Nov. 24, 1942. C. A. GOODWIN 2,303,267

HINGE JOINT FOR JEWELRY

Filed June 27, 1941

Fig. 1.



Fig. 2.

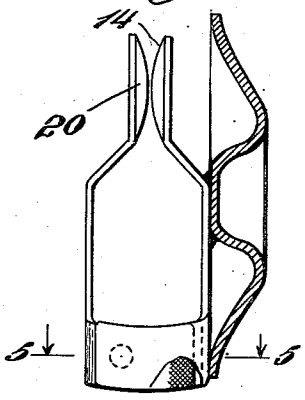


Fig. 3.

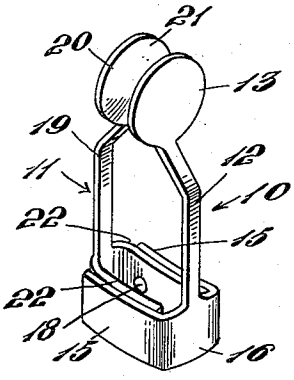


Fig. 4.

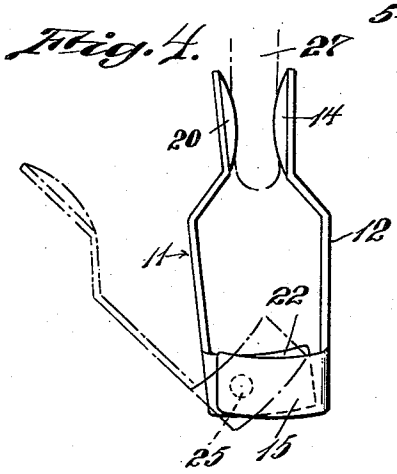


Fig. 5.

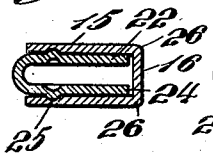


Fig. 6.

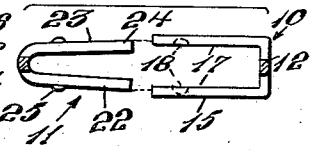


Fig. 8.

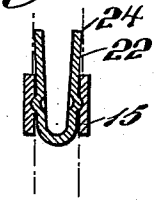


Fig. 9.

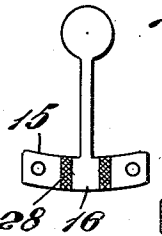


Fig. 10.

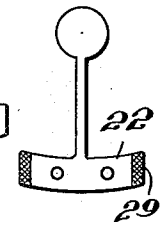


Fig. 7.

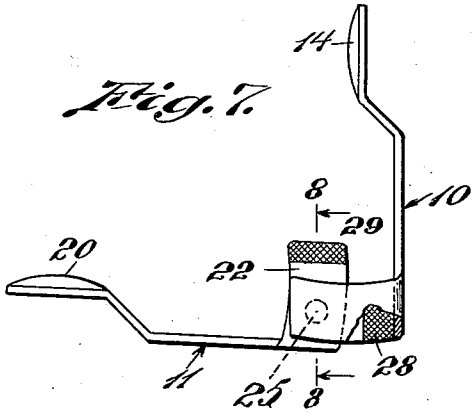
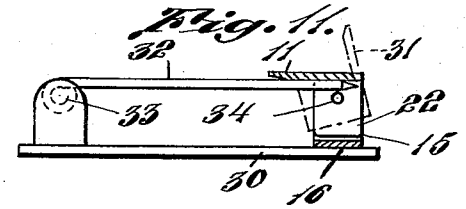


Fig. 11.



INVENTOR
Charles A. Goodwin
BY Barlow & Barlow
ATTORNEYS

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HINGE JOINT FOR JEWELRY

Charles A. Goodwin, East Providence, R. I., assignor to B. A. Ballou & Co., Inc., a corporation of Rhode Island

Application June 27, 1941, Serial No. 400,016

5 Claims. (Cl. 63—14)

This invention relates to a hinge joint for jewelry use and may be used for an ear ornament, a clasp, a pin stem lock, or for other such uses.

The usual form of ear ornament and dress clips comprises two jaws which are hingedly related and urged together by spring pressure. The use of a spring in such article as I am familiar with causes undesirable pressure or requires some complicated construction or some other undesirable results, which I obviate by the present construction. In the use of an ear ornament attachment, a continual urge of the two jaws together by spring pressure causes such pressure on the lobe of the ear as to be uncomfortable after some length of time.

One of the objects of this invention is to provide a construction having two jaws which will stay in the position to which they are moved and will exert no pinching pressure on the part which they engage by reason of the jaws being devoid of all pressure at all times and in all positions.

Another object of the invention is to provide a construction which will be simple but which will maintain itself in the adjusted position to which it is set.

