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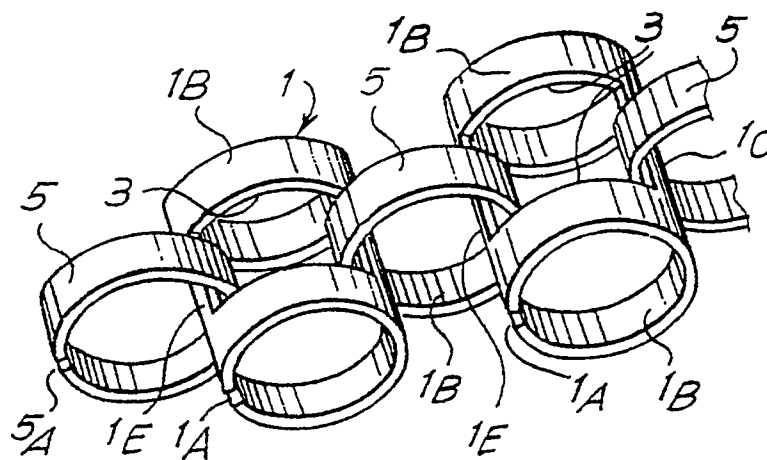
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(54) **Method of forming a decorative chain, and article produced in this way.**

(57) To form a decorative chain, elements (1) are blanked out of a semifinished metal strip (S1), said element (1) having at least one pair of mutually aligned eyeholes (3) defining longitudinal segment and transverse bridges (1C), one at an intermediate position and two at the end; said elements are bent over to bring the two extreme transverse bridges together and thus define parallel links connected by the bridges; elements having parallel links are connected with single links which engage the bridges of contiguous elements having parallel links. (Fig. 9)



**Fig. 9**

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The invention relates to a method of producing a decorative chain, and to the chain made in this way, which bears a remarkable resemblance to chains known by the denomination "Pantera di Cartier".

It is an object of the invention to obtain a chain by a mechanized - and therefore industrialized and economic - process. Another object is to obtain a decorative chain which gives an esthetic appearance of massiveness but is light and hence suitable to be produced from precious metals. These and other objects and advantages will become clear from the text which follows.

The method of forming a decorative chain according to the invention substantially comprises:

- the blanking out, from a semifinished metal strip, of elements having at least one pair of mutually aligned eyeholes defining longitudinal segments and transverse bridges or crossties, one at an intermediate position and two at the ends;
- the bending over of said elements to bring the two extreme crossties together and thus define parallel links connected by the crossties;
- and the connecting together of elements having parallel links with single closed links to engage the crossties of contiguous elements having parallel links.

Other characteristics of the method and of the manufactured article according to the invention are defined in the claims which complement the description which follows.

The invention will be better understood by following the description and the enclosed drawing, which latter shows a practical non-limiting embodiment of said invention. In the drawing:

Fig. 1 shows a blanked out element for forming parallel links;

Figs. 2 and 3 show an element having parallel links in side view and in cross-section through III-III of Fig. 2;

Figs. 4, 5 and 6 show, in an analogous manner to Figs. 1, 2 and 3, a connecting element having a single link, Fig. 6 being a view from VI-VI of Fig. 5;

Figs. 7, 8 and 9 show a portion of a chain in a side view, in cross-section through the split line VIII-VIII of Fig. 7 and in a perspective view;

Figs. 10 and 11 show a plurality of examples of transverse cross-sections through strips with which to obtain elements having parallel links;

Fig. 12 shows a plurality of possible side profiles of links as variants of the profiles of Figs. 3 and 6;

Figs. 13, 14 and 15 show an alternative embodiment of an element forming a pair of parallel links, with Fig. 15 being a cross-section through XV-XV of Fig. 14; and

Figs. 16 and 17 show the form of a blanked out element and a portion of chain formed with such

an element, comprising three segments and hence three parallel links.

