(12) UK Patent Application (19) GB (11) 2 201 302 (13) A

(43) Application published 24 Aug 1988

(21) Application No 8800794

(22) Date of filing 14 Jan 1988

(30) Priority data
(31) 8700773 (32) 17 Jan 1987 (33) DE

(71) Applicant
Rehau AG & Co

(Incorporated in FR Germany)

Postfach 1460, 8673 Rehau,
Federal Republic of Germany

(72) Inventor
Hartmut Schinzel

(74) Agent and/or Address for Service
Stevens Hewlett & Perkins
5 Quality Court, Chancery Lane, London, WC2A 1HZ

(51) INT CL⁴
H02G 3/06

(52) Domestic classification (Edition J):
H2C CD

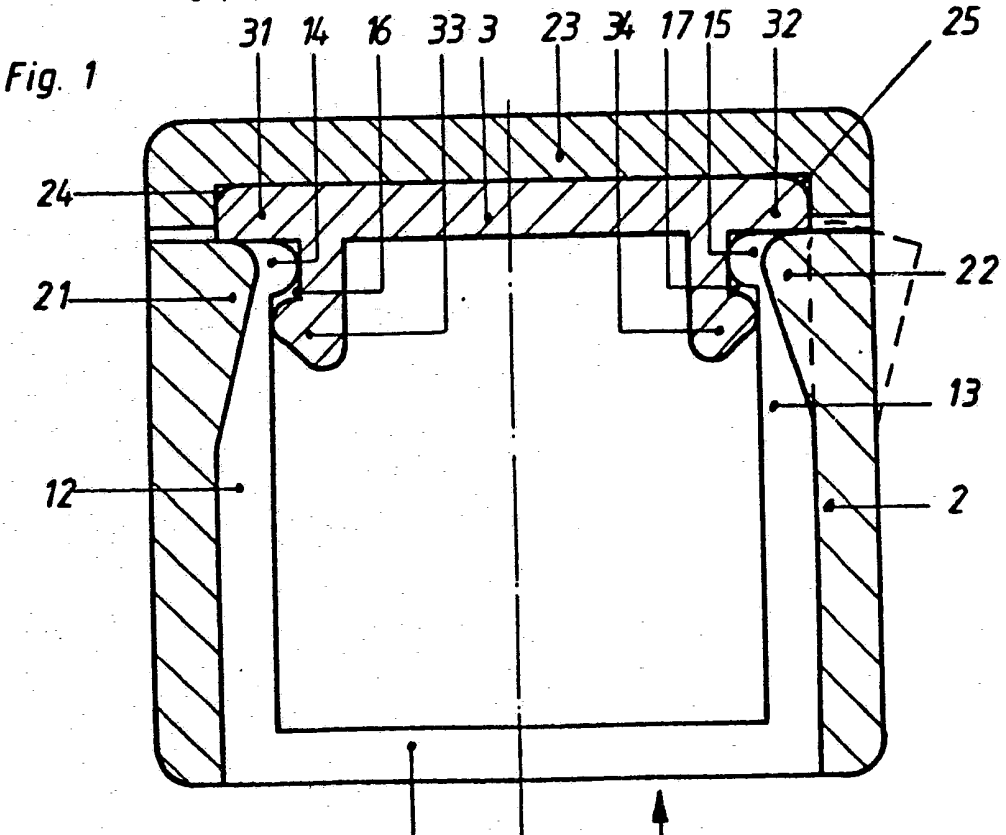
(56) Documents cited
None

(58) Field of search
H2C
Selected US specifications from IPC sub-class
H02G

(54) **Joining cable ducts**

(57) An electrical cable conduit system comprising a U-section duct 1 having a lid 3. The lid 3 has a flat top portion which is latched in place on top of the duct 1 by the engagement of projections 14, 15 at the upper ends of the duct walls 12, 13 with grooves 16, 17 formed by engaging hook portions 33, 34 extending downwardly from the underside of the top portion of lid 3. The system further comprises one or more components 2 for use at duct junctions. These components cover the duct in the area of the junction and have inwardly protruding lugs 21, 22 which engage behind edge portions 31, 32 of the top portion of the lid to thereby retain the lid and duct in place. The walls 12, 13 are cut away in the area of lugs 21, 22 to allow the lugs to latch behind the edge portions 31, 32.

