

Extendable Modular Jewel with Slotted Arms**Text of the Description**

5 [0001] This invention refers to a jewel or jewelry article that can change its dimensions at any time without adding or removing objects, through a simple action by a wearer who, by manually stretching or contracting, changes the relative position of the elements that make up the jewel or jewelry
10 article.

[0002] The article can take various open or closed forms upon itself and can, for example, be an adaptable ring suitable for fingers of different sizes, as well as a bracelet, a pendant, or an earring, but it can also be used as a decorative element or as a size-adjustable container, for example, a napkin holder or scarf.

[0003] Jewelry objects of this type are currently known and are described, for example, in documents DE9100430 or EP1911366.

20 [0004] These documents describe jewelry objects that vary the dimensions of the article itself by moving from a closed (or contracted) condition to an open (or extended) condition.

[0005] Document US 9486041, owned by the applicant, discloses a jewel made of a band of predetermined width comprising a plurality of modular elements and adjustable between a contracted condition and an extended condition, wherein the said width has different values along the overall extension of the jewelry article.

[0006] This allows for a high aesthetic result thanks to a gradual change in dimensions and allows to obtain a jewelry
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article that is durable and aesthetically pleasing in various configurations of the same.

[0007] The jewelry article subject to the invention is therefore feasible in a circumferential form such as a ring or bracelet or in an arched or linear form such as a pendant or earring, varying the dimensions and the number of elements composing it but always in accordance with the inventive concepts characterizing the invention.

[0008] A specific form of the jewel involves that the jewelry article is made by interconnecting an arbitrary number of arms reciprocally hinged in an oscillating manner around one or more hinging axes, in such a way as to make said jewelry article adjustable in any position between a limit contraction position and a limit extension position, each arm defining a plurality of hinging zones including a seat for engaging a connecting element among which a central hinging zone interposed between at least two further lateral hinging zones positioned towards the ends of the arm.

[0009] The arms may have a substantially flat surface that constitutes part of the surface of the jewel intended as the surface which come into contact with the wearer. Alternatively, said arms can have an arched profile along at least one of the directions in which they develop. Additionally, one or more support elements for housing precious stones or other decorative elements such as settings and/or claws can be included.

[0010] The applicant has noticed during the product development and improvement processes that the specific closed forms such as the circumferential shape as a ring or bracelet sometimes suffer from problems in the dynamics of the jewel

during extension/contraction movements when the joint supporting these movements includes a plurality of cylindrical pins housed in seats with a circular section substantially coinciding with the cross-section of the pins themselves. In
5 facts, as mentioned, the article can be extended or contracted and therefore, in the case of closed forms, can be reduced or increased in diameter, for instance, shifting from a ring form to a bracelet form.

[0011] In particular, a certain difficulty in the reciprocal
10 movement between the arms that make up the jewel has been observed when in a closed form, i.e., when the jewel has a ring-like shape, such that excessive physical effort is required by the user to change the dimensions of the object with consequent lack of practicality of use and potential
15 situations of breakage during the act of expansion/reduction or after a repeated number of movements.

[0012] From the analysis of the behavior of the arms and of the articulations between the arms that allow the change of shape, it has been found that the change in the relative
20 position between the arms during the expansion (or contraction) phase in a three-dimensional space that is determined when the jewel has a circumferential shape involves a bending of each of the individual arms along a longitudinal axis of the same; the arms, linear or quasi-linear in shape, are
25 thus forced to assume an arched or more arched shape which increases the frictions amongst the arms and/or the connecting elements and consequently the contact forces between the components of the jewel, making the reciprocal movement difficult and thus opposing the expected functioning of the
30 mechanism intended as the capacity of the jewel to be moved by the wearer without excessive effort. This is at least

partially related to the different radii of the two overlapping annular bands that are formed by the juxtaposition of a predefined number of arms, in combination with the reciprocal spreading movement of said arms, which are articulated
5 to each other to form the jewelry in a closed form. The increased friction causes The increase in friction means that the force required to move the jewel is not constant but varies depending on the specific condition of its contraction, which makes it less practical to use as it is
10 desirable that the force necessary to change its geometry be constant regardless of the specific condition in which it is found.

