Charm Bracelet Connector

Field of the Invention

The invention relates to jewellery and, in particular, to jewellery charm connectors.

The invention has been developed primarily for use in connecting charms to elastic bracelets and will be described hereinafter with reference to this application. However, it will be appreciated that the invention is not limited to this particular field of use.

Background Art

Bracelets have long been known to be worn around the wrist of a wearer. The bracelets when in use form a closed loop able to move in a limited fashion about the wrist. The closed loop in some types of bracelets includes a clasp or other mechanical attachment means allowing the bracelet to releasably connected in forming the loop. Where this occurs, the bracelet is often a chain of some description formed from a metal or alloy.

Charms are small tokens or widgets that are able to be connected to the chain of metal bracelets. When a plurality of charms are added to the bracelet, these are spaced apart along the length of the chain and many charms can be attached, as desired. The charms themselves typically include a loop attachment or other means to allow the charm to be connected to the chain bracelet. A simple ring or annulus is often used to interconnect charm to a chain-link of a bracelet. The ring, for example a split ring, can be simply clamped together under a spring force or the like to the ring, or it could be soldered.

In another alternative, the ring can be connected to both the charm and the bracelet and then overlapped slightly and clamped together to lock it and the charm to the chain-link on the bracelet. There are also other cases where charms can be attached to chain-link of bracelets by using a small clasp such as those formed by a lever arm resiliently biased by a spring into a closed position. In these embodiments, the charms can be removed and replaced as desired by actuating the clasp.

Other types of bracelets include elastic bracelets. These are formed from an elastomeric materials and are generally in the form of a permanently closed loop formed from one or more elastic strands. The loop is able to be radially expanded a predetermined amount so as to allow it to be passed over the hand of a wearer and disposed about the wrist. The elastomeric loop can include beads or other decorative articles threaded along the loop. The beads may be formed from any preferred material including metals alloys, plastics or natural products such as would or pearls.

In this way, the beads cover the elastomeric loop and rest against a user's wrist area. The total number of beads is often limited by the resting size of the elastomeric loop with threaded beads each having an annualar thickness. In the case of elastic bracelets, these are often advantageous for use with wearers that may expose the bracelets to physical damage such as stretching by children. Rather than a metal linked chain bracelet which has very limited ability to stretch in the case, for example, of being hitched or unintentionally caught on an object and the bracelet can fail at its weakest link. Elastic bracelets, however, have the advantage of being able to stretch and provide better resistance against such physical damage.

Metallic, plastic or other charms are also known to be used with elastic bracelets. In addition to the use of clasps and metallic jump rings that are clamped, soldered or pressed slightly overlapped, charms are known to be attached to elastic bracelets by means of a simple string tie arrangement. Here, a string is tied between the charm and the elastic loop intermediate adjacent beads.

Unfortunately, each of the known means of connecting the charms suffer from various disadvantages. For example, jump rings are known to stretch and become disconnected from chains or the elastic loops and they can also require some precision in manual manipulation to engage them between the bracelet and the charm. This is particularly the case when a charm becomes hitched or entangled with an object unintentionally. Whilst clasps are much more difficult to dislodge, they are relatively large and include complicated mechanisms which are susceptible to breaking, particularly resiliently biasing means like spring arms. In the case of soldered jump rings or split rings, these offer a relatively sturdy solution but require quite precise

soldering and do not offer any practical ability to interchange charms once they are soldered on.

Genesis of the Invention

The genesis of the invention is a desire to provide an elastic bracelet charm connector that overcomes one or more of the disadvantages of the prior art, or to provide a useful alternative.

Summary of the Invention

According to an aspect of the invention there is provided an elastic bracelet charm connector comprising a resilient wire loop formed from a length of wire of predetermined diameter, the wire loop having a predetermined wire loop diameter and circumference, the wire loop having a helical turn such that the ends of the length of wire overlap by an amount from between 10% to 40% of the wire loop circumference; and a wire loop gap intermediate the wire overlap, the wire loop gap being configured to have a magnitude corresponding to a charm bracelet elastic diameter.

Preferably, the resilient wire is a metal or coated metal. Also preferably, the resilient wire has a cross-sectional shape that is circular, elliptical or polygonal, and the resilient wire loop is circular, elliptical, triangular or polygonal.

In preferred embodiments, the ends of the length of wire overlap by an amount from between 20% to 35% and the wire loop gap has a dimension that is 50% or less than the diameter of the resilient wire forming the loop.

Preferably, the wire loop diameter is between 3-10 times the diameter of the resilient wire forming the loop.

