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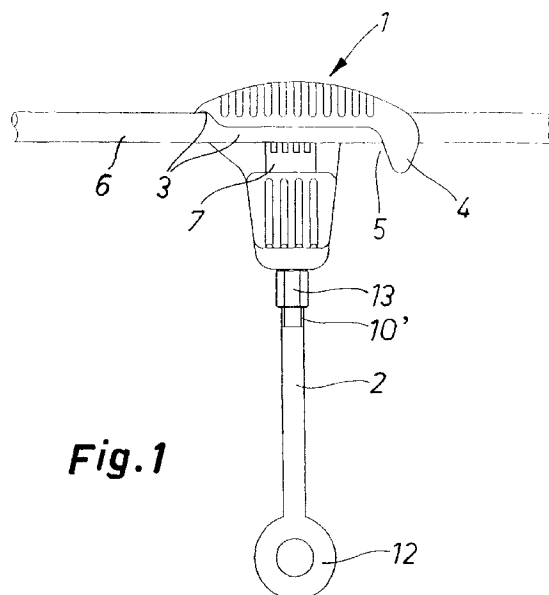
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00180 Helsinki (FI)(54) **Terminal suitable for live or dead working, especially terminal for an arching protection device or an overload cut-out**

(57) The invention relates to a terminal or connector for an arching protection device or an overload cut-out or a branching, comprising a body (1), an open-sided slot (3) in the body for receiving a cable (6), a threaded (10) prong-like member (2), and a clamp element (7) which grips the prong-like member (2) and is movable into the slot (3) by turning the prong-like member or by means of a spring for clamping the cable (6) within the slot and for establishing a contact between the cable (6) to be protected and the prong-like member (2). Along the top side of the slot (3) opposite to the clamp element (7), the body (1) extends to provide a claw (4), partially

defining the open side of the slot (3) and spaced from the clamp element (7) by a distance lengthwise of the slot (3), said claw (4) defining an open-bottom catch slot or catch hook (5) for receiving the cable (6) in a direction transverse to the receiving slot (3), from which the cable is brought into the receiving slot (3) by turning the body (1). When the cable (6) is in place in the receiving slot (3), said claw (4) takes up the tightening torque upon clamping the terminal or connector on the cable. The terminal or connector is applicable for installation from the ground by means of a long shaft suitable for live or dead working.

**Fig.1****EP 0 871 250 A2**

Description

The present invention relates to a terminal or connector suitable for live or dead working, especially a terminal for an arching protection device or an overload cut-out, comprising a body, an open-sided slot in the body for receiving a cable to be protected or branched, a threaded or spring-equipped prong-like member, and a clamp element which grips the prong-like member and is movable into the slot by turning the prong-like member for clamping the cable within the slot and for establishing a contact between the cable and the prong-like member.

This type of terminals or connectors are used with medium-voltage cables, both on open wires and coated overhead cables, for the attachment of arching protection horns or overload cut-outs to a wire or as a branch terminal. It is prior known (e.g. EP-170545) to use a claw extending from the top edge of the receiving slot alongside the terminal for an easier mounting of the terminal on a wire also by means of a long rod intended for live working. In the prior known terminals, however, the design of a terminal and the position of a claw do not facilitate working from a distance in the best possible manner for bringing the terminal first to easily grab a cable and then for bringing the cable accurately into the receiving slot as well as for keeping it in the slot while clamping the terminal.

An object of the invention is to provide an improved terminal or connector, having its body portion designed and its adjoining catch claw positioned to enable live or dead working in such a manner that a cable is more easily brought into the engagement with the terminal or connector and that the cable assumes automatically a correct position in the receiving slot upon tightening or clamping the terminal or connector.

This object of the invention is achieved on the basis of the characterizing features set forth in the appended claim 1. The non-independent claims disclose preferred embodiments for the invention.

The invention will now be described in more detail with reference made to the accompanying drawings, in which

figs. 1 and 2 illustrate a terminal or connector according to a first embodiment of the invention in an anterior and a posterior view, respectively, and fig. 3 shows a terminal or connector according to a second embodiment of the invention in a view parallel to a cable.

Referring to figs. 1 and 2, the terminal or connector comprises an arching protection connector having an extending prong-like member 2 which may function as an arching protection horn or which can be replaced with an arching protection horn. The prong-like member 2 has its bottom end provided with a loop 12 which can be grabbed with a long rod, whereby the terminal can be lifted up and attached to a cable which may be either

live or dead.