Fig. 1



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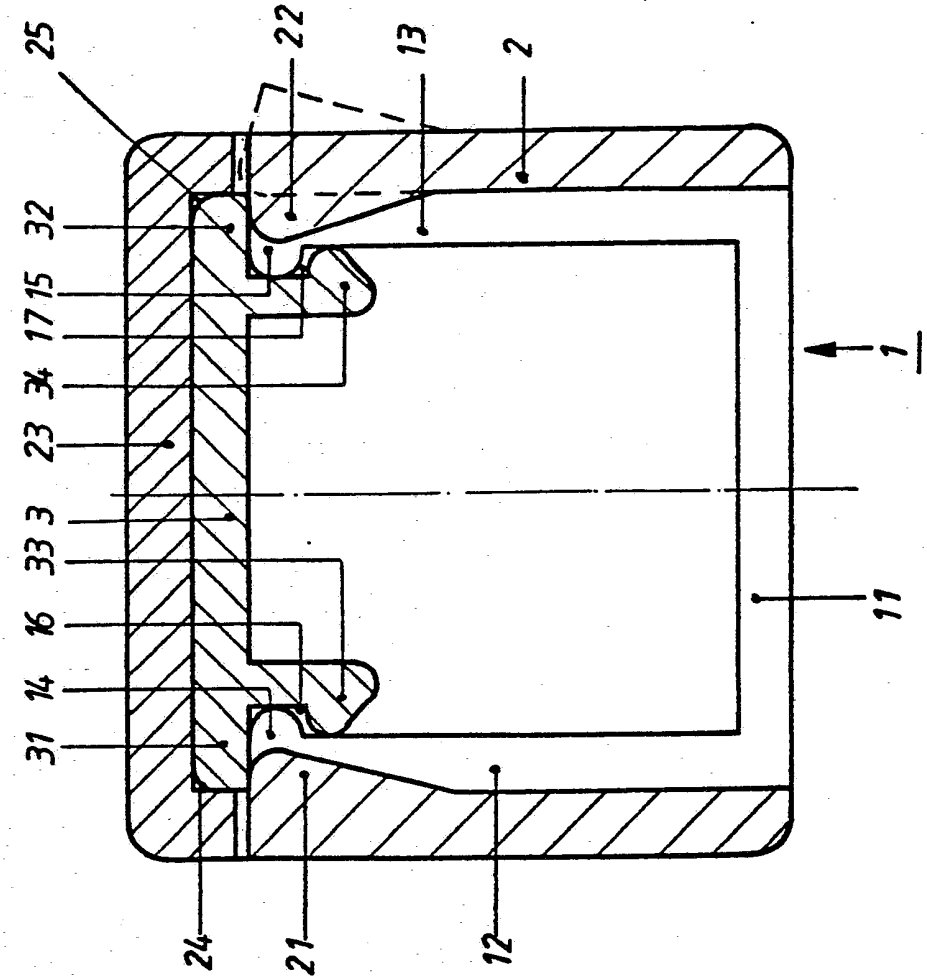

