



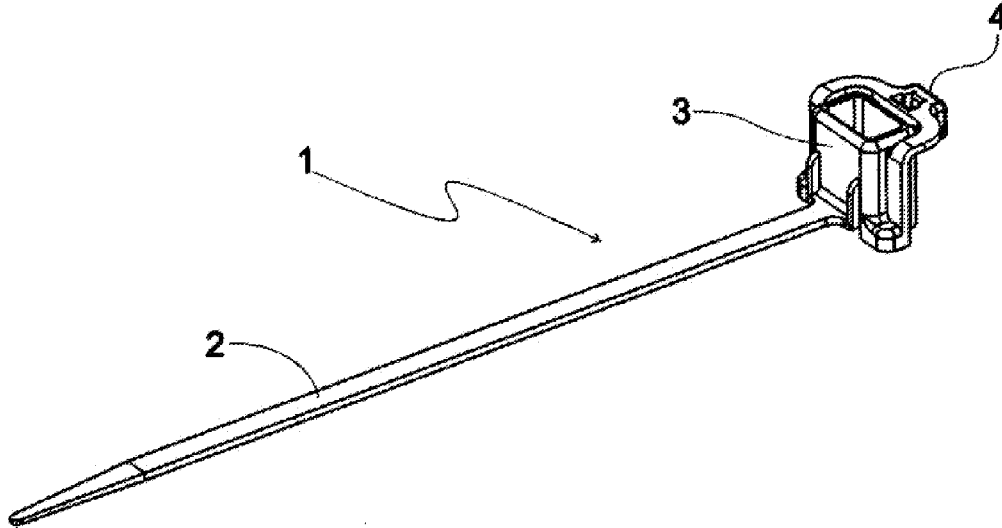
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OBLONG OBJECTS**(30) **Foreign Application Priority Data**

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B65D 63/10 (2006.01)(52) **U.S. Cl.** **24/16 PB; 24/662**(57) **ABSTRACT**(73) Assignee: **A.RAYMOND ET CIE, Grenoble**
(FR)(21) Appl. No.: **12/067,403**(22) PCT Filed: **Sep. 15, 2006**(86) PCT No.: **PCT/EP2006/008994**§ 371 (c)(1),
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A device for holding an elongated assemblage of articles comprises a fastening body (3) to effect fastening to a support part (21), a looping strap (2) that stands connected by one end to the fastening body (3), and a strap receiving part (4), which via at least one flexible connecting portion (14, 15) is arranged on one side of the fastening body (3) and connected to the fastening body (3). The looping strap (2) is directly connected to the fastening body (3) in a strap fastening region (6), and the strap receiving part (4) is on the opposite side of the fastening body (3) from the strap fastening region (6) when the or each connecting portion (14, 15) is in the relaxed state. In this way, the assemblage of articles can be positioned very tightly against the fastening body, and the inventive device is distinguished by high variability with respect to the number and size of the assemblage of articles to be held.



