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DESCRIPTION DE2334429A1

[0001]

¹³ Applicant: Feiten & Guilleaurne Schaltanlagen GmbH 4150 Krefeld Am Neuerhof

[0002]

¹⁷ PIJOLö 5 Cologne-Mülheim, 2.

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[0003]

²² Longitudinally split sleeve for electric cables, in particular connecting or branching sleeves

[0004]

²⁶ The invention relates to a longitudinally divided cable sleeve, in particular a connecting or branching sleeve, on whose parts made of elastically deformable material corresponding latching elements are formed.

²⁹ Screws, clamps or locking loops were used to close previously known cable sleeves.

³⁰ It was - apart from the additional expense of manufacturing and assembling these locking elements - perceived as a further disadvantage that the risk of corrosion for these parts generally made of metal had to be accepted or eliminated by special anti-corrosion measures.

[0005]

³⁶ 409884/078

[0006]

⁴⁰ PI 4116 -2- 2.7.1973

[0007]

⁴⁴ This led to the development of a new type of longitudinally divided cable sleeves made of a durable, deformable material, which are provided with corresponding latching elements on their sleeve parts, which engage into one another (Gbm 7 228 250).

⁴⁷ The new sleeve design has proven to be very advantageous because of the simplified production and assembly, but cannot be used in all cases for sleeves that exceed certain dimensions because of the dimensional deviations that are unavoidable in the manufacture of these sleeves.

[0008]

⁵⁴ In another known longitudinally divided sleeve of this type, with two housing shells made of plastic that can be firmly connected at their flange-like ends via connecting elements, the disadvantage explained above was overcome in that the connecting elements each consist of a groove and a clamp that can be inserted into this, each of which is a one-piece component one of the housing half-shells (Gbm 7 215 331), each clamp preferably consisting of two elastic, hook-shaped, V-shaped clamping webs arranged relative to one another and each groove having an opening which first tapers conically inwards and then widens conically again.

⁶¹ While this known sleeve design has proven its worth and can be used with sleeves of any size without difficulty, it has the disadvantage of being relatively expensive to manufacture, which results from the jagged shape of the connecting elements used and the resulting requirement for complicated, multi-part tools to their production.

[0009]

⁶⁸ The aim of the invention is to create a cable sleeve of this type, which can be produced cost-effectively in any size, with simple assembly despite simplified production with the possibility of opening the sleeve as often as desired and closing it again tightly and a tight closure of the sleeve are guaranteed with certainty.

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[0010]

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[0011]

[0012]

⁸⁴ This problem is solved with a sleeve of the type outlined at the outset, in which, according to the invention, at least a number of the latching elements of one of the sleeve parts are arranged as approaches near the edge of this sleeve part that delimits the parting line, each with one recess and one on the inside of the outer wall of the same formed Hinterschnei formation, and the corresponding latching elements of the other sleeve part are designed as projections which can be inserted into the recess of the approach in question and have an outwardly protruding bend.

[0013]

⁹⁴ The advantage of the cable sleeve construction according to the invention is that each sleeve part can be produced in a cost-saving way with two-part molds, whereby it is not difficult to produce sleeve parts of any size provided with the locking elements according to the invention and to mount them in such a way, despite the unavoidable dimensional accuracy, that the tight Combination of the two housing parts is guaranteed with certainty.

⁹⁹ The cable sleeve according to the invention can be used for connecting and/or branching off both telecommunications cables and power cables.

[0014]

¹⁰⁴ In one embodiment of the cable sleeve according to the invention, the projections having the recess are offset sections of the reinforced edge of the relevant sleeve part, and the projections of the associated sleeve part that can be inserted into these recesses are designed as offset projecting tabs, the bend of which extends over a substantial part of the depth of each recess and substantially fills the interior thereof, the undercut of each recess being formed as a window penetrating the outer wall thereof.

