

12

EUROPEAN PATENT APPLICATION

21 Application number: 84201668.5

51 Int. Cl.⁴: **H 01 R 9/03**

22 Date of filing: 19.11.84

30 Priority: 18.11.83 NL 8303986

43 Date of publication of application:
29.05.85 Bulletin 85/22

84 Designated Contracting States:
BE DE GB NL

71 Applicant: IJzergieterij Lovink B.V.
Lovinkweg, 3 P.O. Box no. 2
NL-7060 AA Terborg(NL)

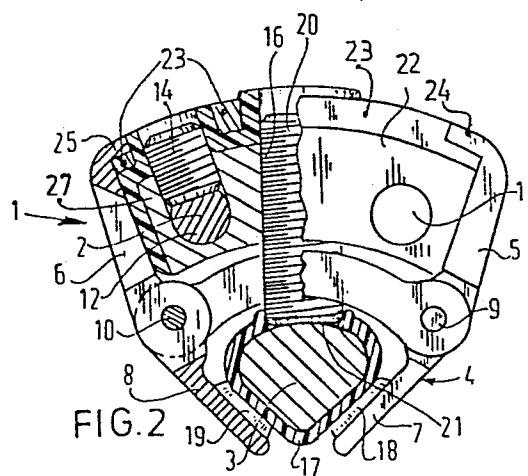
72 Inventor: Slooter, Arie Cornelis
No. 98, Industrierweg
NL-7061 AV Terborg(NL)

72 Inventor: van den Hout, Jan Simon
No. 3, Eksterhof
NL-7051 WP Varsseveld(NL)

74 Representative: Hoijtink, Reinoud et al,
OCTROOIBUREAU ARNOLD & SIEDSMA 1,
Sweelinckplein
NL-2517 GK Den Haag(NL)

54 Cable tapping clamb.

57 A branch clip for connecting a conductor to an electric main conductor having a body and two clamping jaws being rotatable about parallel axes and at least one clip member for connecting the branch conductor and a tapped hole holding a branch bolt directed to the main conductor, and a connecting block being coupled with tail pieces of said jaws during sighting the branch bolt such that the clamping jaws are clamped against the main conductor.



-1-

Cable branch clip.

The invention relates to the domain of the connection of at least one electric branch line with an electric main line, for example, a cable core.

For making branches there are known the circlip
5 capable of simultaneously branching three or more conductors and the separate branch clip.

The circlip has the following drawbacks: the cable insulation of all conductors is removed and/or damages in the same zone. This gives rise to very short creepage ways
10 for moisture, for example, of the order of a few millimeters, so that a high-quality insulator to be applied in the liquid state is required to repair these damages. If cable insulating material such as PE, XLPE or PTFE is used, no liquid insulating material is available capable of definitely repairing
15 cable damage. Moreover, the circlip causes a relatively large thickening at one place on the cable, so that relatively voluminous sleeves are required. With some types of circlips it is, moreover, not possible to determine which connection is first established. A further disadvantage is that some

circlips are suitable only for one cable diameter. Furthermore, circlips require the removal of the so-called filling wire from the cable, special precautions for the test cores and strong bending of the cores at the location of the circlip. It is finally noted that circlips frequently have cavities into which the liquid insulating material cannot penetrate.

Separate branch clips usually do not exhibit said disadvantages. In particular creepage paths can be simply prolonged in a manner such that moisture does no longer adversely affect the reliability of the joint. Sleeves may be more slender and filling wires and auxiliary cores do not play any particular part.

A disadvantage of the known branch clip is that an usually U-shaped bracket has to be arranged between the cores of an usually multicore main cable in order to ensure sufficient strength and resilience. Additional space is required for fastening such a bracket. Therefore, the known branch clips are usually provided with additional spring elements. In both designs the branch clip is relatively large. The application of such a branch clip is, if possible, even more troublesome than that of a circlip.

The invention has for its object to obviate the disadvantages of the known branch clips and provides to this end a branch clip of the aforesaid kind which is characterized by a clip body having two clamping jaws each having a tail piece and at least one bridge piece interconnecting said clamping jaws at the transition between the clamping jaws and their tail pieces so as to be rotatable about parallel axes and by a connecting block that can be disposed between the tail pieces and that has at least one clamping member for connecting the branch conductor and at least one tapped hole with a branch bolt directable to the main conductor, said connecting block arranged in place between the tail pieces being coupled with the tail pieces during tightening of the branch bolt in a manner such that the clamping jaws are clamped against the main conductor.

For the electric insulation a layer of insulating material can be interposed between the connecting block and

the clamping body.