Another object of the invention is to provide a frictional contact or engagement between the parts which are to maintain the jaws in set position.

Another object of the invention is to provide for greater frictional pressure for holding these parts in position when the parts are closed than when the parts are open, it being desirable to relieve this pressure when the parts are open.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described, and particularly pointed out in the appended claims.

In the accompanying drawing:

Fig. 1 illustrates an ear ornament on a woman's ear which is one use to which the invention is adaptable;

Fig. 2 is an enlarged view, partly in section and showing an ear ornament mounted on the device;

Fig. 3 is an edge view illustrating the hingedly related members with no ornament mounted thereon;

Fig. 4 is a similar view illustrating these hingedly related members as clamping some object between them and showing in dotted lines one of the jaws moved to open position;

Fig. 5 is a section on line 5—5 of Fig. 2;

Fig. 6 is a sectional view through the shanks of the members and showing the members in separated position that the relative inclinations of their surfaces may be observed;

Fig. 7 is an elevational showing the relatively movable members as swung to full open position, also showing one of these members broken away to illustrate roughening of the interior surface;

Fig. 8 is a sectional view on line 8—8 of Fig. 7;

Figs. 9 and 10 are plan views of the blanks of the members before being folded into working position;

Fig. 11 shows a pin stem with the structure embodying my invention in section and here used as a catch or lock for the pointed end of the pin stem.

In proceeding with this invention, I provide spaced arms on two members, usually U-shaped and oppositely disposed for one to overlap the other and be hingedly related about an axis passing through these overlapping portions. The inner arms usually are flared when unconfined and held under inherent tendency to expand when between the outer positioned arms, the relationship being such that when the members are swung on their hinge to open position, the largest portion or flare of the arms moves from the confined relation and is free to expand. Thus, the strongest frictional pressure between the parts is exerted at the time of the arms being in closed relation.

With reference to the drawings, 10 designates one member and 11 another member, which members are hingedly related together. The member 10 consists of a shank or stem portion 12 having an article-engaging end 13 shaped to adapt itself to the purpose for which the device is to be used. In the case of an ear ornament, the portion 13 is convexed as at 14 on its engaging surface, somewhat conforming to the surface of a sphere. At the other end of the shank, there are a pair of arms 15 bent from the center portion 16 to provide a generally U-shaped portion which will have the inner surfaces 17 substantially parallel. These inner surfaces may be recessed as at 18 for a hinge mounting as will be hereinafter pointed out.

The member 11 also consists of a shank 19 having an article-engaging end portion 20 convexed as at 21 and in all respects substantially the same as the shank 12 and end portion 13 of the member 10. Arms 22 are folded from the shank 19 to form a generally U-shaped portion such as shown in Figs. 3, 5, 6, and 8. This U-shaped portion has its outer surfaces 23 outwardly flaring so that the free ends 24 of these arms 22 are at a greater distance apart than at

the outer surface at the juncture of the fold. Protuberances 25 are formed to extend outwardly from the surfaces 23 and will enter recesses 18 to provide for pivotal relation of the arms 22 with reference to the arms 15.

At the pivot or hinge axis of the arms the distance between the outer surface of the arms is substantially the same as the distance between the inner surface of the arms 15, but at the ends 24 the distance of the outer surface of these arms 22 is considerably greater than the distance between the inner parallel surfaces of the arms 15. As seen in Figs. 5 and 6, the U-shaped portions comprising the arms 15 and 22 are oppositely disposed and positioned for one to overlap the other when the hinged relation is provided. When the members 10 and 11, as shown in Fig. 7, are swung into right angular relationship, the arms 22 (see Fig. 8) are not confined between the arms 15 at their ends 24 and therefore flare outwardly beyond them due to the inherent resilience of the stock to cause the arms to return to their unconfined position to which they were set.

When the members 10 and 11 are swung on their hinge from the position shown in Fig. 7 to the position shown in full line in Figs. 2, 3, or 4, the arms 22 are moved from the position such as shown in Fig. 8 by a wedge action to the position shown in Fig. 5, whereby the ends 24 are confined between the parallel arms 15; and due to the inherent resilience of the stock these arms 22 tend to spread apart throughout substantially the entire length of the surface of the parallel arms 15 but greatest at their ends 24 where there is the maximum compression of the arms. This compression of the ends is best supported by the proximity of the arms 15 to the fold 26 from the juncture or bridge portion 16. As this fold occurs, also this point 26 is hardened somewhat by the folding, and an adequate support is provided for this compression of the arms 22 when the members are swung to this closed position. The friction developed is sufficient to hold the members 10 and 11 in the adjusted position to which they are moved; and when in a position such as shown in Figs. 2, 3, 4 and 5, in which the arms 15 and 22 have their maximum surfaces contacting and their maximum compression, the maximum holding of these members in this position is provided. Thus, there is a progressively increasing friction developed between the arms when moved from the relative open position shown in Fig. 8 to the relative closed position shown in Fig. 5.