The terminal or connector includes a body 1, having a generally trough-like shape for defining an open-sided receiving slot 3 for accommodating a cable 6. A clamp element 7 engages the prong-like member 2 which can be turned for moving the clamp element 7 into the slot 3 for clamping the cable 6 within the slot 3 and for establishing a contact between the cable 6 and the prong-like member 2. As an alternative to the threading, it is possible to use a spring mechanism.

In the case of fig. 3, the prong-like member 2 has its top end provided with a threading 10 in mesh with an internal threading in the cavity of the clamp element 7, and the prong-like member 2 includes a cut-out 11 engaged by a lock ring serving as a bearing, the prong-like member 2 being able to rotate relative to the body 1, yet being immobilized in the axial direction. An alternative embodiment is depicted in figs. 1 and 2, wherein the prong-like member 2 has a threading 10' in mesh with a nut 13 adjoining the body 1. In this case, the top end (not shown) of the prong-like member 2 is attached to the clamp element 7 in a rotatable, yet axially immobilized manner.

According to a third alternative, the solution shown in figs. 1 and 2 is consistent with fig. 3 in terms of the bearing system 11 and the threading 10 in mesh with the clamp element 7, whereby the function of the threading 10' and the nut 13 is to achieve a locking of the prong-like member 2 or to provide a possibility of replacing the same.

Along the top side of the slot 3, the body 1 is designed to be elongated in the direction parallel to the slot 3 for supporting a cable over a longer distance. Along the top side of the slot 3, the body 1 is extended so as to curve as a catch claw 4, partially defining an open side of the slot 3 and spaced from the clamp element 7 by a distance lengthwise to the slot 3. Thus, the catch claw 4 defines an open-bottom catch slot or catch hook 5, capable of receiving a cable in a direction transverse to the slot 3, as shown with a dash-dot line in fig. 2. From this catch position the cable assumes automatically a correct position in the slot 3 upon commencing the rotation of the prong-like member 2 in the clamp tightening direction. Thus, the body 1 is turning on top of the cable 6 until the receiving slot 3 becomes aligned with the cable 6 and the terminal drops down onto the cable to the position shown in fig. 3. In addition to the fact that the catch claw 4 defines the open-bottom catch slot or hook 5, said claw 4 also functions as a torque recipient upon clamping the terminal on a cable.

In the case of fig. 3, the prong-like member 2 is provided with an overload cut-out 9. In addition to the above-described applications, the invention can be applied to all types of live working terminals, i.e. also for designing branch connections.

Claims

(2) is replaceable, whereby the same body (1)) is useful for a variety of applications.

1. A terminal or connector suitable for live or dead working, especially a terminal for an arching protection device or an overload cut-out, comprising a body (1), an open-sided slot (3) in the body for receiving a cable (6) to be protected or branched, a threaded (10) or spring-equipped prong-like member (2), and a clamp element (7) which grips the prong-like member (2) and is movable into the slot (3) by turning the prong-like member for clamping the cable (6) within the slot and for establishing a contact between the cable (6) and the prong-like member (2), **characterized** in that, along the top side of the slot (3) opposite to the clamp element (7), the body (1) extends to provide a claw (4), partially defining the open side of the slot (3) and spaced from the clamp element (7) by a distance lengthwise of the slot (3), said claw (4) defining an open-bottom catch slot or catch hook (5) for receiving the cable (6) in a direction transverse to the receiving slot (3), from which the cable is brought into the receiving slot (3) by turning the body (1), and that, when the cable (6) is in place in the receiving slot (3), said claw (4) takes up the tightening torque upon clamping the terminal on a cable.

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2. A terminal or connector as set forth in claim 1, **characterized** in that the clamp element (7) is provided with teeth (8) capable of piercing a cable insulation.

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3. A terminal or connector as set forth in claim 1 or 2, **characterized** in that the prong-like member (2) comprises an arching protection horn.