Fig. 1

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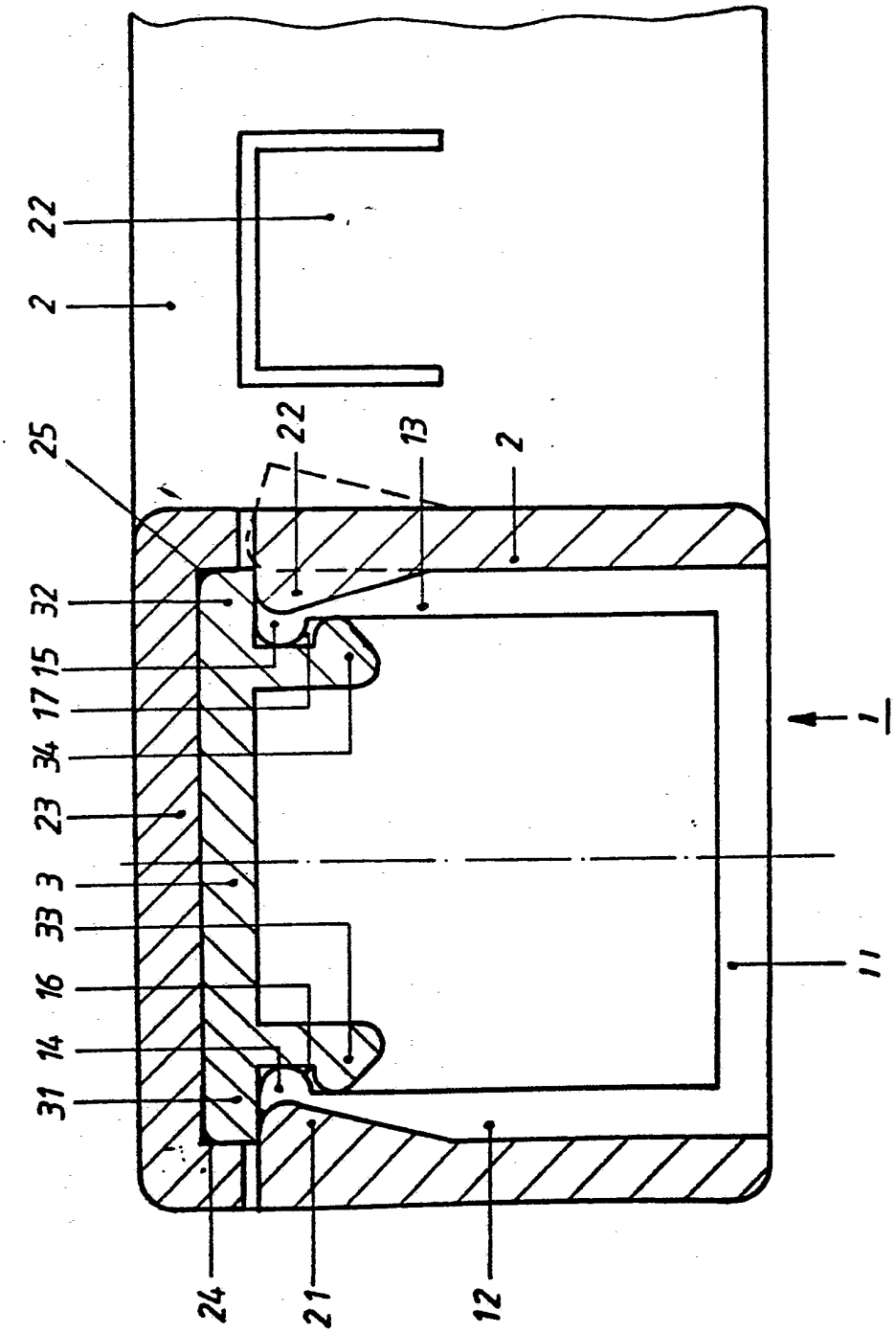

Fig. 2

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"ELECTRICAL CABLE CONDUIT SYSTEM"

The invention relates to an electrical cable conduit system of the type comprising a cable duct, having a U-shaped channel cross section and a lockable closing lid, which latter comprises, at its edge areas displaced slightly towards the middle of the lid, projections directed into the duct interior with locking lugs directed outwards at their free ends. In the outwardly open edge-side receiving grooves, which are formed in this way, there engage lockingly inwardly directed locking elevations formed at the free ends of the U-legs of the cable duct. The cable duct further comprises lockable, substantially U-shaped moulded components for turning, branching, cross-sectional covering and the like.