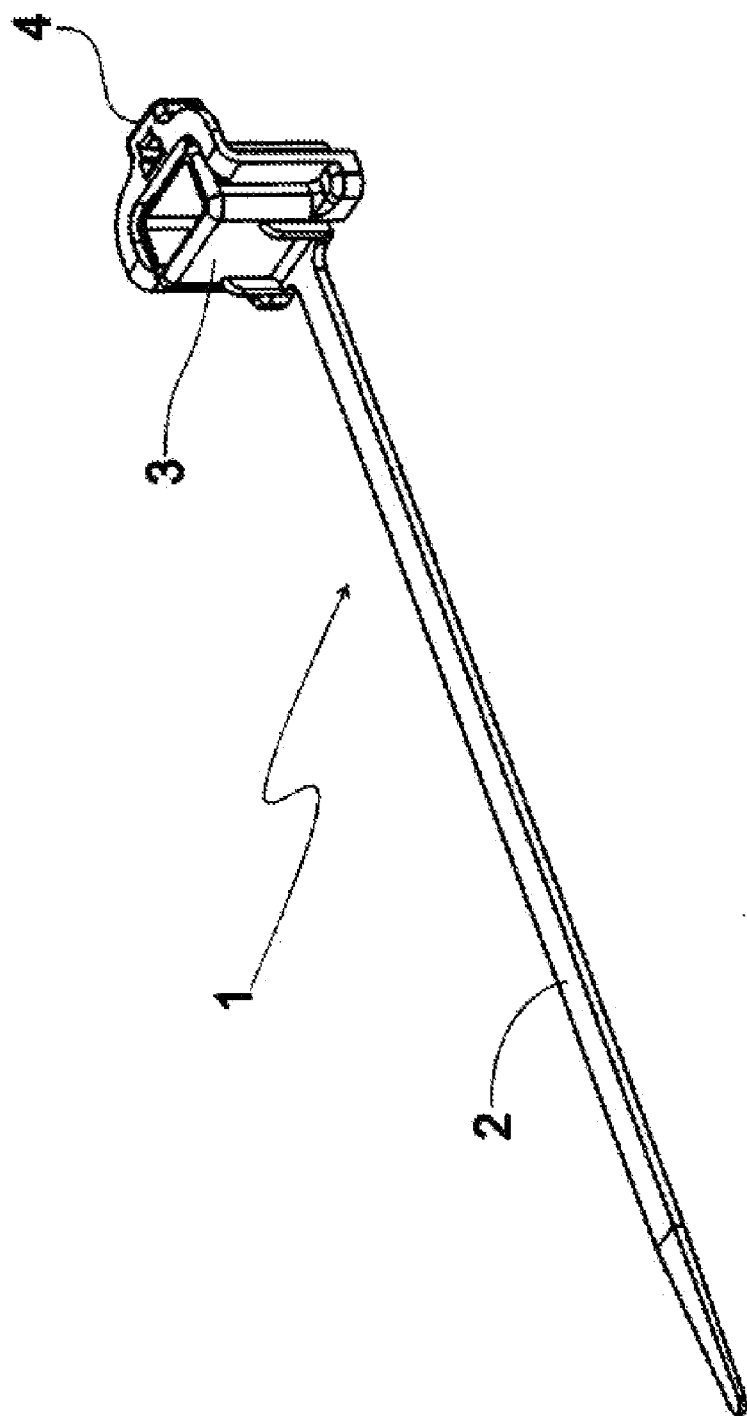


Fig. 1

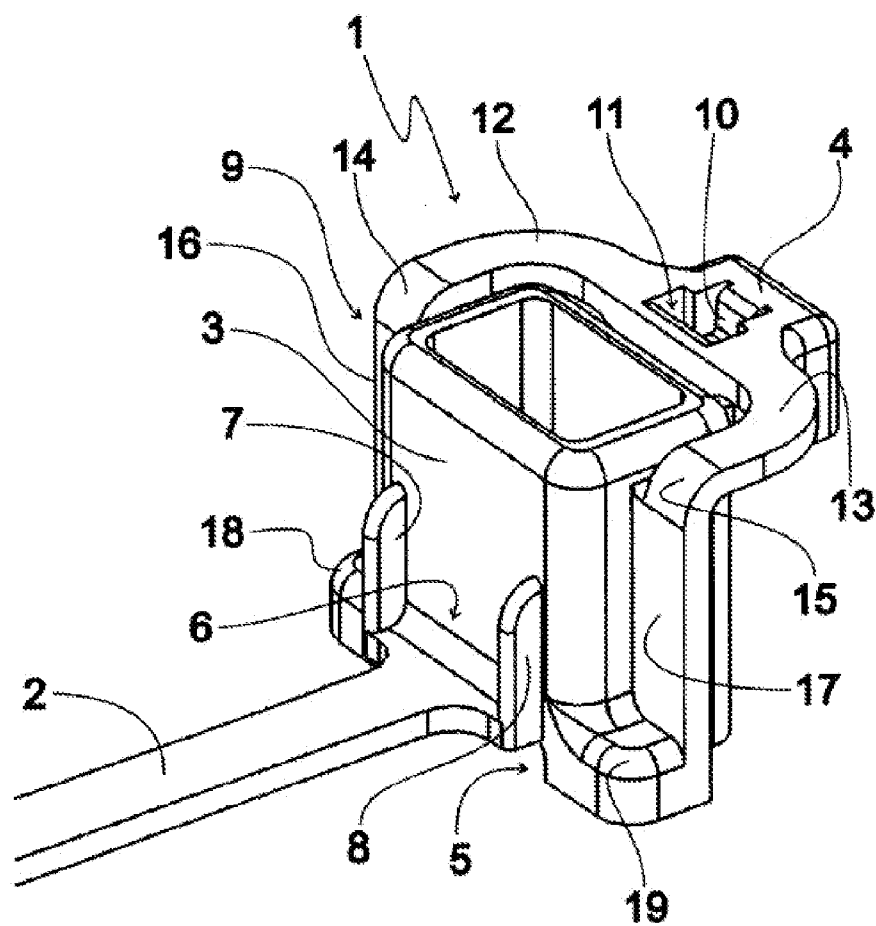


Fig. 2

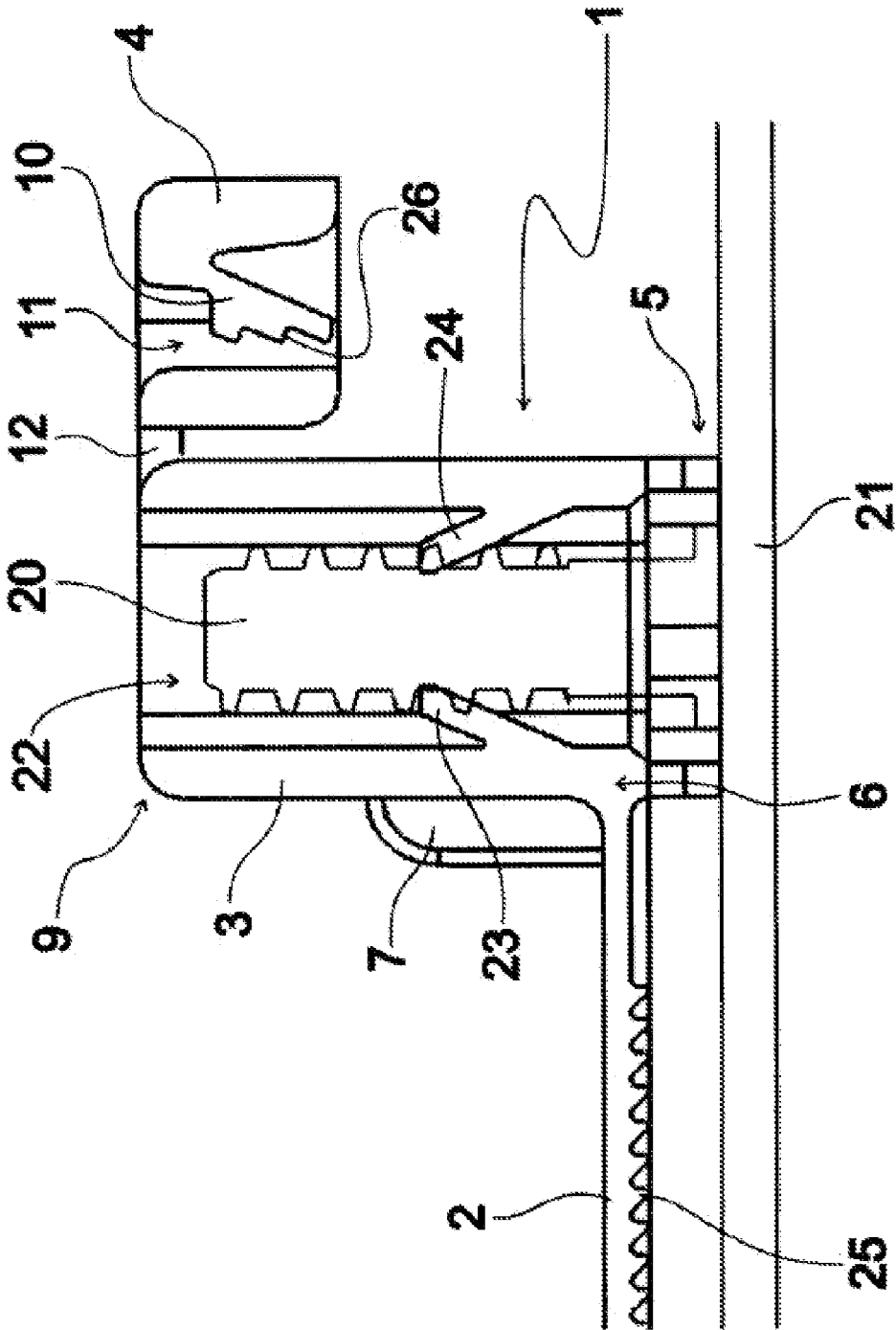


Fig. 3

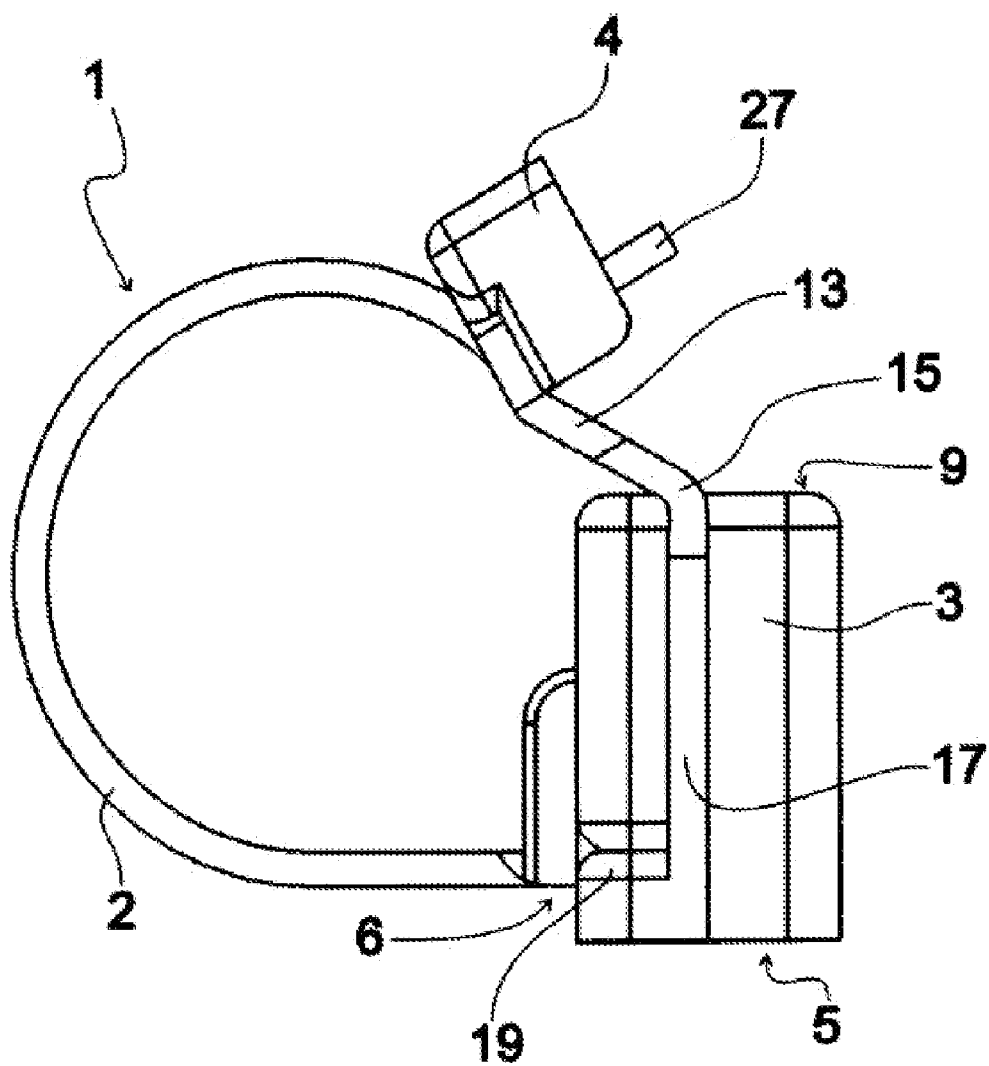


Fig. 4

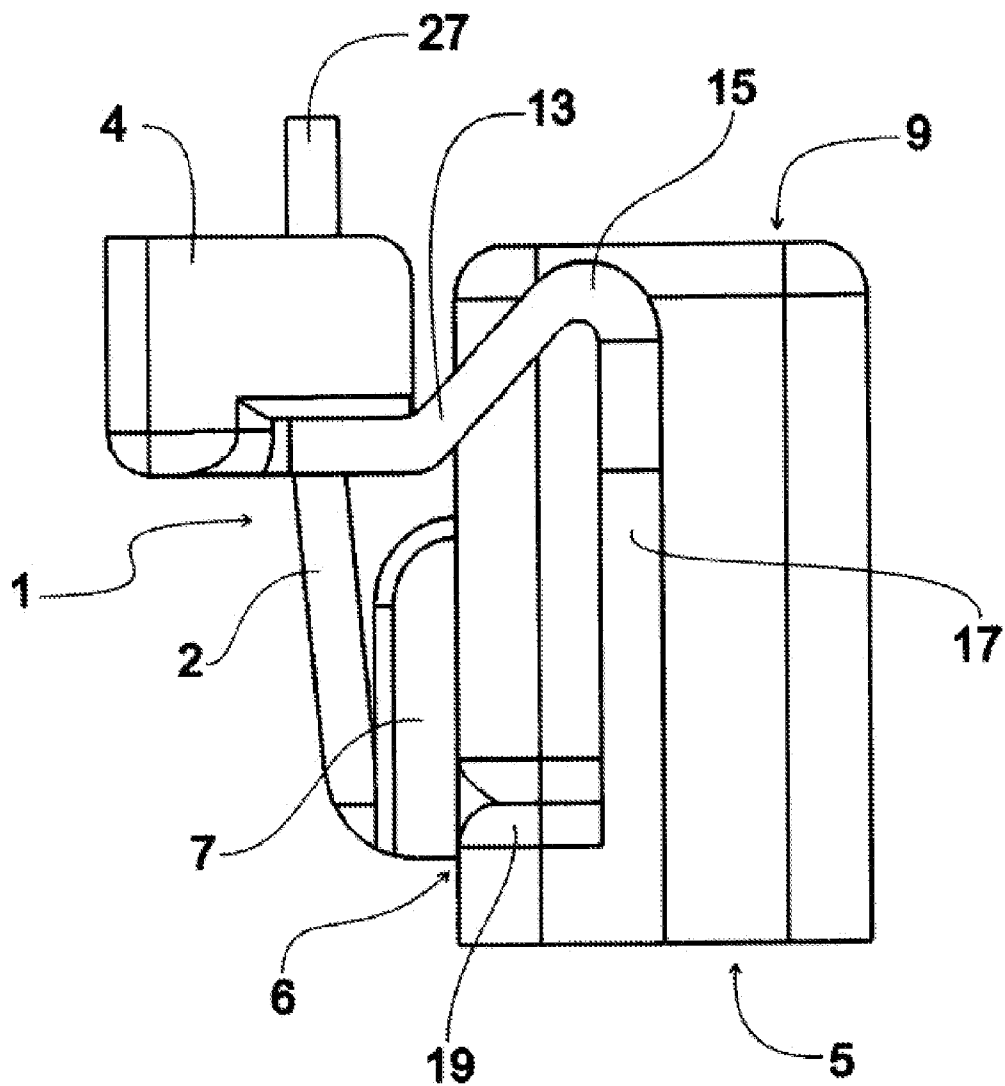


Fig. 5

DEVICE FOR HOLDING ARRANGEMENT OF OBLONG OBJECTS

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention provides a device for holding an assemblage of elongated articles.

[0003] 2. Description of the Related Art

[0004] One device is known from GB 1 242 278 A. The device of the generic kind for holding an elongated assemblage of articles comprises a fastening body to effect fastening to a support part and has a looping strap that stands connected by one end to the fastening body. Also present is a strap receiving part, which via at least one flexible connecting portion is arranged on one side of the fastening body and connected to the fastening body, said looping strap being directly connected to the