Nowhere in the description is the pin protruding out of the front wall explained as essential;

(2) In light of the technical problem addressed by the present invention of precisely positioning a cable relative to the electrical contact element, the feature is not indispensable for the function of the invention, as the position of the pin contact does not affect this; and

(3) Removing the feature does not require any real modification of the other features to compensate, as the only change would be the location of the “passageway” (paragraph 6) in the front wall 4, which is a trivial modification.

Claim 2 has been deleted.

New claim 2 is based on the first feature of claim 3 referred to above. Although previous claim 3 did not depend on claim 2, now incorporated into claim 1, the described embodiment shows a pin contact 22 protruding from the front wall (paragraph 6) and where the cable electrical conductor is in electrical contact with the blades when the cover is in the closed position (paragraph 7).
Claim 4 has been renumbered as claim 3.

New claim 4 has basis in paragraph 7, lines 8 to 9.

New claim 5 is based on paragraph 7, lines 13 to 14.

2. Clarity and Unity

The subject matter of claim 3 (now incorporated into claim 1) has been amended as explained above, so the clarity objection to claims 3 and 4 has been overcome.

Claim 5 has been deleted, and new claim 4 is dependent on claim 1, so the unity objection has been overcome.

3. Novelty

Claim 1 is novel over D1 because D1 does not disclose the stop being disposed between the straight tube and the hinge.

Claim 1 is novel over D2 because D2 does not disclose a connector configured so that when the cover is in a closed position and the insulated cable is located in the straight tube the electrical conductor of the cable is in electrical contact with the blades.

Dependent claims are novel by virtue of dependency at least.

4. Inventive Step

4.1 Closest Prior Art

The purpose of the present invention is to provide an electrical connector whereby precise positioning of a cable relative to an electrical contact element is facilitated.

Similarly, D1 provides an electrical connector which allows precise positioning of an electrical cable relative to an electrical contact element, and in common with the present invention this is facilitated by providing a cover with a guide for guiding the insulated cable into a connected position (as described in paragraph 4 of D1 and shown in Figure 2, guide 130).

D2 does not provide such precise positioning, having only a “passageway 215… in a rear wall 208” (paragraph 2) which does not guide the cable in the same way.

Therefore, D1 will be taken to be the closest prior art.

4.2 Distinguishing Features

The difference between claim 1 and D1 is that according to claim 1 the stop is disposed between the straight tube and the hinge, whereas in D1 the straight tube is disposed between the stop and the hinge (paragraph 4, D1).
4.3 Technical Effect

The technical effect of the distinguishing features is that in order to insert an insulated cable into the electrical connector, the cover can be opened and the cable can be fed through the straight tube, which guides the cable towards the hinge until it abuts against the stop (see paragraph 7). The end of the cable does not need to be bent in order to insert the cable into the electrical connector, and therefore it is easier to insert the insulated cable.

4.4 Objective Technical Problem (OTP)

The OTP solved therefore is to provide an electrical connector which allows an insulated cable to be more easily inserted, without requiring the end of the cable to be bent.

4.5 What would the skilled person do?

Given the OTP and D1 as the closest prior art, the skilled person (SP) would have found no teaching or suggestion of the stop being disposed between the straight tube and the hinge.

Furthermore, the skilled person would not have modified D1 to swap the positions of the stop 134 and the straight tube 132 because in doing so the cable would have to be inserted from the opposite direction to that shown and described in paragraph 4 of D1.

In such a case, it would not be possible to close the electrical connector of D1 as the cable would sit between the cover 112 and the body 102.

If the connector of D1 cannot be closed, the electrical contact of the cable cannot make contact with the blades 124, so the functionality of the device is lost.

Furthermore, the SP would not have moved the hinge 114 of D1 from the rear wall 108 to the front wall 104, because it is specifically taught at paragraph 5 that protrusions 150 should be positioned close to the hinge 114 to enable maximum force to be exerted on the cable due to the lever effect. This effect would be lost if the hinge 114 was disposed in the front wall 104.
**D1 + D2**

D2 discloses an electrical connector where a hinge 214 is arranged along the front wall of the body (paragraph 3). This means that the stop 234 is disposed between the straight tube 232 and the hinge 214.

However, the SP would not move the hinge 114 of D1 to the front wall in this way for the reasons already given above.

The SP would not have considered using D2 to modify D1, because the straight tube 232 and stop 234 of D2 are used for a completely different purpose than in D1, as D2 teaches inserting a screwdriver into the straight tube 232 until it abuts the stop 234, in order to provide extra leverage when closing the cover 212 of D2 (paragraph 5).

Furthermore, the SP would have considered D2 to be incompatible with D1 because D1 teaches that the insulated cable should be inserted into the connector through an opening in the rear wall 108 and past the hinge 114, then through the straight tube 132 while the cover 112 is open. However, when inserting the cable through the passageway 215 of D2, it would be extremely difficult to then insert the cable into the straight tube of D2 when the cover 212 is open, and would not result in successful connection of the cable.

Dependent claims are inventive at least by virtue of their dependency.

It is submitted the application is in order for allowance. Oral proceedings are requested in the event that the examining division intends to refuse the application.

Yours faithfully

Glark Cable
Claims:

1. Electrical connector (1) for connecting to an insulated cable (C) having a sheath of insulating material and an electrical conductor, the electrical connector (1) comprising:
   a) a body (2) comprising a front wall (4), two side walls (6), a rear wall (8), and a bottom wall (10);
   b) a cover (12) for closing the body (2) when the cover (12) is in a closed position;
   c) a hinge (14) arranged along the front wall (4) of the body (2) and connecting the cover (12) to the body (2);
   d) an electrical contact element (20) having a pin contact (22) and blades (24) for cutting the sheath, the pin contact (22) protruding out of the body (2) and the blades (24) being disposed in the body (2);
   e) wherein the cover (12) comprises a guide (30) for guiding the insulated cable (C), the guide (30) having a straight tube (32) and a stop (34), the straight tube (32) being orientated towards the hinge (14);
   f) wherein the connector is configured so that, when the cover (12) is in the closed position and the insulated cable (C) is located in the straight tube (32) and abuts against the stop (34), the electrical conductor of the insulated cable (C) is in electrical contact with the blades (24);
   g) characterised in that the stop (34) is disposed between the straight tube (32) and the hinge (14).

2.3. Electrical connector (1) according to claim 1, wherein the pin contact (22) protrudes out of the front wall (4) of the body (2).

3.4. Electrical connector (1) according to claim 3, wherein an opening of the straight tube (32) is funnel-shaped.

4. Electrical connector (1) according to claim 1, wherein the stop (34) has a blind hole (36) which can receive the insulated cable (C).

5. Electrical connector (1) according to claim 1, further comprising a locking means, for locking the cover in closed position.
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Examination Committee I agrees on 89 marks and proposes the grade PASS