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(54) Magnetic clasp for bracelets, necklaces and similar articles of goldsmithery or jewelry

(57) A clasp (1) for a bracelet, a necklace or any similar article of goldsmithery or costume jewelry, comprising two elements (1, 2) capable of being fixed to the respective ends of an elongated, flexible or articulated body forming the article, to reversibly connect the ends along a common longitudinal axis. The elements (1, 2) comprise respective magnetic coupling pads (5, 6) that keep said elements interlocked in a coaxial position. The clasp further comprises male-female engagement means (3, 4) between the elements (1, 2) that are fit for being connected to each other transversally with respect to the longitudinal axis. The pads (5, 6) are associated with the engagement means (3, 4) in such a way that the magnetic attraction there between will oppose the transverse disengagement of the elements.

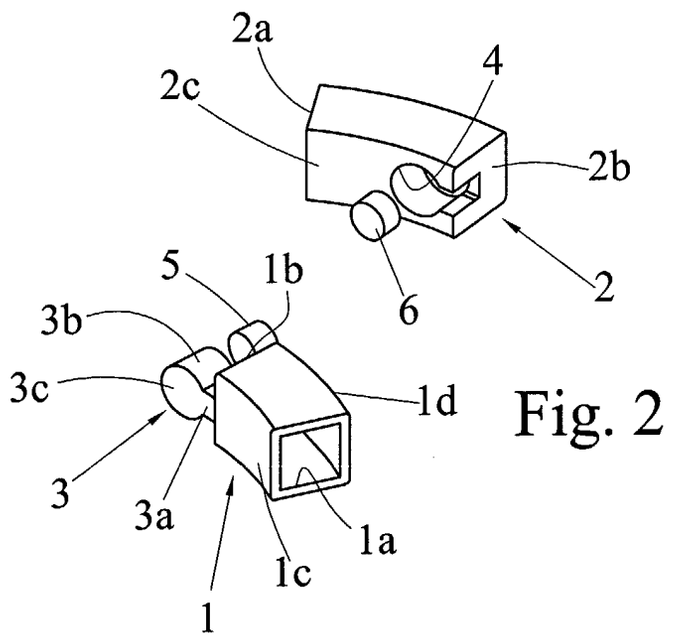

Fig. 2

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Description

[0001] The present invention relates to the field of goldsmithery and jewelry. In particular, it concerns a new clasp for bracelets, necklaces and the like.

[0002] In the above mentioned field there are known magnetic clasps in which the two elements forming the clasp are separated by subjecting them to a longitudinal traction force, i.e. a force acting along the common axis of the connection between the two ends of the bracelet or the necklace, and thus overcoming the magnetic attraction. These clasps are however associated with serious safety limits, because the opening action can easily be performed by a thief without the wearer becoming aware of what is happening. Moreover, it is quite easy for a sufficiently high traction force to derive form some accidental event, a typical case in point being the entanglement of the bracelet or necklace, which will thus cause the object to drop to the ground and may lead to its loss.

[0003] Use is therefore sometimes made of additional connection means, but in this way the advantages of simplicity and aesthetic appeal associated with the magnetic clasp are lost. That is the reason why this type of clasp has hitherto enjoyed little success, its use remaining confined to articles of little value for which the safety requirements are less stringent.

[0004] It is therefore the object of the present invention to provide a magnetic clasp for bracelets, necklaces and similar articles of goldsmithery and jewelry that, thanks to an original configuration of its component elements, succeeds in assuring a high degree of safety, such as to permit its use also for articles of considerable value.

[0005] This aim is attained by means of the magnetic clasp in accordance with the present invention, comprising two elements suitable for being fixed to the two ends of an elongated flexible or articulated body that forms a bracelet, a necklace or some similar article of goldsmithery or jewelry, to provide a reversible connection between said ends along a common longitudinal axis, said elements comprising respective small magnetic coupling pads that will lock the elements to each other in a coaxial position, characterized in that the clasp comprises male and female engagement means between the elements that are so shaped to be mutually engaged in a transverse direction with respect to said longitudinal axis to prevent the disconnection of the elements along the longitudinal axis, the pads being associated with the engagement means in such a way that the magnetic attraction will counteract their transverse disengagement.

[0006] The invention will now be illustrated in greater detail by the following description of a particular embodiment thereof, which is to be considered as an example and not limitative in any way, said description making reference to the attached drawing, of which:

- Figure 1 shows a perspective view of the clasp in accordance with the invention, in the open configuration;
- Figure 2 shows a perspective of the same clasp as in the previous figure, but this time in exploded form in order to indicate the position of the magnetic coupling pads on the two elements forming the clasp;
- Figure 3 shows a perspective view of the clasp of the previous figures, this time in the closed configuration.