[0013] In particular, the Applicant has found that these friction forces that oppose the movement are not uniformly
15 present in every portion of the arm but are greater in the longitudinally peripheral zones of the same, and this is attributed to the change in curvature of the individual arm that occurs concurrently with the contraction/expansion of the jewel in the form of a ring or bracelet, in conjunction
20 with the tendency to misalign between the seats of two overlapping arms, which results in greater resistance on the pins occupying such seats.

[0014] In addition to being impractical to use, another limitation observed is the excessive wear of the parts and thus
25 qualitative degradation over time.

[0015] Therefore, the scope of this invention is to create a jewelry article of variable dimensions that is durable and aesthetically pleasing as well as easy to use even in an open or extended condition, in which the movement of contraction or expansion is uniform and practical to operate
30 and to move, by means of appropriate features such that it

does not require being moved with forces that make it uncomfortable to the wearer and that compromise the joints with repeated use.

[0016] Another scope of this invention is to make the jewelry article adaptable to different users in terms of dimensions and taste.

[0017] Another scope of this invention is to achieve high aesthetic yield and to allow the use of gems of different sizes.

10 [0018] The invention achieves these and other objectives by means of a jewelry article as claimed in the independent claim while further features and variants are the subject of the dependent claims.

[0019] These and other features and advantages of this invention will become clearer from the following description of some exemplary executions illustrated in the attached drawing tables, where:

- Figure 1 presents different shape variants of an arm represented according to a first two-dimensional view and a second three-dimensional perspective view;
- Figure 2 reports two views of a plurality of five-hole arms respectively in extended and contracted configuration;
- Figure 3 shows a conceptual representation of a ring/bracelet comprising two annular bands each obtained from a replication of five-hole arms;
- Figure 3b shows three different variants of the invention, presenting for each variant a comparison between two possible extension conditions of the same jewelry, with the three variants differing in the configuration

of the slots of the arms in different circular portions thereof;

- Figure 4 reports a portion of Figure 3 with a schematic representation of some connecting elements;
- 5 - Figure 5 represents a portion of the jewel with claws prepared to accommodate precious stones set in them.

DETAILED DESCRIPTION

[0020] Also referring to the drawings cited in the attached
10 figures, a jewelry article 1 according to the present invention comprises a plurality of modular elements or arms 10 reciprocally hinged in an oscillating manner around one or more hinging axes 100 such that the said jewelry article 1 is adjustable to any position between a limit contraction
15 position 201 and a limit extension position 202. In each arm is defined a central hinging area 11 including at least one central seat 110 for engaging at least one connecting element 31 to connect additional arms 10', said central hinging area 11 being interposed between at least two further lateral
20 hinging areas 12, 13 located near the ends of the arm along a longitudinal direction B thereof, and in turn equipped with lateral seats 120, 130 for engaging additional connecting elements 32, 33. Said seats 11, 12, 13 for engaging a connecting element 31, 32, 33 comprise through-holes or slots
25 110, 120, 130 between two opposite surfaces of the arm, and the said connecting elements include articulation pins designed to engage in said through-holes.

[0021] As can be better seen from the embodiment described in accordance with the attached drawings, a plurality of
30 modular elements, also called arms or levers 10, is interconnected to form a mesh with connecting elements 31, 32, 33

that articulate the arms 10 to achieve a variable dimension geometry. Figure 2 illustrates the contracted form 201 and extended form 202 of such a planar plurality of side-by-side arms 10.

5 [0022] Each individual arm has an elongated shape and thus articulates along a longitudinal axis B, with a transverse direction/axis T orthogonal to B defining a plane in which the arm lies, and along whose normal axis the thickness of the arm itself is measured.

10 [0023] It is not to be excluded, in general, that the individual arm may have a shape that is not strictly planar but may develop on a curved surface, preferably curved along one or both axes B and T.

[0024] Although in the field of jewelry, it is common to use
15 arms with an odd number of holes, the present invention also applies when the number of holes is even, and thus the central hinging area 11 may contain two central hinging seats.