In the manner illustrated in the attached drawing, single elements 1 of substantially rectangular form are taken from a strip S1 of laminar metal material, which may also be a precious metal, in which elements two eyeholes 3 are formed by blanking, the eyeholes, being elongate and aligned with one another in the direction which is parallel to the edges of the original strip S1. The ratio between the dimensions of the sides of the element 1 and the ratio between the dimensions of the sides of the eyeholes 3 can vary according to the esthetic requirements upon which the chain is being formed. The sides 1A of the element 1 are intended to be brought together in forming the parallel links, in twos in the example, and can also be welded together. The eyeholes 3 define longitudinal segments 1B, which are joined by means of a central bridge or crosstie 1C and two extreme bridges or crossties 1E, which are delimited partly by the eyeholes and partly by the edges 1A; the bridge 1C can be twice as wide as each of the bridges 1E. The bridges 1C and 1E connect the two longitudinal segments 1B. When the element 1 is bent over, for example in an elliptical shape as shown in Fig. 3, the two segments 1B define two parallel links which are connected by the bridge 1C and by the two narrower bridges 1E, which are brought together by the bringing together of the two edges 1A; the edges 1A can be welded to one another so that the two parallel links formed by the two bridges 1B become continuous.

Another element in the chain is a narrower strip element 5 corresponding in width to the width of the eyeholes 3; this strip element 5 is also bent over, for example elliptically, to form a single link, with its two edges 5A brought together and optionally welded together.

The chain is formed in a way which can also be automated, blanking out the elements 1 and elements 5 from strips S1 and S5 whose widths correspond to those of the elements 1 and 5 respectively; the single elements 1 and 5, progressively formed, are also bent over in the manner indicated and linked to each other with the single links 5 which engage the bridges 1E and 1C of contiguous elements 1 having parallel links.

The strips S1 and S5 may be simply laminar and flat, or they may be laminar and shaped as indicated for example in the cross-sections shown in Fig. 10, or they may be composed of various profiles as shown in Fig. 11, having thicknesses which vary over the transverse cross-section but still with blanked out eyeholes such as 3 of the element 1 of Fig. 1.

The single connecting links such as 5 or the multiple parallel links such as those formed by the elements 1 with the segments 1B, can have not only the approximately elliptical profile such as that of Figs. 3, 6, 8 and 9, but also other profiles such as those indicated in Fig. 12 or other equivalents.

The eyeholes 3 can be obtained by blanking operations which perfectly correspond to the profile of the eyeholes themselves, or they can in addition be shaped so that the connecting bridges such as 1E and 1C are shaped . In particular, a solution is shown in Figs. 13 to 15 in which an element 11, equivalent to 1, has eyeholes 13 which are rectangular in shape but have incisions 14 as an extension of the sides of the eyeholes 13, parallel to the segments 11B which flank the eyeholes; these incisions 14 penetrate into the intermediate, 11C, and extreme, 11E, bridges; these incisions 14 give rise to extensions 11F of the bridges 11E and 11C, which extensions 11F can be bent over, shaping the connecting bridges to facilitate their coupling with the single links 15 equivalent to the links 5. The edges 11A can be welded.

The making of a chain can also be envisaged with elements 21 equivalent to the elements 1 but extended widthwise and with more than one pair of abutting eyeholes such as the eyeholes 3; for example Figs. 16 and 17 indicate an element 21, analogous to the element 1 for forming parallel links, which has not one pair of eyeholes such as 3 but two pairs of eyeholes 23 with the eyeholes of each pair abutting, in such a way as to define three parallel segments 21B each a distance apart which constitute three links and three bridges, an intermediate one 21C and extreme ones 21E, whose edges 21A are brought together in forming the links and optionally welded together. In this case chains are formed which have triplets of parallel links 21B constituted by these very segments 21B and the links 21B of the contiguous elements 21 are connected by means of pairs of single links 25 corresponding to the links 5. The arrangement can also be multiplied, in the sense that even more than two pairs of eyeholes 23 can be provided, so as to make up so to speak mat-like links or equivalents.

It is understood that the drawing shows only an illustrative embodiment given solely by way of practical demonstration of the invention, it being possible for said invention to be varied in respect of shapes and arrangements without thereby departing from the scope of the concept underlying said invention. The presence of any reference numbers in the appended claims has the purpose of facilitating the reading of the claims with reference to the description and the drawing, and does not restrict the scope of protection represented by the claims.

## Claims

1. A method of forming a decorative chain, comprising: the blanking out, from a semifinished metal strip, of elements (1; 11; 21) having at least one pair of parallel eyeholes (3; 13; 23) defining longitudinal segments (1B, 11B; 21B) and transverse bridges or crossties (1C, 1E; 11C, 11E;

21C, 21E), one at an intermediate position and two at the ends; the bending over of said elements to bring the two extreme crossties together and thus define parallel links connected by the crossties; and the connecting together of elements having parallel links by means of single closed links (5; 25) to engage the crossties of contiguous elements having parallel links.