fastening body in a strap fastening region, and said strap receiving part being on the opposite side of the fastening body from the strap fastening region when the or each connecting portion is in the relaxed state.

[0005] Known from U.S. Pat. No. 3,302,913 and DE 93 17 983 U1 are devices for holding an elongated assemblage of articles that comprise a fastening body to effect fastening to a support part. The fastening body is configured at one end with a latching foot that snaps into a recess configured in the support part. Configured on the upper side of the fastening body, i.e. the opposite side from the latching foot, are a looping strap and, via a connecting portion, a strap receiving part, which can be brought into engagement with each other to hold the assemblage of articles against the upper side of the fastening body opposite from the latching foot.

[0006] Known from DE 89 11 414 U1 is a device for holding an elongated assemblage of articles that comprises a fastening body to effect fastening to a support part, and a looping strap that stands connected by one end to the fastening body. Also present is a strap receiving part, which, via a rigid connecting portion, is arranged on the other side of the fastening body and connected to the fastening body.

[0007] A further device configured as a cable tie is known from EP 0 751 597 A1. In this prior cable tie, a strap receiving part is formed, via a flexible connecting portion, on a fastening body adapted to effect fastening to a support part. One end of a looping strap is attached to the opposite side of the strap receiving part from the connecting portion, and the strap is thereby indirectly connected to the fastening body. The free end of the looping strap can be inserted in the strap receiving part and can be locked in place after being tightened, so as to hold multiple cables, in particular, as an assemblage of articles.

SUMMARY OF THE INVENTION