[0025] In the case of a closed-form jewel (Figure 3), a pair
20 of annular bands 20, 20' of predetermined width is formed comprising a plurality of elongated arms or modular elements, with at least one of said modular elements connected to at least two additional modular elements via at least two connecting points, the modular elements being articulated around each connection point in such a way that the jewelry
25 article is adjustable between a limit contraction condition 201, (Figure 2) and a limit extension condition 202 and can assume and maintain any position between these two limit positions.

[0026] Each arm presents a certain number of hinging areas
30 11, 12, 13 arranged along the longitudinal axis B; these areas work as seats for connecting elements such as pins

around which at least two arms 10, 10' are bound by a constraint that limits their reciprocal movement, allowing their mutual oscillation.

[0027] For the correct operation of the articulation mechanism, the number of seats defined in a single arm is greater than two, and, as already mentioned, it may be either even or odd. The example presented in Figures 2 and 4 refers specifically to five seats, each with a through-hole; however, the invention is applicable to a different number of such seats, and the benefits are similarly recognizable. In Figure 1, arms with 3, 5, 7, 9, and 11 holes are represented. The benefits of the invention are generally more evident as the number of seats along the individual arm increases.

[0028] The technical problem of making the contraction/expansion movement comfortable for the user is solved according to the characteristic whereby the through-holes have a shape of the through-opening that presents an oblong peripheral edge in at least one diametrical direction and arranged along an elongation axis having predefined lengths and preferably reciprocally different among the various engagement seats present on each single arm. An example of such a shape is indicated with reference number 4 in Figure 1. The need to guarantee an oscillatory movement between arms entails, in the first instance, that the connecting elements present a circular shape compatible with the shape of the through-holes. However, as mentioned, the Applicant has found that in the case of a closed form of the jewel as a ring or bracelet, such a configuration results in an overall dynamics of the contraction/extension movement such that the force required to extend the jewel from a position of maximum contraction to a position of maximum expansion is not con-

stant but increases approaching the position of maximum expansion, making the movement less convenient for a user.

[0029] With respect to the technical problem to be solved, the obvious variation of the relative dimensions of the through-hole and the associated connecting element paired with such a through-hole at the same shape does not solve the problem, as it is necessary to combine two opposing needs: to ensure a minimum resistance force between arms to prevent undesired expansions consider a ring that must maintain its shape when normally worn on a finger and to allow a user to change the dimensions with a moderate force without using any tools.

[0030] Advantageously, the realization of at least some holes in an elongated shape allows limiting the forces necessary for movement while ensuring that in every state of extension, a minimum friction force is present to prevent unwanted movements of the worn jewel.

[0031] In a possible variant, the elongation axis A (Figure 1) for at least one of the said holes of the same arm is substantially parallel to the longitudinal axis of the arm itself, being said longitudinal axis defined in accordance with the said longitudinal direction of the arm. At least some of the holes are thus elongated, i.e., they present a two-dimensional cross-section in the plane of the arm where one dimension is greater than the other, and in this specific embodiment, the predominant dimension is along an elongation axis that is parallel or coincident with the longitudinal axis of the arm.

[0032] In a further variant, the internal dimensions D of the individual holes measured according to the said longitudinal axis B vary according to a known progression of either a

linear or non-linear type, preferably increasing in the transition from the holes of the said central seat to the holes of the said lateral seat. In this sense, as can be seen from Figure 1, the dimension D increases from the central hole 110' to the most lateral hole 130' and similarly in the opposite direction from the central hole 110' to the most lateral hole 120'. It is preferable but not essential that the central hole 110' (or the two central holes of the central seat when the number of holes is even) has a circular shape as it guides the jewel in the articulation movement during expansion or contraction.

[0033] Taking, therefore, the central hole 110 or 110' as reference (in the case of arms with an even number of holes, the median point between the two holes of the central seat is used as a reference) and consequently the consecutive holes arranged alongside on the same arm towards the two ends 12 and 13 of the arm, the invention proves particularly advantageous when the elongation of the holes is more pronounced for the lateral seats compared to the central seat. A more elongated configuration for the lateral seats indeed allows avoiding the increase in frictions in the arm zones near such seats as a consequence of the deformation imposed on the arm when the jewel changes dimension.

[0034] This adjustment has been defined having observed that the peripheral zones of two arms interconnected by a common connecting element are more deformed during expansion and that the deformation of the two arms occurs along different directions, causing greater friction towards the connecting element when the hole is non-oblong.