[0007] Referring to these figures, the clasp in accordance with the invention comprises two elements 1, 2 suitable for being fixed in any known manner to the respective ends of a body (not shown in the figures) having an elongated flexible or articulated structure, said ends having to be connected coaxially and in a reversible manner in order to form a bracelet or a necklace. In the illustrated example the two elements 1 and 2 have a tubular structure with a quadrilateral cross section and thus define respective seatings 1a, only one of which can be seen in the figures, for becoming engaged with the two ends of the elongated body.

[0008] One of the two elements, in the illustrated example the one indicated by the reference number 1, acts as the male element of the clasp and is provided with an arm 3 that extends longitudinally, i.e. along the axis of connection of the two ends, from a face 1b at its free end. Arm 3 is formed by a stem 3a and a head 3b that is enlarged in a direction perpendicular to the connection or insertion axis of the ends.

[0009] Transverse thickness of arm 3 is smaller than that of element 1. Thickness of element 1 is equal to the distance between two spaced, parallel faces thereof, indicated at 1c and 1d, these faces being respectively the rear face and the front face with respect to the direction of insertion. A base face 3c of arm 3 is coplanar to rear face 1c of element 1. If, as in the embodiment here illustrated, the two elements of the clasp have an arcuate shape that continues the configuration of the bracelet or the necklace, the rear face 1c is preferably the concave side, which is thus on the inside of the article when it is worn. Head 3b therefore expands in a direction at right angles to the plane of curvature. In the preferred embodiment here illustrated, head 3b has a lobe-shaped profile that is symmetrical with respect to stem 3a.

[0010] The other element 2 acts as the female element of the clasp and is provided with a seating 4 intended to engage with arm 3, this seating opening onto a side 2b that constitutes the free end of element 2 and a side face 2c that corresponds to side face 1c of male element 1. More precisely, seating 4 opens onto side face 2c with a shape that corresponds exactly to that of arm 3 and opens onto side 2b with a shape equal to the cross section of arm 3 at the level of stem 3a. In this way, as can be seen particular in Figures 1 and 3, seating 4 is capable of fully accommodating arm 3, which is inserted thereinto along a transverse direction at right angles to the plane of expansion of head 3a and is then

pushed home until the two elements 1 and 2 are wholly coaxial.

[0011] The interlocking of the two elements 1 and 2 in the coaxial configuration, i.e. the closed position of the bracelet or the necklace, as shown in Figure 3, is assured by two small magnetic coupling pads 5 and 6, embedded respectively on the front base of head 3b of arm 3 and at the bottom of seating 4, as can be seen in Figure 2. The magnetic coupling force therefore acts transversely with respect to the connection axis of the elongated body, opposing the disengagement of arm 3 from seating 4, and the mutual disengagement of the two elements along this axis is prevented by head 3b abutting against the inner wall of seating 4 close to side 2b of element 2.

[0012] When the clasp is to be opened, an action intended to detach the two elements from each other will therefore have to be necessarily exerted in the transverse direction in order to overcome the force of magnetic attraction and remove arm 3 from seating 4. This solution assures far greater safety than any of the known magnetic clasps mentioned in the introduction part hereinabove. In fact, both an accidental entanglement and an attempted theft will essentially cause a force component acting in the longitudinal direction and this will be perfectly opposed by the clasp. On the other hand, it will be relatively difficult for either of the events just mentioned giving rise to a tangential force component sufficient to open the clasp, especially without the wearer becoming aware of what is happening.

[0013] It is thus possible to obtain an adequate degree of safety without having to have recourse to additional hookup means and thus to fully profit from the features of simplicity and aesthetic appeal of a magnetic clasp even when it is mounted on articles of value.

[0014] As already mentioned, the shape of head 3a, and consequently also of seating 4, may be different from the one shown in the figures, always provided that it remains capable of assuring an equivalent engagement action that will prevent the detachment of the two elements when the opening action is exerted along the axis of connection between the two ends of the elongated body. On the other hand, the invention is not limited to the embodiment described and illustrated hereinabove, but also comprises any variation as specified in the claims attached hereto.

Claims

1. A clasp (1) for a bracelet, a necklace or any similar article of goldsmithery or costume jewelry, comprising two elements (1, 2) capable of being fixed to the respective ends of an elongated flexible or articulated body forming said article, to reversibly connect said ends along a common longitudinal axis, said elements (1, 2) comprising respective magnetic coupling pads (5, 6) that keep said elements interlocked in a coaxial position, **characterized in that** it comprises male-female engagement means (3, 4) between said elements that are fit for being connected to each other transversally with respect to said longitudinal axis in order to prevent the disconnection of said elements along said longitudinal axis, said pads being associated with said engagement means in such a way that the magnetic attraction between the pads will oppose the transverse disengagement of the elements.

