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A. BLUMSTEIN

3,386,240

BEAD CHAIN LINK

Filed April 13, 1966

FIG. 1

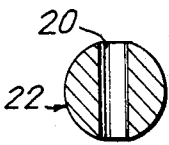
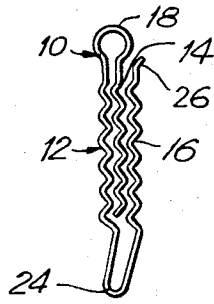


FIG. 1A

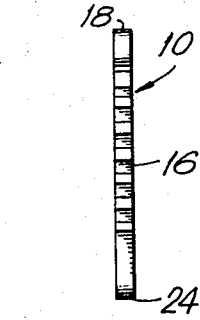


FIG. 4

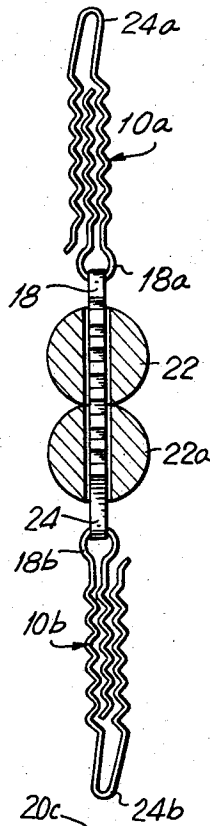
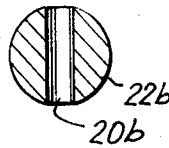


FIG. 5

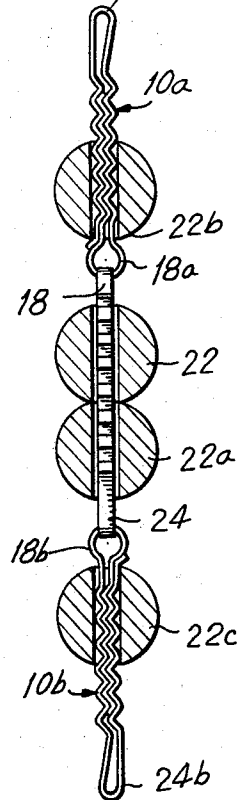
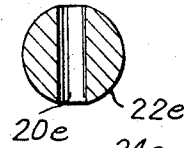


FIG. 2

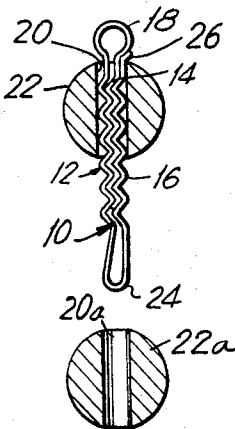
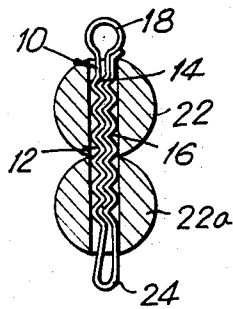


FIG. 3



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**BEAD CHAIN LINK**  
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 6 Claims. (Cl. 59—78)

This invention relates to the stringing of beads to form necklaces and bracelets and the like, and more particularly to a chain link which is fixedly and non-slidably lockable in the bore of a bead and is adaptable to be interlinked with similar link to form a chain of stringed beads.

Heretofore, the stringing of beads such as pearls, for example, has been accomplished by the use of fabric threads such as cotton or nylon. The use of fabric threads, however, is objectionable where the string or chain must withstand a substantial tensile force. To overcome the inadequacy in the tensile strength of fabric threads, wire threads such as silver or gold wire have been utilized. In such instances, however, to prevent the individual beads from sliding along the wire thread and to fix their position thereon, the wire thread was knotted between the beads or soldered to the beads in their holes. Such arrangements have been found to have been unsatisfactory not only because of the difficulty in disassembling the beads from the chain, but also because of the high stress concentrations in the wire thread at the knotted portions.

In order to overcome the above disadvantages in conventional methods of stringing beads, it has been found necessary to use wire links on which the beads are anchored, with the individual wire links being interlinked to form a chain. In such configurations each link has at its end a loop which is interlinked with the loop of the adjacent link, to form a chain. In order to withstand the applied tensions, however, the links have had to be anchored to the beads, by embedding bent ends in a bead molded around the links, or soldering the ends of the links together, which made for difficulties in assembly and in increased cost of manufacture.

The present invention is directed to the provision of a bead chain comprising a plurality of links each of which is insertable through a hole in the bead and is positively and non-slidably locked in the bead by virtue of its configuration and of its manipulation in assembly with a bead and adjacent similar links.