When this device is used for an ear ornament, it is merely necessary to move these members to the closed position on the lobe of the ear, designated in Fig. 4 as 27, and the pressure developed will be such as to hold these parts in this position. There is no pressure tending to move the parts further into engagement, and the natural expansion of the compressed portion of the ear or the portion about that contacted will hold the ear ornament in position.

In some cases, it may be desirable to increase the friction of the engaged surfaces, in which case I may knurl the surfaces of the arms 15 adjacent the juncture with the bridge portion 16 as at 28, (see Figs. 7 and 9), and I may knurl the outer surface of the arms 22 as at 29 (see Figs. 7 and 10). These knurled surfaces will then contact to provide the friction developed between the parts.

In some cases instead of providing an end part such as 13 or 20 on the shanks 11 and 12, I may provide some different shaping for use to engage a piece of fabric so that the device may be used as a dress clip. Some roughening or irregular surface for this end part may then be desirable.

In another use of this device, such as shown in Fig. 11, the portion 16 may be soldered to an ornament or bar 30 with the arms 15 extending upwardly therefrom to pivotally hold between them the arms 22 of the member 11 which may have its shank short as at 31 for action as a catch and lock for a pin stem 32 jointed as at 33. If this pin stem contacts at a point distant from its joint greater than the distance of the axis of the pivot 34 formed by the portions 18 and 25 from the joint, then any opening pressure of this pin stem will tend to close rather than open the member 11 of my device and thus will effectively act as a lock for holding the pin stem in position.

I claim:

1. A jewelry article comprising two relatively movable members, each comprising a shank with U-shaped portions providing spaced arms, said portions being oppositely disposed and positioned to overlap one over the other and with the arms thereof each substantially equal in width, means to hingedly relate said arms, with axes of said hinge means extending substantially midway through said arms relative to the width thereof, the inner surface of the outer positioned arms being generally parallel and the outer surface of the inner positioned arms being flaring when unconfined but held flexed in parallel position by the outer arms when the members are in closed relation to provide a frictional holding of the members in adjusted position, and an ornament secured to one of said members.

2. A hinge joint for jewelry comprising two relatively movable members, each comprising a shank with U-shaped portions providing spaced arms, said portions being oppositely disposed and positioned to overlap one over the other and with the arms thereof each substantially equal in width, means to hingedly relate said arms, with the axes of said hinge means extending substantially midway through said arms relative to the width thereof, the inner surface of the outer positioned arms being generally parallel and the outer surface of the inner positioned arms being flaring when unconfined but held flexed in a parallel position by the outer arms when the members are in closed relation to provide a frictional holding of the members in adjusted position, said engaging surfaces being roughened to increase the frictional engagement.

3. A jewelry article comprising two relatively movable members each substantially U-shaped providing spaced arms, and with the arms of one member equal in width to the arms of the other member, said members being oppositely disposed and with the arms of one member extending between the arms of the other member in overlapping relation, means for hinging said members for movement of one relative to the other and with the axes of said hinging means extending through said arms substantially midway thereof relative to the width thereof, the inner surface of the outer positioned arms being generally parallel and the outer surface of the inner positioned arms being flaring when unconfined but held flexed in a parallel position by the outer positioned arms when the members are in closed relation to provide a frictional holding of the members in adjusted position, and an ornament secured to one of said members.

4. A jewelry article comprising two relatively movable members each substantially U-shaped providing spaced arms, said members being oppositely disposed with the arms of one member positioned within the arms of the other member in overlapping relation, means for hinging said members for movement of one relative to the other, the inner surface of the outer positioned arms being generally parallel and the outer surface of the inner positioned arms being flaring when unconfined but held flexed in a parallel position by the outer positioned arms when the members are in closed relation to provide a frictional holding of the members in adjusted position, and an ornament secured to one of said members.

5. An ear ring comprising two relatively movable members, each comprising a shank provided at one end with an enlargement and at the other end with U-shaped portions providing spaced arms, said portions being oppositely disposed and positioned to overlap one within the other, means extending through said arms to hingedly relate the same for movement of said enlargement toward and away from each other, and with the inner surface of the outer positioned arms being generally parallel and the outer surface of the inner positioned arms being flaring when unconfined but held flexed in a parallel position by the outer positioned arms when the members are in closed relation to provide a frictional holding of the members in adjusted position, said enlargements providing means for engaging the ear of the wearer, one of said members carrying an ornamentation.

CHARLES A. GOODWIN.