A very advantageous variant exhibits the particularity that after the disposition of the connecting block between the tail pieces of the clamping jaws said tail pieces of the
5 clamping jaws are inclined away from and towards one another respectively, viewed away from the rotary axes, and that at their free ends the tail pieces have end parts bent over across the connecting block.

In order to ensure the best possible coupling between
10 the main conductor and the branch conductor even under varying conditions, for example, of heat and cold, it is preferred to use a variant in which the or each bridge piece is made from spring material.

The invention will now be described more fully with
15 reference to a drawing of an arbitrary embodiment.

The drawing shows in

fig.1 a perspective view of a branch clip embodying the invention, the parts being shown at some distance from one another for the sake of clarity,

20 fig.2 is a cross-sectional view of a mounted branch clip, and

fig.3 an elevational view like fig.1 of a variant.

The branch clip 1 serves to connect two electric branch conductors, one of which is designated by reference
25 numerals 2, to an electric main conductor, in this embodiment a cable core 3.

The branch clip 1 comprises a clip body 4 provided with two clamping jaws 7,8 each having a tail piece 5 and 6 respectively and a resilient bridge piece 26,11 interconnecting
30 said clamping jaws at the transition between the clamping jaws 7,8 and their tail pieces 5,6 respectively so as to be rotatable about relatively parallel axes 9,10. The branch clip 1 furthermore comprises a connecting block 27 which can be disposed between the tail pieces 5,6 and which has two
35 bores 12,13 receiving screws 14,15 for connecting the branch conductors (Fig.2 shows the branch conductor 2) and which has a tapped hole 16 being directed at right angles to the cable core 3 and having a branch bolt 20, said connecting block 27,

after having been arranged in place between the tail pieces 5,6, being coupled with the tail pieces 5,6 during tightening the branch bolt 20 in a manner such that the clamping jaws 7,8 are clamped against the cable core 3.

5 In the present embodiment the cable core 3 has a sector-shaped design and is provided with an insulating sheath 17. The shape of the clamping jaws 7,8 matches the shape of the core 3 as is shown in fig.2 The active surface of the clamping jaws 7,8 facing the cable core 3 is provided, in this
10 embodiment, with a profile of ridges 18,19 in order to ensure a satisfactory frictional contact.

 When the branch bolt 20 is being tightened, the active end 21 of said bolt 20 penetrates the insulating sheath 17 of the cable 3 so that it is locally completely destroyed so
15 that the bolt gets into an electrically conducting contact with the electrically conducting cable core 3.

 Between the connecting block 27 and the clip body 4 is arranged a layer of insulating material designed in the form of a cap 22 of insulating material.

20 Above said cap 22 is arranged a cover plate 23.

 At their free ends the tail pieces 5,6 have end parts 24 and 25 respectively bent over across the connecting block 27.

 Fig.3 shows a variant in which the clamping jaws 7' and 8' are provided at their free peripheral edges with
25 bent-over rims 28 and 29 respectively that can be hooked around the cable core 3. These rims 28 and 29 are relatively off-set and fit in this embodiment in recesses 30,31 in the clamping jaws 7' and 8' respectively.

30

-1-

CLAIMS

1. A branch clip for connecting at least one electrical branch conductor to an electric main conductor, for example, a cable core characterized by a clip body provided with two clamping jaws each having a tail piece and
5 at least one bridge piece interconnecting said clamping jaws at the transition between the clamping jaws and the tail pieces so as to be rotatable about relatively parallel axes and by a connecting block which can be disposed between the tail pieces and which has at least one clip member for
10 connecting the branch conductor and at least one tapped hole holding a branch bolt that can be directed at right angles to the main conductor, said connecting block, when arranged at its place between the tail pieces, being coupled with the tail pieces during tightening the branch bolt in a manner such that
15 the clamping jaws are clamped against the main conductor.

2. A branch clip as claimed in claim 1 characterized in that a layer of insulating material is disposed between the connecting block and the clip body.

3. A branch clip as claimed in claim 1 or 2
characterized in that after the connecting block is arranged
between the tail pieces of the clamping jaws, the tail pieces
and the clamping jaws are inclined away from and towards one
5 another respectively, viewed away from the rotary axes, and
in that at their free ends the tail pieces have end parts
bent over across the connecting block.

4. A branch clip as claimed in anyone of the pre-
ceding claims characterized in that the bridge piece is
10 resilient.

5. A Branch clip as claimed in anyone of the
preceding claims characterized in that at their free peripheral
edges the clamping jaws are provided with bent-over rims which
can be hooked around the main conductor and which are
15 relatively off-set.

FIG. 1

"1/1"

FIG. 3