[0008] The present invention provides a device for holding an assemblage of elongated articles by means of which the assemblage of articles can be positioned very tightly against the fastening body and which is distinguished by high variability with respect to the number and size of the assemblage of articles to be held.

[0009] By virtue of the inventive tethering of the strap receiving part to the fastening body, the article or articles to be held lie against the fastening body when the looping strap is tightened, bending the strap receiving part, in the extreme case, all the way over to the side occupied by the looping

strap, said bending-over of the strap receiving part resulting in a broad range of applicability in terms of total enlooped cross section.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] The above mentioned and other features and objects of this invention, and the manner of attaining them, will become more apparent and the invention itself will be better understood by reference to the following description of embodiments of the invention taken in conjunction with the accompanying drawings, wherein:

[0011] FIG. 1 is a perspective view of an exemplary embodiment of a device according to the invention;

[0012] FIG. 2 is an enlarged view of the exemplary embodiment according to FIG. 1 in the region of a fastening body;

[0013] FIG. 3 is a section of the exemplary embodiment according to FIGS. 1 and 2 in the region of the fastening body;

[0014] FIG. 4 is a side view of the exemplary embodiment according to FIG. 1 to 3 with a looping strap inserted in a strap receiving part and intended for an assemblage of articles having a relatively large total cross section; and

[0015] FIG. 5 is a side view of the exemplary embodiment according to FIGS. 1 to 3, with a looping strap inserted in a strap receiving part and intended for an assemblage of articles having a relatively small total cross section.