Cable ducts of this type are made, as a rule, of polymers, e.g. polyvinylchloride. They have, as a rule, a U-shaped cross section and comprise locking members on their free legs for locking the lid parts in place.

Such a cable duct with connection pieces is known from GB 1493410. Rectilinear connectors, angles and T-junctions are described therein as members connecting the individual cable duct parts. These connecting members have U-shaped cross sections and externally overlap the U-shaped legs of the cable ducts when in their connecting positions. The cable ducts have inwardly directed locking lugs at the free ends of their U-legs, which lugs, when in the connecting position, engage with the moulded parts in locking members which project upwardly from the bottom of the lid leg of the moulded parts. These locking members are arranged at a distance from the inner walls of the U-shaped legs of the moulded parts. This distance is the locking distance which is necessary for the locking

lugs at the free ends of the U-legs of the cable ducts to be able to enter locking engagement.

In order for the process of locking the moulded parts onto the cable ducts to be effected, it is necessary for the lids of the cable ducts to be shortened far enough for engagement of the locking members with each other to be possible. This trimming of the lid in the overlap areas of the moulded parts is disadvantageous, as the possibility of correspondingly wrong cuts cannot be excluded.

The present invention seeks to provide a possibility of connection of moulded parts to cable ducts in which trimming of the lid is unnecessary. According to the invention it is proposed that opposite inner wall areas of the moulded components be constructed throughout or partially as hook-shaped locking members, which have their area of greatest projection at the lid leg of the moulded component and form together with the lid leg longitudinally extending receiving grooves in which retainingly engage, on locking, the edge legs of the receiving grooves of the closing lid, cut free from the U-shaped legs of the cable duct in the locking area.

With the connecting system of the invention the shortening of the lid necessary in the known prior art is avoided. Instead of this shortening the U-legs of the cable duct are trimmed in the overlap area of the moulded component. This trimming frees the outwardly directed groove in the edge areas of the lid in the area of overlap by the moulded component and thereby makes it possible for the hook-shaped locking members constructed at the inner wall areas of the moulded components to grip from behind the edge legs of the receiving grooves in the covering lid. In this way unreleasable locking may be achieved, in that the hook-shaped locking members are so constructed that they

enter the receiving groove of the covering lid completely. A releasable connection can be obtained, on the other hand, by the hook-shaped locking members only gripping from behind edge areas of the legs of the receiving grooves of the covering lid, said legs being constructed as extensions of the covering lid.

It has proven advantageous for the hook-shaped locking members to be cut out of the legs of the moulded components by through-holes on three sides to increase locking flexibility.

In order that the invention may be better understood, an embodiment thereof will now be described by way of example only and with reference to the accompanying drawings in which:-

Figure 1 shows a section through a cable duct with lid and longitudinally running moulded component; and

Figure 2 shows a partial section through the cable duct with lid and angular moulded component.

Figure 1 shows a cable duct 1 of approximately U-shaped channel section and having legs 12, 13 rising from a base 11. At the free ends of the legs 12, 13 are formed inwardly directed locking projections 14, 15. These locking projections engage in grooves, which are formed at the free ends of the top portion of a lid 3 by means of edge legs 31, 32 and locking lugs 33, 34. Each locking lug 33, 34 comprises a projection extending at 90^{0} from the flat top portion of the lid into the duct interior, together with a locking lug directed outwardly at its free end to thereby define outwardly facing receiving grooves 16, 17. In this way the lid 3 rests on the cable duct 1 and locks to it longitudinally.