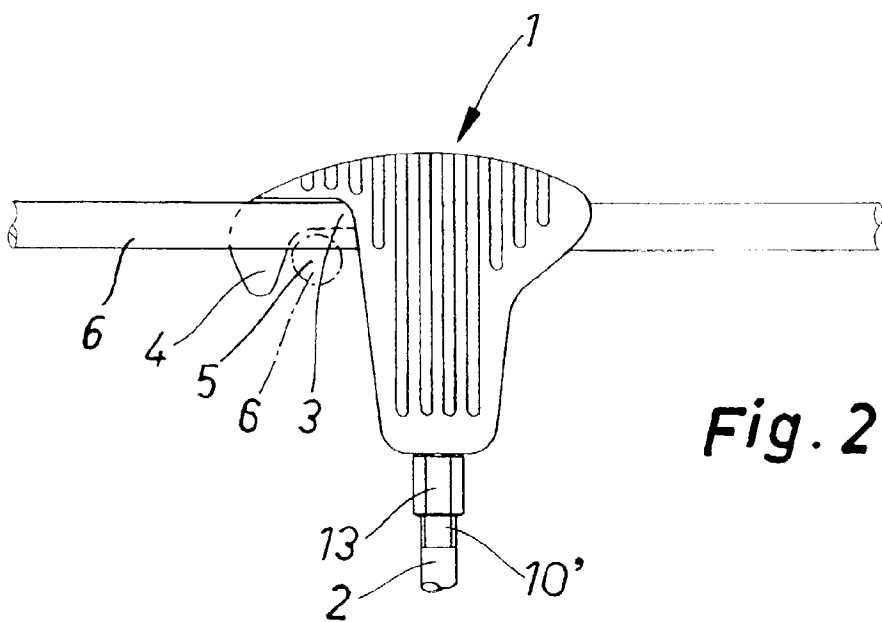
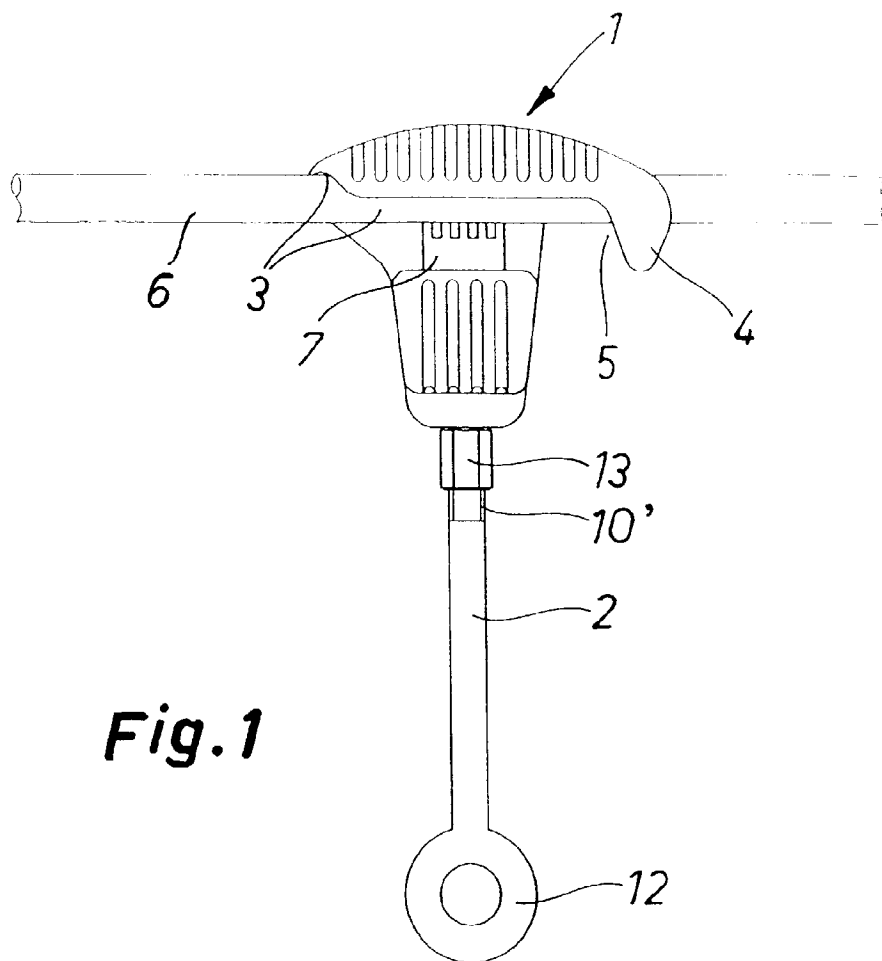
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4. A terminal or connector as set forth in claim 1 or 2, **characterized** in that the prong-like member (2) is provided with an overload cut-out (9).