2. A clasp in accordance with claim 1, wherein said male-female engagement means comprise an arm (3) with a base stem (3a) and a head (3b) enlarged with respect to said stem in a plane normal to the direction of insertion, said arm (3) projecting longitudinally from one of said elements (1), and a seating (4) provided in the other element (2) capable of accommodating said arm (3) in such a way that said head (3b) abuts longitudinally against said seating, said pads being arranged, respectively, on a front side of said arm (3) and on a bottom of said seating (4).

3. A clasp in accordance with claim 2, wherein said arm (3) projects from a free end face (1b) of the relevant element (1) and has a thickness smaller than the thickness of said element measured in a direction normal to the plane of expansion of said head, starting from an arm base (3c) coplanar with one side face (1c) of the element (1), said seating (4) opening onto the free end face (2b) and one side face (2c) of the other element (2), the shape of the opening onto the side face corresponding exactly to that of the arm (3), while the shape of the opening onto the free end face (2b) is equal to the cross section of the stem (3a) of said arm (3), so that said seating (4) is capable of fully accommodating said arm (3).

4. A clasp in accordance with claim 3, wherein said elements (1, 2) have an arcuate shape, said sides being the concave side faces (1c, 2c), which are situated on the inside of the article when it is worn, said head expanding therefore in a direction normal to the plane of curvature.

5. A clasp in accordance with any one of claims 2 to 4, wherein said head (3b) has a lobe-shaped profile, symmetrical with respect to said stem (3a).

6. A clasp in accordance with any one of the preceding claims, wherein said elements (1, 2) have a tubular shape with a quadrilateral cross section, defining respective seatings (1a, 2a) for engaging two ends of said elongated body.

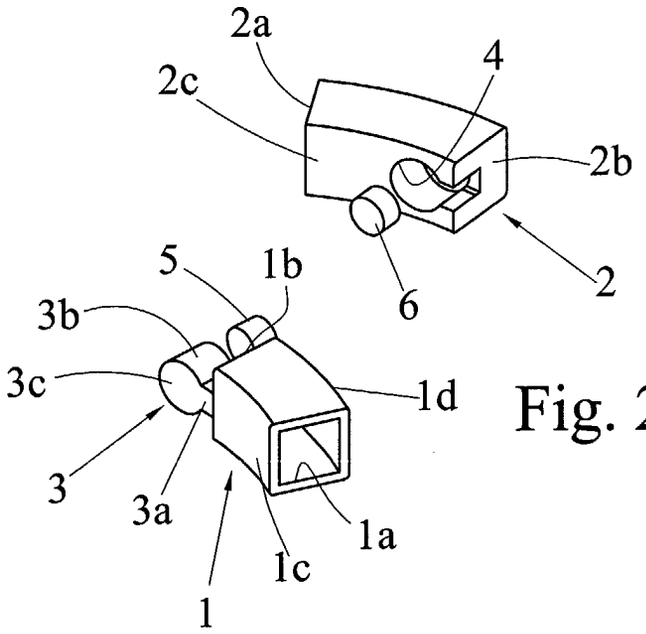

Fig. 2

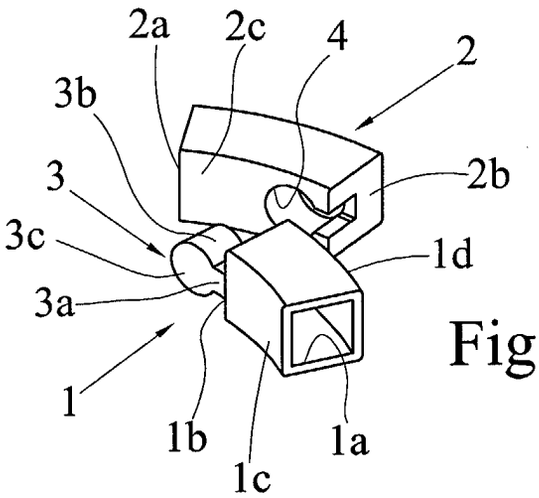

Fig. 1

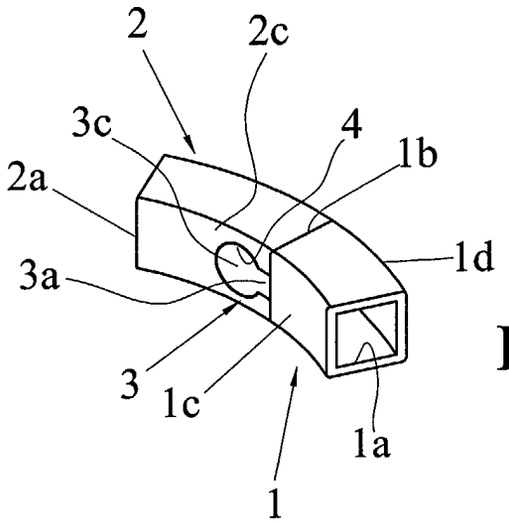

Fig. 3