[0035] Additionally, the elongation of the seats allows for the compensation of the misalignment that forms between the overlapping seats of two overlapping arms, with the two arms

exhibiting their respective longitudinal axes B of variable and increasing relative inclination with the expansion of the jewel.

[0036] Also in this configuration, as already described, it is preferable that the central hole 110' (or the two central holes of the central seat when the number of holes is even) have a circular shape as it guides the jewel in the articulation movement during expansion or contraction.

[0037] As a further consequence, the configuration of the holes as claimed herein has the effect of limiting the concavity of the surface of the ring/bracelet according to a direction perpendicular to the axis of wearing.

[0038] This configuration, also known as the "dome shape" of a ring, refers to a profile where the top part, which may host gem settings or decorative details, has a rounded and bulging shape that resembles the profile of a dome and offers a robust appearance which is often chosen for its comfort and the large surface that allows for various processing or settings. In other words, said dome shaping thus provides a concavity of the cross-section in the circumferential direction of the jewelry, and therefore the radius of the jewelry is slightly greater in the central area or the transversal section than in the peripheral areas.

[0039] Conversely, the opposite aesthetic form can be described as the form in which the cross-section is convex and therefore the radius of the jewelry is slightly greater in the peripheral areas than in the central area.

[0040] The applicant has observed, among the defects of known extendable jewelry, that in the absence of corrections, extendable jewelry tends to vary the cross-sectional shape by accentuating the convexity in the aforementioned terms,

especially near the condition of maximum extension. This undesirable effect can be compensated and controlled thanks to the slotting of the seats as described here. By appropriately choosing the shape of the slots, it is thus possible
5 to obtain flat or concave cross-sections or at least less convex than what would be the case without slotting the arms, depending on the design requirements of the ring designer.

[0041] According to a variant, the said elongated shape of the through-holes is planar and of the type presenting two
10 semicircles 41 and 42 facing each other from the concave side, with their respective centers arranged along the said elongation axis A, said semicircles being further connected by two joining lines, each of which connects a free end of the first semicircle with the free end of the second semi-
15 circle facing said free end of the first semicircle. This shape is preferable to an elliptical shape because it more easily accommodates a cylindrical pin; preferably, the two semicircles have equal radius, and such radius is slightly larger than the radius of a pin that acts as a connecting
20 element so that the cylindrical seat having as a section the semicircle can precisely accommodate the semi-portion of the pin housed in such a seat.

[0042] Preferably but not necessarily, the said two joining lines have the shape of a segment 43, 44 or a part of a
25 straight line that connects the two said free ends as claimed; alternatively, curved or skewed shapes can be provided.

[0043] According to a further variant, the distance M between the two median points of the elongation axis A of two adjacent holes of a single arm is constant. In this configura-
30 tion, the holes have a sectional shape symmetrical relative to a central point that coincides with the midpoint of the

elongation axis. For each hole, which can have a different shape compared to the adjacent hole on the same arm, a median point is therefore identified, and the distance between the median points of two adjacent holes on the same arm is constant. Alternatively, this distance between the median points of two holes may not be constant, at least for part of the holes of an arm; the choice of reciprocal distance can be made based on various physical parameters of the jewel such as, for example, the number of holes of each arm, the thickness of the single link/arm, the material with which the jewel is made, and other parameters that are experimented with during the prototyping phase of the jewel itself and thus replicable when the product is industrialized.

[0044] According to other variants of the invention, the length D along the said elongation axis A of a hole is also defined as a function of the thickness of the arm in which the said hole is formed and/or the physical and mechanical characteristics of the materials used for the construction of the arms 10, preferably in function of the friction coefficient detected between two arms in contact with each other when assembled to compose the jewelry article 1. The considered choice allows balancing the excessive wear of metals typically soft and generating tolerances that recover inclination of the axis misalignments of the axis in various opening and closing positions of the jewel.

[0045] According to a preferred embodiment, the jewel includes a first annular band 20' made for the juxtaposition of a known number of arms 10' and a second annular band 20 superimposed on said first annular band, with said second annular band also composed of a known number of arms 10 and said annular bands 20 and 20' being superimposed in such a way that for each hole of each arm, a hole of an arm of the

first annular band is substantially coaxial with a corresponding hole of an arm of the second annular band.