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5. A terminal or connector as set forth in any of claims 1-3, **characterized** in that the prong-like member (2) has its bottom end provided with a loop (12).

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6. A terminal or connector as set forth in any of claims 1-5, **characterized** in that the prong-like member (2) is journaled (11) to the body (1) to be rotatable around its axis, yet to be immobilized in the axial direction.

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7. A terminal or connector as set forth in any of claims 1-5, **characterized** in that the prong-like member (2) uses its threading (10) to mesh with a nut (13) adjoining the body (1)) and is attached to the clamp element (7) rotatably or with a spring, yet in an axially immobilized manner.

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8. A terminal or connector as set forth in any of claims 1-7, **characterized** in that the prong-like member



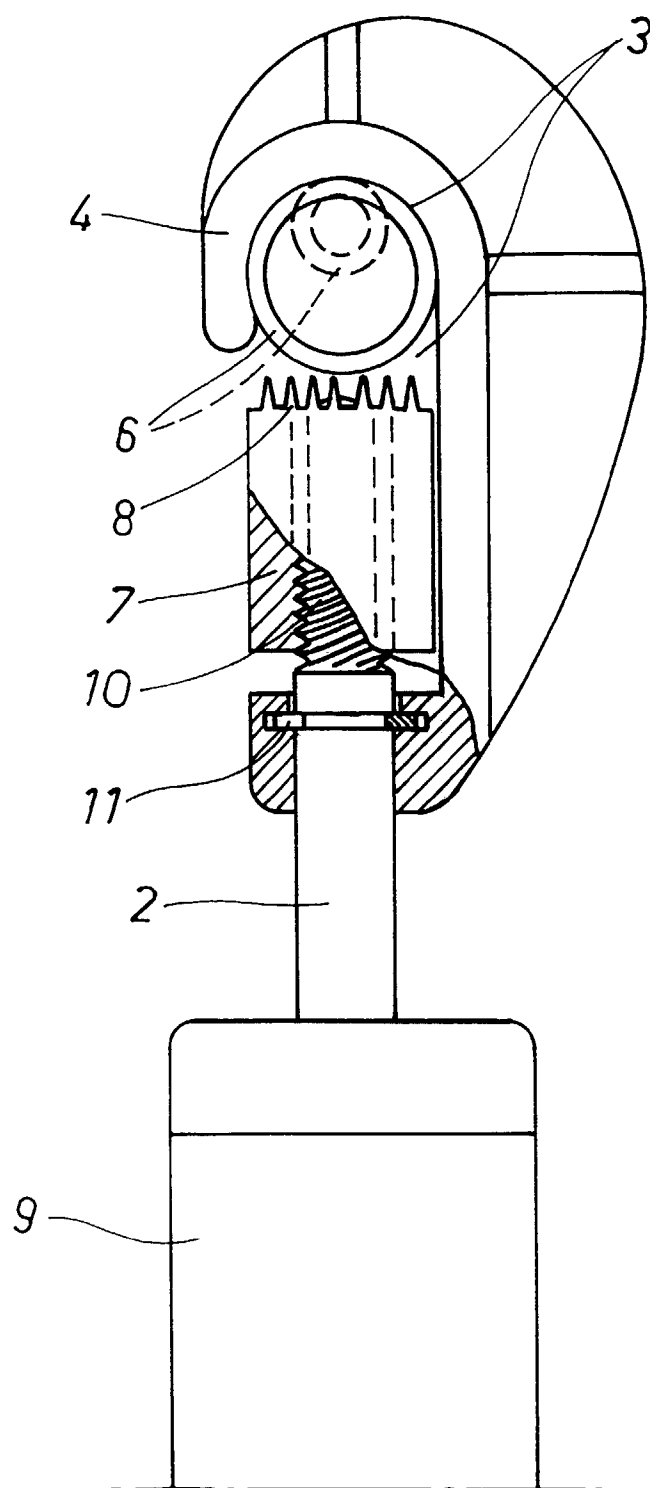


Fig. 3