¹¹⁰ As a result of this configuration, the relevant edge sections of one sleeve part can be inserted or fixed in those of the other sleeve part in such a way that dimensional deviations of up to a few millimeters along these edges no longer play a role.

[0015]

¹¹⁶ 409884/0784

[0016]

¹²⁰ PI 4116 -4- 2.7.1975

[0017]

¹²⁴ This results in an inevitable direction of the respective warped section of the edge of one or both of the sleeve parts associated with one another, namely in that the outer wall of the recess causing the latching extends through the inner wall lying against the projection of the other sleeve part and pressing it into the undercut the recess is held.

[0018]

¹³¹ Another embodiment of the cable sleeve according to the invention is characterized by a substantially parallel course of the inner wall directed obliquely inwards from the insertion opening and a section of the outer wall of the recess of each attachment that is in front of the undercut in the direction of insertion of the projections of the other sleeve part, and by a tongue-like formation of each of the projections associated with these approaches.

¹³⁶ This type of design of the locking element facilitates the assembly of the two sleeve parts to an increased extent and also has the advantage that parts of this type can be produced without side shifters.

[0019]

¹⁴² Furthermore, it is according to the invention that both flank surfaces and the outer surface of each tongue-like projection run essentially perpendicular to the outwardly reinforced edge of the socket part in question or to the parting line, with the outer surface of this projection being slightly curved in the area of the transition to the edge of the socket part and the inner surface in the transition area to the Plant - with assembled sleeve - is dimensioned at an outer edge of the other sleeve part.

¹⁴⁸ This embodiment of the cable sleeve, which further develops the features described above, allows the use of only slightly bendable castable or pressable materials, such as e.g.

¹⁵⁰ B. light metal, glass fiber reinforced polyester, polyurethane, impact-resistant PVC or the like.

[0020]

¹⁵⁴ When assembling the sleeve, the one with the advantages

[0021]

¹⁵⁸ 409884/0784

[0022]

¹⁶² PI 4116 -5- 2.7.1975

[0023]

¹⁶⁶ Jumps provided housing part itself subjected to the bending stress over the entire width of its curvature, and not or only to a small extent the same tongue-like projections.

¹⁶⁸ The recessed lugs are essentially not subjected to bending stress at all.

[0024]

¹⁷² The cable sleeve according to the invention is advantageously sealed by a groove which is open to the parting joint and is open on the reinforced edge of the relevant sleeve part within the transition area of the inner surface of all the projections, and a seal introduced therein, e.g.

¹⁷⁵ B. a plastically deformable sealant.

[0025]

¹⁷⁹ Further details and advantages of the invention result from the following explanations based on exemplary embodiments illustrated in the drawing.

[0026]

¹⁸⁴ In the drawing shows:

[0027]

¹⁸⁸ fig 1 a cable sleeve according to the invention with latching elements;

[0028]

¹⁹² fig 2 shows a cross section through an embodiment of the latching elements in an enlarged representation;

[0029]

¹⁹⁷ fig 3 is a view of the locking elements according to Fig. 3>f

[0030]

²⁰¹ fig 4, also in cross section and in an enlarged representation, another embodiment of the latching elements according to the invention;

[0031]

206 pig 5 the locking elements according to Fig. '1- with sleeve parts separated from each other.

[0032]

210 In all drawing figures, sleeve parts having latching elements that correspond to one another are denoted by 1 and 2, respectively.

212 In the illustration shown, the sleeve part 1 is provided with latching elements in the form of projections 35 each having a recess 4 and the other sleeve part 2 is insertable into the recesses of the projections 5, with one outward

[0033]

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[0034]

222 protruding cranking 8 formed projections 7.

223 It goes without saying that mutually corresponding latching elements of one type or another can be formed in any combination on each of the two housing parts, provided that each recess 3 is assigned a projection 7 .

[0035]

229 In the embodiment of the cable closure according to the invention shown in Figs. 2 and 3, the lugs 3 of the closure part 1 are formed as offset sections of the reinforced edge, whereby they project beyond the parting line.