It can therefore be seen that there is advantageously provided a charm connector for elastic bracelets that is relatively sturdy against external forces removing it from the charm of the bracelet and that is also able to be attached and removed from an elastic bracelet relatively easily and without the aid of tools such as soldering irons or fine-nosed pliers.

Brief Description of the Drawings

Preferred embodiments of the invention will now be described, by way of example only, with reference to the accompanying drawings in which:

Fig. 1 is an elevated rear perspective view of a bracelet charm connector according to the preferred embodiment;

Fig. 2 is an elevated front perspective view of the bracelet charm connector of Fig.1;

Fig. 3 is a top view of a charm attached to the charm connector of Fig. 1;

Fig. 4 is an elevated perspective view of the charm attached to the charm connector if Fig. 1; and

Fig.5 is a perspective view of a charm connector according to another preferred embodiment; and

Figs. 6 & 7 are different elevated perspective views of an elastic bracelet attached to the charm connector of Fig. 1.

Detailed Description

Like reference numerals are used to denote like components through each of the drawings of the preferred embodiment unless expressly noted otherwise.

Referring generally to Figs 1 & 2, the charm bracelet connector 1 of the preferred embodiment shown in various views. The bracelet charm connector 1 includes a resilient wire loop 2 having a diameter 4 and corresponding circumference.

The loop 2 is formed from a predetermined length of wire having a wire diameter 3. The wire diameter 3 is approximately 2.5mm and is preferably between 1mm to 5mm but it will be appreciated by those skilled in the art this diameter 3 can be any desired. The wire loop 2 is formed from a metal wire or an alloy metal wire, for example, a precious metal or a base metal as desired. It could alternatively be formed from a sturdy plastic.

As best seen in Fig. 1, the wire loop 2 has a helical turn (denoted 5 in the drawings) where ends 6 of the wire overlap an adjacent part of the wire loop 2 by about 20% of the wire loop 2 circumference. That is, the wire continues on a helical turn over a

length of approximately 20% of the circumference of the wire loop 2 rather than forming a single closed loop where the ends 6 meet. Preferably, the ends 6 of the wire loop 2 overlap by a length of between 10% to 40% of the circumference of the wire loop.

A wire loop gap 7 is provided intermediate the overlap of the wire ends 6. The wire gap 7 is sized in magnitude to receive an elastic of an elastic bracelet 20 therethrough substantially in the plane of the charm connector 1. In the preferred embodiment, the wire gap 7 is approximately 1mm being approximately 40% of the diameter 3 of the wire loop 2. In this way, the wire loop gap 7 receives the elastic of the bracelet through it so as to be contained by the wire forming loop 2. To remove the charm connector 1, the reverse action needs to occur and the elastic of the bracelet moved between the wire loop gap 7 intermediate the ends 6 of the wire.

This allows a charm to be connected to, or removed from, an~~d~~ elastic bracelet 20 relatively simply and quickly without the use of external tools. The dimension of the wire loop gap 7 prevents the bracelet elastic from moving therethrough unless the wire loop 2 is particularly aligned to allow the elastic when stretched an amount to move intermediate the ends 6 of the wire and the wire loop 2.

In the preferred embodiment, the wire loop 2 diameter 3 is preferably of the order of 3-20 times the diameter of the wire forming the wire loop 2. In respect of the wire loop gap 7 dimension, it is preferred that this is half or less than the diameter 3 of the wire used to form the wire loop 2. Most preferably the wire loop gap 7 is approximately 30% to 40% of the diameter 3 of the wire used in wire loop 2 but this can be dependent on the diameter of elastic (not illustrated) the elastic bracelet 20. That is, the wire loop gap 7 is determined to allow the elastic of the bracelet 20 through so as to attach the two together.

It is further noted that the wire loop gap 7 need not depend simply on the diameter of the elastic of the elastic bracelet 20 in a relaxed state but can also be determined as corresponding to the expected diameter of the elastic in the elastic bracelet 20 when

stretched by some predetermined amount. In this way, the elastic of the elastic bracelet 20 is unable to move through wire loop gap 7 unless it is stretched.

It is also noted that although the preferred embodiment has the ends 6 of the wire overlapping by an amount of about 20% of the circumference of the wire loop 2, it will be appreciated that the overlap amount can be between 20% to 35% of the wire loop 2 circumference. Furthermore, it will be appreciated that in other preferred embodiments of the ends 6 of the wire loop 2 can overlap by an amount from between 15% to 40% of the wire loop 2 circumference. In use, the charm connector 1 with such configurations is able to be relatively easily attached to the elastic of an elastic bracelet and not susceptible to removal accidentally.

Whilst the preferred embodiment has been described with reference to a charm connector 1 formed from a metal or alloy metal wire, it will be appreciated that plastic coated metals or plastics themselves such as polyoxymethylene having suitable mechanical properties can also be used.