In the transition areas between adjacent lengths of duct, the duct is covered by a moulded component 2. In the areas where the duct is

overlapped by the moulded component 2 the legs 12, 13 are cut back sufficiently far that the lid 3 with the outwardly directed receiving grooves 16, 17 is free. This cutting back may, for example, be effected in such a way that the legs 12, 13 are only cut into at an angle in the upper area, such that the locking according to the invention of the moulded components can be effected. This locking is effected by pushing the moulded component 2 over the free-lying lid 3 from above in the areas of the cutting sites of the legs 12, 13. This pushing-on process is completed when hook-shaped locking members 21, 22 become latched over the edge legs 31, 32 of the lid 3 and thereby engage in the receiving grooves 24, 25 which are formed at the free ends of the lid 3 by means of the edge legs 31, 32 and the locking lugs 33, 34. From the drawing it may be seen that the hook-shaped locking members 21, 22 only grip the inner-lying edges of the edge legs 31, 32 slightly from below. The moulded component is therefore detachable.

The hook-shaped locking member 22 is indicated in the right-hand area of the drawing to be flexible. This flexibility is achieved in that, in the upper and in the two lateral areas of this locking member, notches are made in the leg wall of the moulded component 2, such that the locking member 22 is only connected to the leg of the moulded component 2 at its root. In this way, on overlapping of the moulded component and pressing into the groove 25 of the edge leg 32 of the lid 3 the locking member 22 is pushed backwards, as is shown in the drawing by the dotted lines. As the moulded component 2 is pushed into its end position, the lid leg 32 engages in the groove 25. In the final position the locking member 22, gripping the lid leg 32 from below, springs back into its starting position.

Figure 2 shows in its partial section through the cable duct 1 the lid 3 with an angular moulded component 2. Locking of the moulded component 2 at the cut site corresponds with that described for Figure 1. In the uncut area of the moulded component 2 there is shown a hook-shaped locking member 22, which has notches passing through the walls on three sides. This form of the locking member 22 makes locking of the moulded component 2 to the cable duct 1 easier.

CLAIMS

1. An electrical cable conduit system comprising a duct having a U-shaped channel cross section, a lockable closing lid, which lid comprises a flat top portion having, at its edge areas, and displaced slightly towards the middle of the lid, projections directed into the duct interior with locking lugs directed outwards at their free ends to thereby define outwardly-facing receiving grooves along the edge of the lid, and said channel being formed at the free ends of its legs with respective inwardly directed locking projections which are lockingly engageable in said receiving grooves, and one or more lockable, substantially U-shaped components for use at duct junctions, characterised in that opposite inner wall areas of the or each component are formed throughout or partially with hook-shaped locking members (21,22), each of which protrudes inwardly to define between itself and a top wall (23) of the component a longitudinally extending receiving groove (24,25) in which is retainingly engaged, upon assembly of the component onto the duct, the corresponding edge (31,32) of said flat top portion of the lid, the lugs (11,12) being cut away in the locking area to allow the locking members (21,22) to locate behind the lid edge (31,32) to latch same.

2. An electrical cable conduit system comprising a duct having a U-shaped channel cross section, a lockable closing lid, which lid comprises a flat top portion having, at its edge areas, and displaced slightly towards the middle of the lid, projections directed into the duct interior with locking lugs directed outwards at their free ends to thereby define outwardly-facing receiving grooves along the edge of the lid, and said channel being formed at the free ends of its legs with respective inwardly directed locking projections which are lockingly engageable in said

receiving grooves, and one or more lockable, substantially U-shaped components for use at duct junctions, characterised in that opposite inner wall areas of the or each component are formed throughout or partially with hook-shaped locking members (21,22), which have their area of greatest projection at the lid leg (23) of the moulded component (2) and form together with the lid leg (23) longitudinally extending receiving grooves (24,25), in which retainingly engage, on locking, the edge legs (31,32) of the receiving grooves of the closing lid (3), cut free from the U-shaped legs (11,12) of the cable duct (1) in the locking area.

3. A system according to either one of claims 1 or 2, characterised in that the hook-shaped locking members (21,22) are cut out of the legs of the moulded components (2) by through-holes on three sides to increase their flexibility.

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