In accordance with the principles of the present invention there is provided a link comprising a relatively narrow strip of flexible and resilient metal bent into a substantially narrow elongated main strip portion with a leg extending at each end thereof, each of the legs being bent so as to extend over each other and the main strip portion. The main strip and the legs are corrugated at the portions at which they overlap, to form a saw tooth shape in cross section such that when the main strip and legs are pressed together they interlock at their corrugated portions.

The outer end of one leg is bent arcuately to form a circular loop having a diameter greater than the width of the hole in the bead, or, when the hole in the bead is circular, greater than the hole diameter. This leg is bent to overlie the main strip portion so that the corrugated portions of the leg and main strip are in interlocking relationship. The second leg is bent over to overlie the first leg at its corrugated portion and to form a wedge shaped apex end which is sufficiently open to permit one of the legs to be looped therethrough.

The link of the present invention is arranged to be inserted through a bore formed in the bead, the bore diameter being slightly greater than the combined thickness of the main strip and the two legs. The length of the link is such as to enable the mounting of two beads along

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the length of the corrugated portions thereof, with the substantially circular loop protruding at the end of one of the mounted beads, and the apex loop end protruding at the end of the second mounted bead.

5 In assembling the link to the bead, the folded legs are compressed together with the main strip and then inserted, apex end first, through the hole in the bead. The bead is then moved along the link toward the circular looped end until its periphery rests against the circular loop of the link which has a diameter greater than that of the bead hole and hence prevents the bead from slipping off the link. A second bead is then mounted on the link in a manner similar to that of the first bead, with the second bead coming to rest against the first bead and allowing the apex looped end of the link to protrude out of the second bead.

Second and third links are then respectively interlinked with the first link, which has a pair of beads already mounted thereon, in the following manner. The second link is looped at its circular loop end through the first link at its protruding circular loop end, and the third link is looped at its circular loop end through the first link at its protruding apex loop end. Thereafter, pairs of beads are mounted on the second and third links, in a manner similar to that of the first link, through the available apex loop ends of the second and third links respectively. The above process of interlinking and mounting of a pair of beads on each link is continued until a chain of mounted beads of a desired length is formed.

The features of the invention which are believed to be novel are set forth with particularity in the appended claims. The invention, itself, however, both as to its organization and method of operation, together with further objects and features thereof may best be understood by reference to the following description taken in conjunction with the accompanying drawings wherein:

FIG. 1 is a view showing the invention link aligned for assembly with a bead, the link being shown in side elevation and the bead in section.

FIG. 1A is an elevation view at right angles to the arrangement shown in FIG. 1.

FIGS. 2 and 3 are sectional views illustrating successive steps in mounting a pair of beads on the invention link.

FIG. 4 is a sectional view of a pair of beads assembled to a link and showing adjacent links engaged in the circular loop end and apex loop ends respectively.

FIG. 5 is a sectional view of the assembled beads and link showing the successive steps of mounting successive beads on the adjacent links in the manner similar to the assembly of the first link as shown in FIGS. 1-3.

Referring to FIG. 1 of the drawing, the link 10 is a relatively narrow strip of flexible and resilient metal, and may, for example, be of a precious metal or plated therewith. Link 10 has a main strip portion 12 and a pair of legs 14 and 16 extending from main strip portion 12. Leg 14 is bent arcuately to overlie main strip portion 12, to form a substantially circular loop 18 having a diameter greater than the width or diameter of the passage 20 in bead 22. Leg 16 is bent over to overlie previously bent-over leg, 14, to form a wedge shaped apex loop 24 which has a width sufficiently narrow to allow passage through bore 20 of bead 22 while maintaining sufficient space at the bottom of the interior of the V-shaped loop formed at apex 24 to permit the receiving therethrough of a subsequent link, similar to link 10, at its circular looped end 18b. Main strip 12 as well as legs 14 and 16 are corrugated at the portions thereof that engage each other when compressed together as hereinafter explained.

To insert link 10, leg 14 is pressed into engagement with strip 12, and leg 16 into engagement with leg 14,

by the insertion of apex end 24 into passage 20 of bead 22. Bead 22 is then moved along link 10 until it rests against circular loop 18, and is thereafter restrained from slipping off link 10 because the diameter of loop 18 is larger than the width of bead passage 20 and also because leg 16 has a protruding end portion 26 bent so as to prevent it from passing through passage 20.

