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REFERENCES CITED:
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Description

[0001] The invention regards a chain for jewels, made of precious and non-precious metal, constituted by a succession of identical and mutually concatenated elements.

[0002] In the costume jewellery and jewellery industry in general, there are several examples of chains with identical elements concatenated to each other.

[0003] At times, such elements are constituted by closed rings so that the subsequent ring which is concatenated to the previous one is inserted open and then welded so as to close the opening thereof, so as to form a succession of chain elements resistant to any stress.

[0004] Constructions of chains in which each element is connected to the subsequent one through a folding operation which confers the element a substantially box-like shape are also known.

[0005] In constructions of this kind, the terminal parts which are closed on each other to obtain a box-like shape are at times subjected to stresses that allow opening the element again and thus breaking the chain.

[0006] With the aim of overcoming such drawback, it was proposed to reinforce the element constituting the chain, especially in the terminal part, for example by increasing the thickness thereof, so that the part in question cannot open easily unless subjected to particularly high stress loads.

[0007] However, even this solution does not allow attaining the safety level required to ensure that the chain, for example if subjected to sudden yank movement or unexpected stresses, does not open and break.

[0008] However, ornamental jewel costume or jewellery chain manufacturers still strive to obtain chains constituted by elements that can be concatenated to each other and without welding.

[0009] This with the clear aim of especially avoiding carrying out - on the welding in question - expensive operations such as welding as well as aesthetic finishing operations that are long, expensive and which at times fail to attain the aesthetic perfection required in constructions of this kind.

[0010] Prior art document EP 1 943 916 A2 of the same Applicant discloses a chain comprising cage-shaped elements connected in succession and comprising a central body from which lateral bodies branch off whose free ends are arranged opposite each other, slidingly inserted in another cage-shaped element adjacent to the cage-shaped element and facing the corresponding central body. The chain comprises an elastic element interposed between the free ends of the lateral bodies of each cage-shaped element and the central body of the adjacent cage-shaped element.

[0011] The object of the present invention is to provide a necklace with mutually concatenated elements capable of overcoming the drawbacks outlined above. The main object of the present invention is to provide a chain in which each element that forms it is concatenated to the other so that the elements, though not being provided with any welding whatsoever, do not open even when subjected to strong tensile stresses of the chain.

[0012] Another object of the present invention is to provide a chain that is easy to assemble and that is constituted by elements that are easy to obtain through simple mechanical operations such as cutting, cambering and shaping operations.

[0013] The objects mentioned above and other objects to be highlighted in the description outlined hereinafter are attained by a chain for jewels whose characteristics are according to the contents of the first claim.

[0014] Advantageously, according to the invention, the chain is formed by a succession of elements in which each element that is connected to the subsequent one is substantially box-shaped and has two symmetric parts folded on each other. Each part has two appendages essentially folded by 90° forming the resistant element which contrasts against the central body or bottom of the element which is subjected to tension.

[0015] Thus, the terminal parts of each element, which are superimposed on each other and which could open if subjected to stress, actually are never subjected to tension in that the entire possible tensile stress the element is subjected to with respect to the other is absorbed by the appendages symmetrically arranged so that they offer the maximum flexural resistance modulus under the tensile stress.

[0016] Further characteristics and details of the invention shall be more apparent from the description of a preferred embodiment of the invention, outlined hereinafter by way of non-limiting example, with reference to the attached drawings, wherein:

- fig. 1 shows the extension of an element constituting the chain;
- fig. 2 shows an element of the chain that has been subjected to cambering and folding operations;
- fig. 3 is a section of the element of fig. 2 along the longitudinal axis X-X;
- fig. 4 is a front view of fig. 2;
- fig. 5 shows a partly sectioned three-dimensional diagram of a piece of chain obtained according to the invention;
- fig. 6 is a top view of the piece of fig. 5;
- fig. 7 is a partial section of the piece of fig. 6 according to line A-A;
- fig. 8 shows a sectional view of a further piece of the chain of the invention. With reference to fig. 1, it can be observed that the chain for jewels comprises a plurality of elements indicated with 1 which will then be directly mutually concatenated to each other.

[0017] As observable in fig. 1, each element 1 is formed by two symmetric parts indicated with 2 and with 3 joined to each other by an essentially cambered central body 4.

[0018] Each of the two parts 2 and 3 has an essentially longitudinal body, indicated with 20 and 30, which is pro-
vided with two appendages 21, 22; 31, 32 arranged on the opposite sides with respect to the longitudinal axis X-X of said element, and with a terminal part 23; 33.

[0019] Said appendages and said terminal part shall be subsequently folded during the folding and cambering operation, as observable in fig. 2.

[0020] Basically, the parts 2 and 3 are folded on themselves being spaced from each other due to the presence of the central body 4 and closing to form a box-like shape given that the terminal parts 23 and 33 are coupled ad-

herent to each other.

[0021] As observable in fig. 5, with particular reference to the mutually concatenated elements now indicated with a and b, it should be observed that the element b is positioned, with respect to the element a, so that the central body 4b or bottom thereof is arranged in the space between the central body 4a of the element a and the appendages 22a and 32a still belonging to the central body 4a.

[0022] Thus, when the element b is subjected to ten-
sion for any reason whatsoever, given that it is concatenate-
ned to others, the bottom 4b contrasts against the two appendages 22a and 32a of the body 4a without ever subecting the two terminal parts 23a and 33a folded on themselves to tension and thus easy to open under con-
siderable tension stress.

[0023] The information provided with reference to fig.
5 can also be easily observed in fig. 7, which shows the section of the piece of chain according to line A-A shown in fig. 6.