2. The method as claimed in the preceding claim, wherein the strips from which the single elements (1; 11; 21 and 5; 25) are taken are laminar and bent, respectively solid in cross-section.
3. The method as claimed in the preceding claims, wherein bent extensions (11F) are formed in the crossties (11C; 11E) to complement said crossties.
4. The method as claimed in the preceding claims, wherein the extreme crossties (1E; 11E, 21E) are welded along the edges (1A; 11A; 21A).
5. The method as described and illustrated, and for the objects specified.
6. A decorative chain produced: from elements having parallel links (1B; 11B; 21B) connected by crossties (1C, 1E; 11C, 11E; 21C, 21E) defined by paired eyeholes (3; 13; 23); and from elements having single links (5; 15 etc.).
7. The decorative chain as claimed in claim 6, comprising extensions (11F) formed from the crossties in the eyeholes, and bent over to complement said crossties.

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Fig. 1

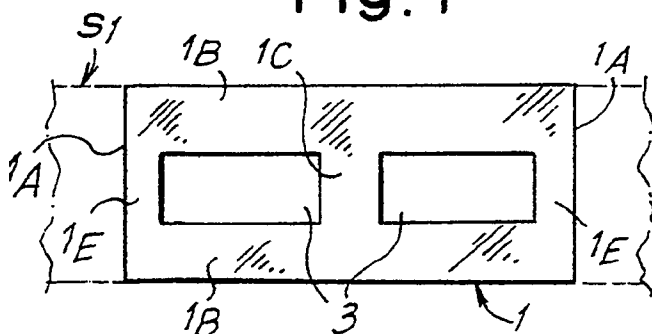


Fig. 2

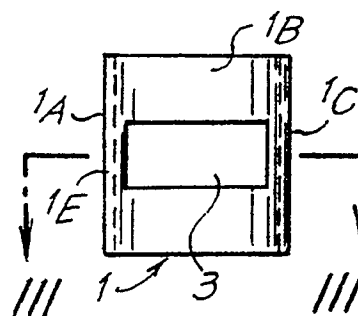


Fig. 4

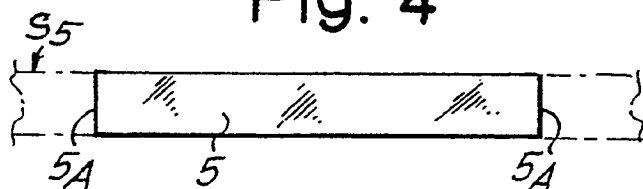


Fig. 3

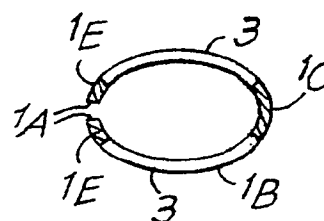


Fig. 5

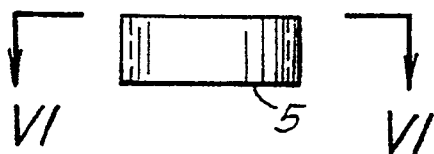


Fig. 6

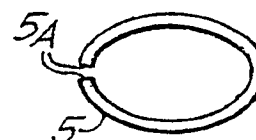


Fig. 7

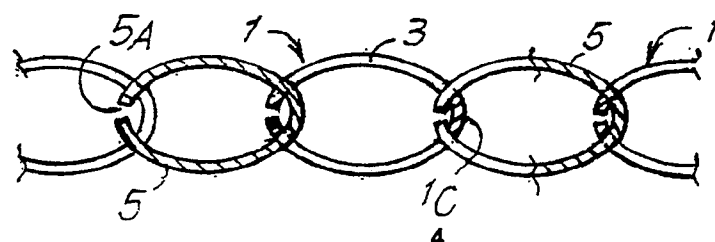
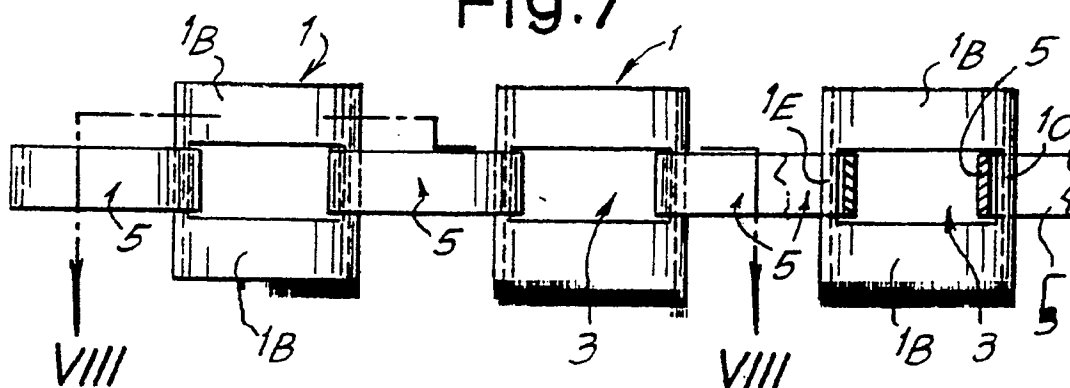


Fig. 8

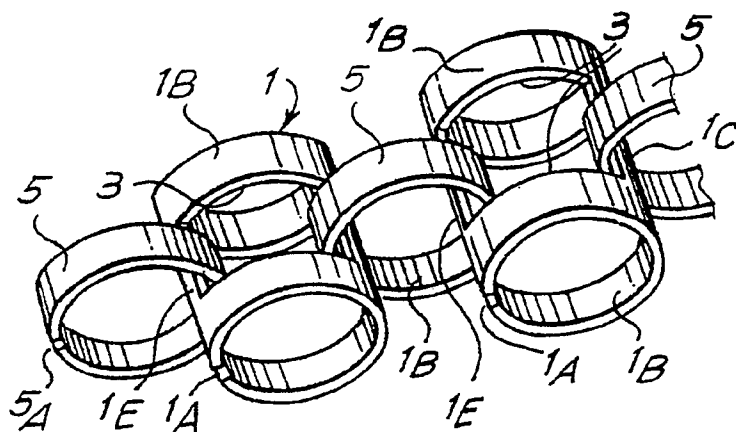


Fig. 9



Fig.10

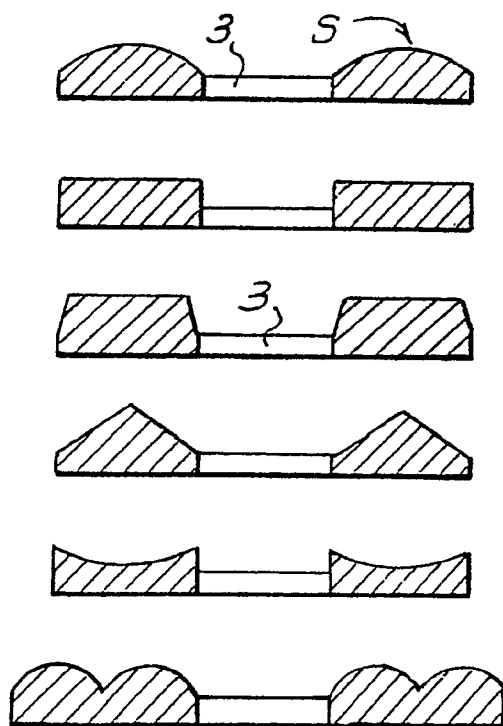
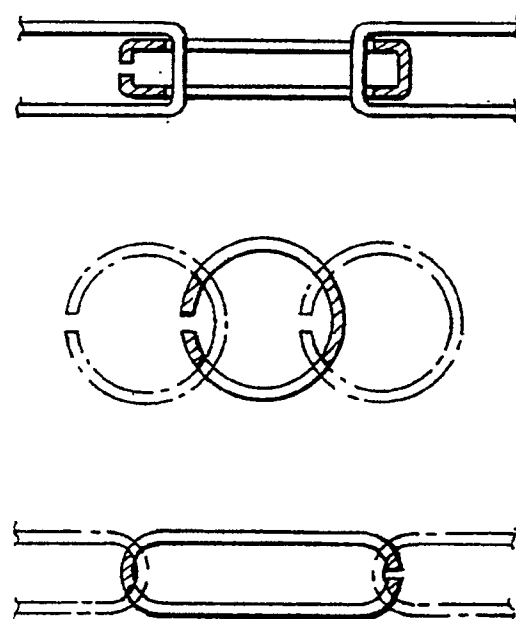