A second bead 22a, as shown in FIGS. 2 and 3, is then mounted on the remaining portion of link 10 in a manner similar to the mounting of bead 22. The drawings in FIGS. 1-5 show a link having a length sufficient to accommodate two beads but it is understood that link 10 may be designed to have a length sufficient to accommodate more than two beads, depending on the relative size of the beads and the overall length of the bead chain formed by interlinking links 10 as hereinafter explained. When the main strip 12 is compressed together with overlying legs 14 and 16, by virtue of the insertion of link 10 into bead passage 20 from wedge shaped apex loop end 24, bead 22 is thereby positively secured to link 10 by virtue of the spring action of strip 12 together with legs 14 and 16. Due to the sawtooth shape of the overlapping portions of strip 12, and legs 14 and 16, respectively, bead 22 tends to remain in a non-slidable locked position with respect to link 10. If it is desired to remove beads 22 and 22a from link 10, this can be done by further compressing legs 14 and 16 together with strip 12, thus reducing the effective width of the combination of strip 12 and legs 14 and 16 to permit bead 22 to slide off link 10.

After beads 22 and 22a have been mounted on link 10 as shown in FIG. 3, second and third links 10a and 10b are interlinked with link 10 in the following manner. Link 10a is looped, at its circular loop end 18a, through circular loop 18 of link 10, and link 10b is linked at its circular loop 18b through apex loop 24 of link 10. As pointed out above, bead 22 is prevented from sliding off link 10 by virtue of circular loop 18. Since circular loop 18b is now interlinked with wedge shaped apex loop 24, bead 22a is similarly restrained from sliding off link 10.

Beads 22b and 22c are then respectively mounted on links 10a and 10b respectively in a manner similar to the mounting of bead 22 on link 10. Thereafter, beads 22d and 22e are further mounted on links 10a and 10b respectively in the manner of the assembly of bead 22a with link 10 as shown in FIG. 5. The above process of mounting a pair of beads on each link and then looping the ends of the link with other links and mounting beads thereon, is successively repeated until there is formed a chain of mounted beads of a desired length.

While there has been shown a particular embodiment of the present invention, it will be understood that it is not wished to be limited thereto, since modifications can be made in the size and shape of the links, and it is contemplated in the appended claims to cover any such modifications as fall within the true spirit and scope of this invention.

What is claimed and desired to be secured by U.S. Letters Patent is:

1. A link arranged to be inserted in an apertured bead to connect the bead in a string of similar beads, said link comprising a length of flexible and resilient material bent to form a main strip section, a first leg extending from one end of said main strip and bent arcuately to overlie a part of said main strip thereby forming an arcuate loop end to said link, a second leg extending from the other end of said main strip portion and bent to overlie

a part of said first leg thereby forming a wedge shaped apex loop end, said main strip section and said first and second legs each having a corrugated surface extending over the respective portions of said main strip section, and said first and second legs which overlie each other, said wedge shaped loop end being adaptable to be inserted into said bead aperture, said arcuate loop end and said wedge shaped end being adaptable to being successively interlinked with other links similar to said link.

2. In combination, at least one apertured bead and a link extending through the bead aperture and comprising a length of a flexible and resilient material bent to form a main strip section, a first leg extending from one end of said main strip section and bent arcuately to overlie a part of said main strip section thereby forming an arcuate loop end to said link, a second leg extending from the other end of said main strip section and bent to overlie a part of said first leg thereby forming a wedge shaped apex loop end to said link, said main strip section and said first and second legs each having a corrugated surface extending over the respective portions of said main strip section, and said first and second legs which overlie each other, said wedge shaped loop end being adaptable to be inserted into said bead aperture, said arcuate loop end and said wedge shaped end being adaptable to being successively interlinked with other links similar to said link.

3. In combination a bead chain comprising a plurality of interlinked links, with each of said links extending through the aperture of at least one bead mounted thereon, each of said links comprising a length of a flexible and resilient material bent to form a main strip section, a first leg extending from one end of said main strip section and bent arcuately to overlie a part of said main strip section thereby forming an arcuate loop end to said link, a second leg extending from the other end of said main strip section and bent to overlie a part of said first leg thereby forming a wedge shaped apex loop end to said link, said main strip section and said first and second legs each having a corrugated surface extending over the respective portions of said main strip section, and said first and second legs which overlie each other, said wedge shaped loop end being adaptable to be inserted into said bead aperture, said arcuate loop end and said wedge shaped end being adaptable to being successively interlinked with other links similar to said link.

4. A link as defined in claim 1 wherein said arcuate loop end has a diameter greater than the bore dimension of said bead aperture.

5. A link as defined in claim 1 wherein said link has a length greater than the peripheral diameter of said bead.

6. A link as defined in claim 1 wherein said link has a length greater than twice the peripheral diameter of said bead.

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