[0046] According to a further variant, preferably combined with the variant described in the previous paragraph, at least some of the arms included in the said first annular band (20') and at least some of the arms of the said second annular band (20) have the same configuration in terms of arrangement and/or conformation of the engagement seats present in the arms of the two said bands. This embodiment thus envisages the same type of arms, intended with reference to the geometric shape of the engagement holes as already described, recurring in the constitution of the two overlapping annular bands which, when articulated by means of appropriate pins, constitute the extendable structure of the jewel.

[0047] Such configuration is advantageous for several reasons, for example because it limits the different types of parts involved, because it avoids the use of hooks or other forms of hinging known in the art (e.g. document GB983842,) and typically integrated in the arms of the band in contact with the body, and because it leaves the freedom to use cylindrical-bodied and customizable-headed pins that are suitable for hosting precious stones on the visible end, always offering the possibility to realize mechanisms of extreme precision for a movement of contraction/expansion comfortable in use.

[0048] According to a further variant, which can be freely combined with many other embodiment of the invention, the articulation pins or connecting pins 31, 32, and 33 are arranged along an axis 100 positioned perpendicularly to the plane of the bearing surface and can be welded and/or riveted and/or made as a single piece with one or more of the arms

that make up the jewelry article. According to this embodiment, when the connecting pins are integral with the radially inner arms, the slots are provided only in the radially outer arms; conversely, when the connecting pins are integral with the radially outer arms, the slots are provided only in the radially inner arms.

[0049] Although in this detailed description reference is made to the interconnection of a modular element (arm) with five other specimens of the same overlaid on it, this is neither limiting nor obstructive to other executive forms in which a single element may be connected to a greater or lesser number of other elements. For example, the characteristics of the invention and its implementation are perfectly compatible with a variant in which each specimen of arm cooperates with a number of three or more other elements, also in an even number.

[0050] The modular elements arms are articulated among each other according to hinging axes 100 around each point of connection, i.e., axes perpendicular to the direction of wearing and at the same time perpendicular to the bearing surface, i.e., the surface in contact with the body of the wearer.

[0051] According to an embodiment, at least one of said modular elements 10 includes at least three connection points for connecting to three further modular elements, the connection point being suitable to connect said at least one modular element to a further modular element and at least one intermediate portion interposed between a first connection point for connecting to a first further modular element and a second connection point for connecting to a second further modular element of said three connection points.

[0052] In general, at least part of the arms that constitute the circumference of the closed jewelry present the slots in the engagement seats. In the variant in which all the arms of the entire circumference are provided with slots and the slot configuration is the same for all arms, an extension of the jewelry will be achieved that maintains the original contracted shape but with a larger radius; conversely, differentiated expansions can be obtained in relation to certain sectors of the overall circumference of the jewelry, due to the different friction forces between the sectors made with different slot configurations.

[0053] Also with reference to figure 3b, in some variants, the invention provides for making the jewelry comprising multiple circular sectors with different slot configurations of the arms to achieve a progressive variation of friction forces between the arms of the various sectors and consequently a progressive variation of the shape during the extension of the jewelry.

[0054] In figure 3b, 1 indicates a piece of jewelry in the contracted form while 1' indicates the same jewelry but in an at least partially extended form to compare the shape variation obtainable thanks to the combination of arms with slot configurations that change in different circumferential sectors of the object. As mentioned, the slotting of the arms allows for reducing friction forces during the extension movement, and this advantage can be further exploited to vary the shape the jewelry assumes when it extends or contracts by providing different slot configurations among the various arms that compose at least one of the two annular bands 20 and 20'.

[0055] In particular, the left part of figure 3b shows an extended condition where the arms in the 90° and 270° sectors

have slots of greater width than those provided in the arms of the 0° and 180° sectors. It can be observed that in this case a configuration with a progressive variation of the slots along the perimeter is schematized, without excluding
5 other variants with, for example, only two types of slotted arms.

[0056] Similarly, the right part shows two states of extension, where the arms at 0° and 180° are not provided with slots: as a result, the jewelry does not increase in size in
10 the vertical direction while it expands in the horizontal direction.