232 A window 14 is provided in the outer wall 5 bordering the recess 4 towards the outside, which at the same time forms an undercut 6 receiving the bend 8 of the associated projection 7 and facilitates the opening of the sleeve by means of a tool acting through the window on the bend.

235 In this embodiment, the bottom of each recess 3 is placed in the plane of the parting line and provided with a seal against which the end face of each of the projections 7 is pressed when the two sleeve parts are in the locked state , whose bend 8 extends over a substantial part of the depth of each recess 4.

239 The seal 17 is arranged in a groove 19 which, connecting the wall sections designed as shoulders, extends continuously over the entire length of the parting line.

[0036]

244 In the embodiment of the cable gland according to the invention shown in Figs. 4 and. 5, the recess 4 of each extension 3 has an essentially parallel extension of its inner wall 10 directed obliquely inwards from the insertion opening and a section of the outer wall upstream in the insertion direction of the projections 7 of the other socket part of the undercut 6.

²⁴⁸ The projections 7 of the other sleeve part associated with the recesses 3 designed in this way are designed like tongues in such a way that the two flank surfaces and the outer surface 11 of each of the projections 7

[0037]

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[0038]

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[0039]

²⁶² Pi 4ii6-7-" 2.7.1975

[0040]

²⁶⁶ ward reinforced edge 12 of the sleeve part 2 in question substantially perpendicular.

²⁶⁷ Only the latchable part of the bend 8 of each of these tongue-like projections 7 projects beyond its outer surface 11, so that when the two socket parts are joined together, the projections 7 only need to be swiveled in by the amount of this part of their bend 8.

²⁷⁰ The pivoting of the tongue-like projections of this embodiment results when the socket parts are joined together, as it were, by the oblique course of the inner wall 10 and the section 9 of the outer wall 5 of each attachment that is in front of the undercut 6 .

²⁷³ Opening this sleeve can be facilitated by a lever-like extension 18 of each projection 7.

²⁷⁴ The inventive design of the transition from the reinforced edge 12 of the sleeve part 2 in question to each of the tongue-like projections 7 and the support of the same on an outer edge 15 of the other sleeve part 1 specially provided for this purpose should be emphasized.

²⁷⁷ This results in the surprising effect that the deformation of the material does not occur or occurs only slightly in this relatively large transition area, but rather the sleeve part in question is bent—evenly distributed—over the entire width.

²⁸⁰ This therefore behaves when inserting the projections into the recesses in the same way as a bow when completing an arrow.

²⁸² Furthermore, when the elements (J>, 7) of the two sleeve parts (1, 2) are locked together, the outer edge 15 ensures their locking in the locked position and thus the firm connection of the two sleeve parts with great certainty.

²⁸⁵ The outer edge 15 then becomes the fulcrum of a lever with a long and short arm, with the elastic restoring force of the relevant sleeve part arc acting on the long arm pushing the projection 7 forming the short arm of this lever with its bend 8 into the H int he cut 6 of the approach J5 pushes in.

[0041]

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[0042]

296 FI 4116 -8- 2.7.1973

[0043]

300 The utilization of these "arc effects" is considered essential to the invention.

[0044]

304 In this embodiment, too, the seal 17 is arranged in a groove 16 which is cut out of the reinforced edge 12 of the sleeve part in question in such a way that - when the sleeve parts are joined together - it directly adjoins the outer edge 15 of the sleeve part 2 provided with the projections 5.

308 The end face of this sleeve part, which projects slightly over the width of this groove, is pressed firmly against the seal 17 when the projections 7 are latched in the undercuts 6 of the recesses.

[0045]

314 Due to the special course of the inner surfaces of the recesses 5 and the outer or

315 Faces of the projections 7 can both housing parts 1, 2 using relatively simple tools and therefore in a cost-saving manner to produce and easily put together, with a firm and tight closure of the sleeve housing is guaranteed with certainty.

[0046]

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