[0016] Corresponding reference characters indicate corresponding parts throughout the several views. Although the exemplifications set out herein illustrate embodiments of the invention, in several forms, the embodiments disclosed below are not intended to be exhaustive or to be construed as limiting the scope of the invention to the precise forms disclosed.

DETAILED DESCRIPTION

[0017] FIG. 1 is a perspective view of an exemplary embodiment of a device according to the invention, configured as a cable tie 1 for holding preferably multiple cables of an assemblage of elongated articles. The cable tie 1 comprises an elongated, relatively long, band-like looping strap 2, which is attached by one end to a fastening body 3 having a square basic shape. The fastening body 3 serves to effect fastening to a support part not shown in FIG. 1. The cable tie 1 further comprises a strap receiving part 4, connected to fastening body 3.

[0018] FIG. 2 shows the cable tie 1 according to FIG. 1 in an enlarged representation in the region of the fastening body 3 comprising a strap receiving part 4 in a relaxed arrangement. It can be seen from FIG. 2 that the looping strap 2 is attached to a broad side of fastening body 3, in a strap fastening region 6 located in a foot region 5 that is at the bottom in the depiction of FIG. 2. It can be recognized from FIG. 2 that configured in strap fastening region 6 on both sides of looping strap 2 are two clamping ribs 7, 8 that extend away from foot region 5 in the direction of a head region 9 of fastening body 3 that is arranged at the top in the depiction of FIG. 2, and that jut out from fastening body 3 in the direction of looping strap 2. Said clamping ribs 7, 8 preferably extend, as shown in FIG. 2, from foot region 5 to roughly the middle region of fastening body 3.

[0019] It can also be gathered from FIG. 2 that strap receiving part 4 has a latching tongue 10 that extends into a through-space 11. Attached laterally to strap receiving part 4 are tie brackets 12, 13, which extend from the opposite side of fastening body 3 from strap fastening region 6, initially trans-

versely to the longitudinal direction of looping strap 2 along the other broad side of fastening body 3, and are then bent in the direction of the longitudinal direction of looping strap 2, such that they lie parallel to the narrow sides of fastening body 3.

[0020] The ends of tie brackets 12, 13 that lie parallel to the narrow sides of fastening body 3 each give way to a respective connecting portion 14, 15 which is bent around flexibly in the direction of foot region 5, and both of which are relaxed in the depiction of FIG. 2, said connecting portions 14, 15 in turn being attached to tie ribs 16, 17 formed on the narrow sides of fastening body 3. The tie ribs 16, 17 extend from head region 9 into foot region 5 and are disposed roughly in the middle of the narrow sides of fastening body 3.

[0021] A respective base plate 18, 19 is configured between strap fastening region 6 and each of the ends of tie ribs 16, 17 that are disposed in foot region 5, and has the overall effect of increasing stability and the load-bearing area of the cable tie 1 in foot region 5.

[0022] In the arrangement of looping strap 2 and strap receiving part 4 described in conjunction with FIG. 2, strap fastening region 6 is on the opposite side of fastening body 3 from strap receiving part 4, and strap receiving part 4 and strap fastening region 6 are disposed at mutually opposite end regions of fastening body 3, namely foot region 5 and head region 9.