[0057] The object in the center part extends while maintaining a substantially circumferential shape, however, it is useful to observe that the different slots cause a different
15 displacement of the arms and therefore a different distribution of the same along the circumference. This is advantageous, for example, in cases where it is desired to maintain the density of precious stones in the exposed part without sacrificing the product's ability to extend.

[0058] Different variants can be obtained including one or
20 more claws, settings, or similar parts for housing precious stones or other decorative elements, said parts being used to accommodate precious stones or other decorative elements even of shapes and sizes also reciprocally different among
25 the specimens that create the jewelry article.

[0059] Throughout the description, similar reference numbers may be used to identify similar elements.

[0060] While various aspects of the embodiments are presented in the drawings, the drawings are not necessarily to scale
30 unless specifically indicated.

[0061] It will be readily understood that the components of

the embodiments as generally described herein and at least partly illustrated in the attached figures could be arranged and designed in a wide variety of different configurations.

[0062] Therefore, the following description, as also represented in the figures, is not intended to limit the scope of this invention but is merely representative of some of the possible embodiments.

[0063] This invention can be implemented in other specific forms without departing from its spirit or essential characteristics.

[0064] The embodiments described should be considered in all respects only as illustrative and not restrictive.

[0065] All changes that fall within the meaning and range of equivalency of the claims should be included within their scope.

[0066] Reference in this description to features, advantages, or similar language does not imply that all the features and benefits must be present in any single embodiment of the invention.

[0067] Rather, the language referring to features and advantages is intended to mean that a feature, an advantage, or a specific characteristic described in relation to one embodiment is included in at least one embodiment of the present invention.

[0068] Consequently, discussions of the features and advantages, and similar language throughout this description may, but do not necessarily have to, refer to the same embodiment.

[0069] Moreover, the features, advantages, and characteris-

tics described of the invention can be combined in any suitable way in one or more embodiments.

[0070] In other cases, additional features and benefits may be recognized in certain embodiments that may not be present
5 in all embodiments of the invention.

[0071] Reference throughout this description to "an embodiment," "a variant," "an executive form," or similar language means that a particular function, structure, or characteristic described in connection with the embodiment indicated
10 is included in at least one embodiment of the present invention.

[0072] Therefore, references to "an embodiment," "a variant," and similar language throughout this description may, but do not necessarily, refer to the same embodiment.

15 [0073] The components of the embodiments as generally described in this document and illustrated in the attached figures could be arranged and designed in a wide variety of different configurations.

[0074] Therefore, the following more detailed description of various embodiments, as represented in the figures, is not
20 intended to limit the scope of this description but is merely representative of some of the embodiments.

[0075] The present invention can be implemented in other specific forms without departing from its spirit or essential
25 characteristics.

[0076] The scope of the invention is therefore indicated by the attached claims rather than by this detailed description.

[0077] In the preceding description, specific details of various embodiments are provided. However, some embodiments may
30 be realized with fewer than all these specific details.

[0078] In other cases, some methods, processes, components, structures, and/or functions are described not in full but only to the minimum detail useful to understand the various embodiments of the invention, for the sake of brevity and
5 clarity.

[0079] Although specific embodiments of the invention have been described and illustrated, the invention should not be limited to the specific forms or arrangements of parts so described and illustrated, which are merely exemplary forms
10 of execution of it. Various variants are possible, all within the reach of a person skilled in the art, without thereby departing from the scope of protection of the invention itself, which is defined by the following claims.

CLAIMS

1. Jewelry article (1) comprising a plurality of modular elements or arms (10, '0') reciprocally hinged in an oscillating manner around one or more hinging axes (100) such that said jewelry article is adjustable to any position between a limit contraction position and a limit extension position,
- wherein each arm defines a central hinging area (11) comprising at least one central seat (110) for engaging at least one connecting element (31) to connect additional arms, said central hinging area (11) being interposed between at least two further lateral hinging areas (12, 13) located in proximity to the ends of the arm in a longitudinal direction (B) thereof and further provided with lateral seats for engaging additional connecting elements (32, 33), wherein said seats for engaging a connecting element (31; 32; 33) comprise holes or slots (110; 120; 130) passing through two openings defined in two opposed surfaces of the arm, and wherein said connecting elements comprise articulation pins designed to engage in said passing holes (110; 120; 130),
- characterized in that**
- said passing holes (110; 120; 130) of at least one arm (10;10') have an oblong peripheral edge in at least one diametrical direction arranged along an elongation axis (A) and said passing holes have predetermined lengths (D) that are preferably different from one another among the different hinging areas (11; 12; 13) present on each single arm (10; 10').
2. Jewelry article according to claim 1, wherein said elongation axis (A), for at least one of said holes of one