Fig.11

Fig.12



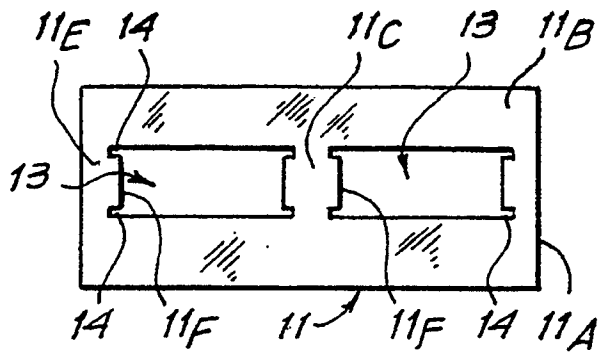


Fig. 13

Fig. 15

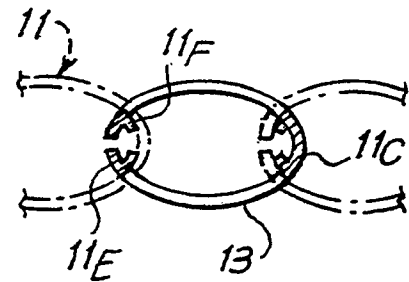


Fig. 14

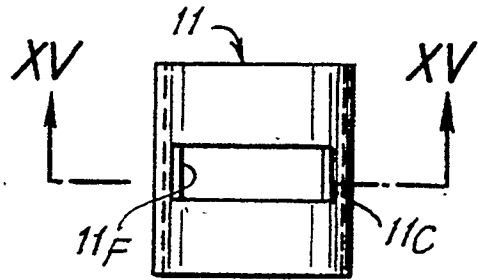


Fig. 16

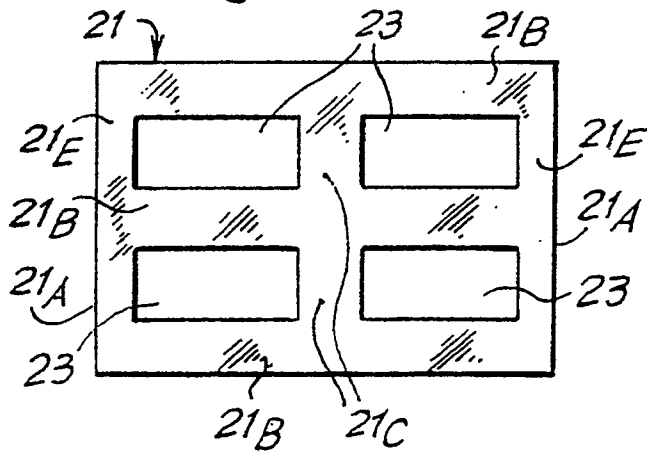
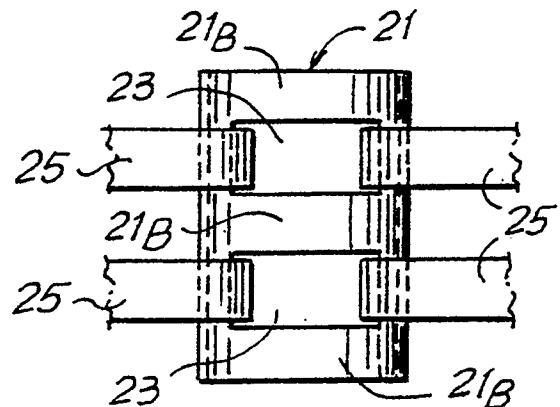


Fig. 17





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# EUROPEAN SEARCH REPORT

Application Number

EP 91 83 0247

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. CL.5)
X	GB-A-888 789 (GAY FR RES) * the whole document *	1, 2, 5, 6	A44C11/00
A, P	EP-A-0 404 735 (UNO-ERRE ITALIA) * column 1, line 5 - column 2, line 45; figures 1-5 *	1, 2 4-6	
A	US-A-2 505 169 (J. BIKOFF) * the whole document *	1-3 5-7	
			TECHNICAL FIELDS SEARCHED (Int. CL.5)
			A44C B21L
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 25 SEPTEMBER 1991	Examiner GARNIER F, M, A, C.
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

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