[0024] Thus, the fact of discharging the tensile stress exclusively on the appendages 22a and 32a by the element b causes a strong resistance to tension over the entire chain given that the bottom 4b exerts the stress on the appendages 22a and 32a which are arranged so as to offer the maximum flexural resistance modulus.

[0025] Actually, as observable in fig. 2, each of the appendages 22a and 32a acts as a beam fitted in the section S being essentially rectangular shaped, where the force F is applied according to a direction Y parallel to the di-
rection of the greater axis of the section. Thus, such sec-
ction is arranged in the configuration that offers the maximum value of the flexural resistance modulus against the bending moment generated by the force F and which acts on the same.

[0026] According to the shown example, it is thus ob-
served that elements mutually concatenated to each oth-
er without any welding, but exclusively closed and folded on themselves, are capable of guaranteeing a resistance absolutely comparable to that of the elements concatenate-
ned to each other and welded.

[0027] Thus, all the objects of the invention are at-
tained; in particular, the purpose was to attain a maximum resistance of the chain to a sudden yank, though said chain is constituted by elements mutually concatenated and folded on each other, without requiring any kind of welding.

[0028] Thus, the construction becomes simple and it can be carried out using automatic machines.

[0029] In addition, the finishing of the ornamental chains so obtained is also simple given that it does not require extra operations to eliminate visible aesthetic flaws.

Claims

1. Chain for jewels comprising a plurality of elements (1) directly concatenated to each other, each element (1) being constituted by two symmetric parts (2, 3) joined to each other by a central body (4), wherein in each of said two parts (2, 3) an essentially longitudinal body (20; 30) is defined and it is provided with two appendages (21, 22; 31, 32) arranged on opposite sides with respect to the longitudinal axis (X-X) of said element and with a terminal part (23; 33), said appendages and said terminal part folding by about 90° with respect to said longitudinal body (20; 30) when said symmetric parts (2, 3) of said element (1) are folded on each other so as to con-

stitute an essentially box-shaped element (1), characterised in that said central body (4) of each ele-

ment (1), which is concatenated in succession with each adjacent element of said chain, contrasts against said appendages (21, 22; 31, 32) of said ad-

jacent element when said chain is subjected to a tensile stress, while the terminal parts (23; 33) of each element (1) remain load-free.

2. Chain for jewels according to claim 1, characterised in that each of the appendages (21, 22; 31, 32) has an essentially rectangular transversal section (S) having the greater axis (Y) arranged essentially par-

allel to the direction of the force (F) acting on each of said appendages, so as to have the maximum value of the flexural resistance modulus for said section.

3. Chain for jewels according to claim 1, characterised in that each central body (4) of each element (1) is arranged in the space comprised between the further central body (4) of each element (1) that precedes it and the two symmetric appendages of said body that precedes it.

4. Chain according to claim 1 or 2 or 3, characterised in that in each element (1) each of said two parts (2, 3) has an essentially longitudinal cambered shape.

5. Chain according to any one of the preceding claims, characterised in that said central body (4) has an essentially cambered shape.
1. Kette für Schmuck, eine Vielzahl von direkt miteinander verketteten Elementen (1) umfassend, wobei jedes Element (1) aus zwei symmetrischen Teilen (2, 3) besteht, die durch einen mittleren Körper (4) miteinander verbunden sind, wobei in jedem der besagten zwei Teile (2, 3) ein im Wesentlichen länghcher Körper (20; 30) definiert ist und mit zwei bezüglich der Längsachse (X-X) des besagten Elements an entgegengesetzten Seiten angeordneten Anhängern (21, 22; 31, 32) sowie mit einem Abschlussteil (23; 33) versehen ist, wobei die besagten Anhänger und das besagte Abschlussteil sich um circa 90° bezüglich des besagten länglichen Körpers (20; 30) zusammenlegen, wenn die besagten symmetrischen Teile (2, 3) des besagten Elements (1) aufeinandergelegt sind, so dass sie ein im Wesentlichen schachtelförmiges Element (1) bilden, dadurch gekennzeichnet, dass der besagte mittlere Körper (4) jedes Elements (1), das in Folge mit jedem benachbarten Element der besagten Kette verkettet ist, den besagten Anhängern (21, 22; 31, 32) des besagten benachbarten Elements entgegenwirkt, wenn die besagte Kette einer Zugbelastung unterzogen wird, während die Abschlussteile (23; 33) jedes Elements (1) unbelastet bleiben.

2. Kette für Schmuck nach Patentanspruch 1, dadurch gekennzeichnet, dass jeder der Anhänger (21, 22; 31, 32) einen im Wesentlichen rechteckigen Querschnitt (S) hat, dessen längere Achse (Y) im Wesentlichen parallel zu der Richtung der auf jeden der besagten Anhänger wirkenden Kraft (F) angeordnet ist, so dass sie den größtmöglichen Wert des Biegefestigkeitsmoduls für den besagten Querschnitt aufweist.

3. Kette für Schmuck nach Patentanspruch 1, dadurch gekennzeichnet, dass jeder mittlere Körper (4) jedes Elements (1) in dem Raum angeordnet ist, der zwischen dem weiteren mittleren Körper (4) jedes ihm vorhergehenden Elements (1) und den zwei symmetrischen Anhängern des besagten, ihm vorhergehenden Körpers liegt.

4. Kette nach Patentanspruch 1 oder 2 oder 3, dadurch gekennzeichnet, dass in jedem Element (1) jeder der besagten zwei Teile (2, 3) eine im Wesentlichen länglich gewölbte Form hat.

5. Kette nach einem jeglichen der vorhergehenden Patentansprüche, dadurch gekennzeichnet, dass der besagte mittlere Körper (4) eine im Wesentlichen gewölbte Form hat.
REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- EP 1943916 A2 [0010]