single arm, is substantially parallel to the longitudinal axis (B) of said arm, said longitudinal axis being defined according to said longitudinal direction of said arm.

- 5 3. Jewelry article according to claim 1 or 2, wherein at least part of the arms (10, 10') have, in each arm, a total number of four or more seats for engaging a connecting element, each provided with a passing hole.
4. Jewelry article according to one or more of the preceding
10 claims the internal dimensions of the holes (D) of a single arm, measured according to said elongation axis (A), vary according to a known and predefined progression, of a linear or non-linear type, preferably with increasing values in the path between the hole of said
15 central hinging areas (11) and the holes of said lateral hinging areas (12, 13).
5. Jewelry article according to one or more of the preceding claims, wherein the planar shape of said openings is of the type presenting two semicircles (41, 42) facing each
20 other from the concave side and having their respective centers arranged along said elongation axis (A), said semicircles being further connected by two joining lines, each of which connects a free end of the first semicircle with the free end of the second semicircle
25 facing said free end of the first semicircle.
6. Jewelry article according to the preceding claim, wherein said two joining lines have the shape of a segment (43; 44) or a straight portion connecting said two free ends as claimed above.
- 30 7. Jewelry article according to one or more of the preceding claims, wherein the distance between the two median

points of the elongation axis (A) of two adjacent holes of a single arm is constant i.e. wherein the centers of each hole are equidistant for each adjacent hole.

8. Jewelry article according to one or more of the preceding
5 claims, wherein the length of said elongation axis (A) of a hole is also defined as a function of the thickness of the arm in which said hole is formed.
9. Jewelry article according to one or more of the preceding
10 claims wherein the length of said elongation axis (A) of a hole is also defined as a function of the physical and mechanical characteristics of the materials used for the construction of the arms, preferably as a function of the friction coefficient detected between two arms in contact with each other when assembled to compose the
15 jewelry article.
10. Jewelry article according to one or more of the preceding claims comprising a first annular band (20'), made for the juxtaposition of a known number of arms (10'), and a second annular band (20) superimposed on said first
20 annular band (20'), said second annular band (20) also being composed of a known number of arms (10) and said annular bands being superimposed in such a way that, for each hole of each arm, a hole of an arm of the first annular band is coaxial with a corresponding hole of an
25 arm of the second annular band.
11. Jewelry article according to the preceding claim wherein at least some of the arms included in the said first annular band (20') and at least some of the arms of the said second annular band (20) have the same configuration
30 in terms of arrangement and/or conformation of the engagement seats present in the arms of the two said bands (20, 20').

12. Jewelry article according to claim 10, wherein said first annular band (20') and/or said second annular band (20) present one or more circumferential band sectors in which the configuration of the arms among different ones of said sectors is mutually different in terms of the slotting of the engagement seats in the arms of said two bands (20, 20').
13. Jewelry article according to one or more of the preceding claims wherein said articulation pins (31, 32, 33), arranged perpendicular to the plane of the bearing surface, are welded and/or riveted and/or made as a single piece with one or more of the arms (10, 10') that make up the jewelry article.
14. Jewelry article according to one or more of the preceding claims wherein at least some of said arms (10, 10') have a substantially flat surface that constitutes part of the bearing surface.
15. Jewelry article according to one or more of the preceding claims, comprising one or more support elements for housing precious stones or other decorative elements (50).
16. Jewelry article according to one or more of the preceding claims, characterized in that the said arms are not freely detachable from the assembled jewelry without the use of tools to remove the connecting elements (31; 32; 33) when engaged in their respective engagement seats (110; 120; 130).