Although not shown in the drawings, it will be appreciated that the wire loop 2 can have a non-circular shape such as elliptical or polygonal. In such embodiments, the diameter 3 of the wire loop 2 can be defined as the widest point/s across the loop 2 such as a diagonal of a square or the major axis of an ellipse. Similarly, the wire forming the wire loop 2 is preferably substantially circular but this can also be elliptical, polygonal or triangular if desired.

Turning now to Figs 3 & 4 there is shown a top view and an elevated perspective view of a charm 10 formed from a metal or metal alloy connected to the bracelet charm connector 1. In the preferred embodiment, this is achieved by attaching a loop of 11 to the charm 10. The loop 11 is formed from a metal or metal alloy that is the same as that of the charm 10. The loop 11 is soldered to the charm 10 but can be mechanically connected by any preferred means.

The loop 11 of the charm 10 includes a central hole 12 through which charm connector 1 is fed and attached. Typically, the charm connector 1 can be wound onto

loop 11 where the wire loop gap 7 is increased during the winding and relaxed once the charm connector 1 is wound on the loop 11. This way, the wire loop gap 7 can be smaller than a diameter of the material forming loop 11 and moved elastically to accommodate loop 11 being received through gap 7 before gap 7 is allowed to close.

Turning now to Fig.5, there is shown another preferred embodiment of the charm bracelet connector 1. In this embodiment, the charm bracelet connector 1 is similar to that shown in Figs 1 & 2 except that a ring or closed loop 8 is fixedly attached to wire loop 2 so as to attach a bracelet charm or other object thereto. Most preferably, the closed loop 8 is formed from the same metallic material as loop 2 wherein loop 8 is soldered in place to wire loop 2. The loop 8 preferably has a diameter that is between $1/10^{th}$ to $1/6^{th}$ the diameter 4 of the wire loop 2. In use, a charm 10 is connected to the ring or closed loop 8 and otherwise does not engage with the charm connector 1.

Figs 6 and 7 show an elastic bracelet 20 in a relaxed state. The elastic bracelet 20 in these Figs includes a fabric outer disposed about the elastic (not illustrated) where the elastic forms a closed loop. A charm bracelet connector 1 is disposed about the elastic of the bracelet 20. Here, the elastic and fabric outer of the bracelet 20 are received through the wire loop gap 7 when stretched and when not in a stretched configuration are unable to move back out through the wire loop gap 7 thereby retaining the charm bracelet connector 1 to the elastic bracelet 20. It will be appreciated that charms can be attached directly to the connector 1 or via an intermediate loop or ring 8. Furthermore, it will be appreciated that once the elastic charm connector 1 is attached to the elastic bracelet 20 the elastic bracelet can still be opened and closed namely, moved between a stretched and an unstretched state for a user to place over a body part most preferably a wrist or ankle.

The foregoing describes only one embodiment of the present invention and modifications, obvious to those skilled in the art, can be made thereto without departing from the scope of the present invention.

The term “comprising” (and its grammatical variations) as used herein is used in the inclusive sense of “including” or “having” and not in the exclusive sense of “consisting only of”.

CLAIMS:

1. An elastic bracelet charm connector comprising:

a resilient wire loop formed from a length of wire of predetermined diameter, the wire loop having a predetermined wire loop diameter and circumference, the wire loop having a helical turn such that the ends of the length of wire overlap by an amount from between 15% to 40% of the wire loop circumference; and

a wire loop gap intermediate the wire overlap, the wire loop gap being configured to receive a charm bracelet elastic therethrough.

2. The elastic bracelet charm connector according to claim 1 wherein the resilient wire is a metal or metal alloy.

3. The elastic bracelet charm connector according to claim 1 or 2 wherein the resilient wire has a cross-sectional shape that is circular, elliptical or polygonal.

4. The elastic bracelet charm connector according to any one of claims 1 to 3 wherein the resilient wire loop is circular, elliptical, triangular or polygonal.

5. The elastic bracelet charm connector according to any one of claims 1 to 4 wherein the ends of the length of wire overlap by an amount from between 20% to 35%.

6. The elastic bracelet charm connector according to any one of claims 1 to 5 wherein the wire loop gap has a dimension that is 50% or less than the diameter of the resilient wire forming the loop.

7. The elastic bracelet charm connector according to any one of claims 1 to 6 wherein the wire loop diameter is between 3-10 times the diameter of the resilient wire forming the loop.

8. The elastic bracelet charm connector according to any one of claims 1 to 7 further including a rigid closed loop fixedly attached to the wire loop.