[0023] FIG. 3 shows a section through the cable tie 1 according to FIGS. 1 and 2 in the region of the fastening body 3. In the depiction of FIG. 3, fastening body 3 is mated onto a threaded bolt 20, which is connected to a support part 21. Configured in a bolt receiving space 22 of fastening body 3 are retaining claws 23, 24, tilted in the insertion direction of threaded bolt 20, that come into engagement with the thread of threaded bolt 20 and appreciably increase the withdrawal force of cable tie 1 from threaded bolt 20 compared to the mating force.

[0024] It can further be understood from FIG. 3 that looping strap 2 is configured in this exemplary embodiment with a multiplicity of strap teeth 25 shaped complementarily to tongue teeth 26 formed outwardly on latching tongue 10, such that when the free end of looping strap 2 is inserted in through-space 11, the strap teeth 25 and the tongue teeth 26 come into engagement with one another, and after the looping strap is tightened, an enlooped assemblage of articles not shown in FIG. 3, such as a single article, for example in the form of a relatively thick cable or tube, or a number of articles, for example a plurality of small cables or tubes of relatively small cross section, is held practically irreleasably.

[0025] FIG. 4 is a side view of the cable tie 1 according to FIGS. 1 to 3 in an arrangement for holding an assemblage of articles having a relatively large total cross section. It can be seen from FIG. 4 that in this arrangement, strap receiving part 4 is bent over from the relaxed arrangement according to FIGS. 1 to 3, in which it is disposed oppositely from fastening region 6, in the direction of the side of fastening body 3 comprising strap fastening region 6, and is still disposed above head region 9. The free end 27 of looping strap 2 passes through strap receiving part 4 and has already been shortened.

[0026] FIG. 5 shows the cable tie 1 according to FIGS. 1 to 3 in an arrangement for holding an assemblage of articles having a relatively small total cross section. It can be seen from FIG. 5 that looping strap 2 is stretched out essentially straight in this arrangement, and that compared to the relaxed arrangement according to FIGS. 1 to 3, strap receiving part 4 is completely flipped over to the side of fastening body 3 where strap fastening region 6 is located. Hence, providing clamping ribs 7, 8 extending in the direction of looping strap 2 makes it possible to reliably hold an assemblage of articles having a very small total cross section.

[0027] In addition, it will be noted that after looping strap 2 is inserted into strap receiving part 4, strap receiving part 4 and the free end 27 of looping strap 2 are disposed on opposite sides of foot region 5 whether the assemblage of articles to be enlooped has a large or a small cross section, thereby simplifying the operations of pulling taut and cutting off the excess length of free end 27, since the strap receiving part 4 and the free end 27 are facing toward the user.

[0028] While this invention has been described as having a preferred design, the present invention can be further modified within the spirit and scope of this disclosure. This application is therefore intended to cover any variations, uses, or adaptations of the invention using its general principles. Further, this application is intended to cover such departures from the present disclosure as come within known or customary practice in the art to which this invention pertains and which fall within the limits of the appended claims.

1-4. (canceled)

5. A device for holding an assemblage of elongated articles with respect to a support part, comprising:

- a fastening body attachable to the support part;
- a looping strap connected at one end thereof to a strap fastening region on a first side of said fastening body; and
- a strap receiving part connected to two mutually opposite sides of said fastening body via a flexible connection including a pair of connecting portions and a pair of tie brackets, said connecting portions attached to tie ribs that jut out laterally from said fastening body and said pair of tie brackets laterally attached to said strap receiving part, said strap receiving part disposed on a second, opposite side of said fastening body when said flexible connection is in a relaxed state.

6. The device of claim 5, wherein said strap receiving part and said strap fastening region are disposed on mutually opposite end regions of said fastening body.

7. The device of claim 5, wherein said tie ribs extend to a foot region of said fastening body, said foot region including base plates connected to said fastening body and to said tie ribs, said base plates extending laterally outwardly of said fastening body.

8. The device of claim 6, wherein said fastening body includes at least one clamping rib disposed laterally of said strap fastening region of said fastening body, said at least one clamping rib extending in the direction of said looping strap.

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