

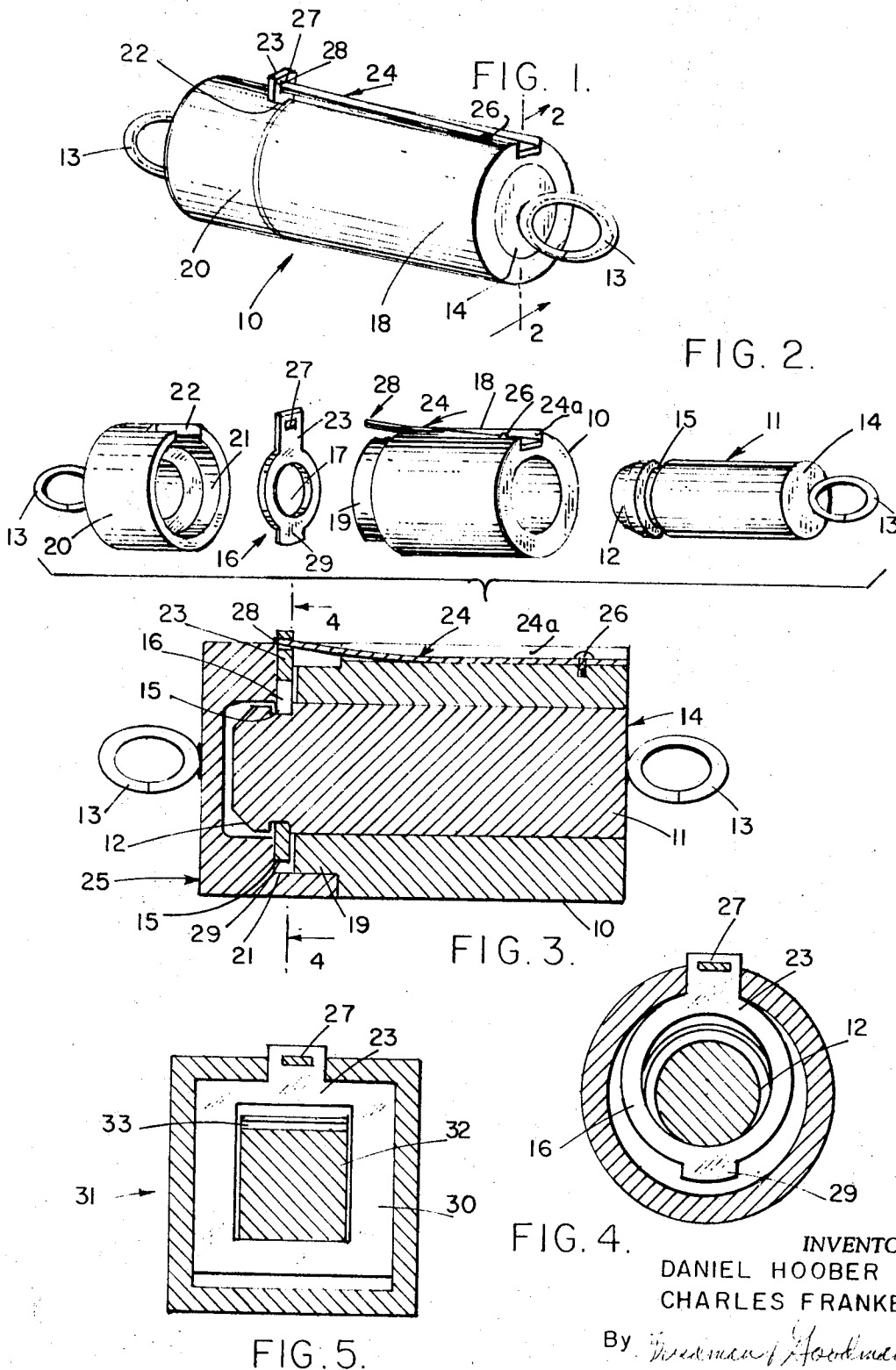
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JEWELRY CLASP

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JEWELRY CLASP

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ABSTRACT OF THE DISCLOSURE

A jewelry clasp is formed of a female member and a complementary male member adapted to cooperate with a lock located within the body of the female member. The lock is engaged via an externally mounted spring.

BACKGROUND OF THE INVENTION

This invention relates to jewelry clasps, and more particularly to locking jewelry clasps for use in securing necklaces, bracelets, watchbands and the like.

Of the several types of jewelry clasps currently in use to secure necklaces, none is entirely satisfactory. The small size and fragile construction of these clasps render them difficult to manufacture and operate. The durability of these clasps is limited for similar reasons.

A popular jewelry clasp, which is currently used to secure necklaces provides an example. This clasp requires the wearer to pull back a sliding lever and then position a loop over a small opening. The entire operation must be carried out by the wearer without looking at the clasp which is usually worn behind the neck. This device is also difficult to manufacture, as is well known in the industry. The longevity of the device is dependent upon the strength of a very small thin wall tubing in bending. The device is further dependent on the reliability of an extremely fine coiled spring which operates in a curved guide rather than a straight line. Unlocking this clasp involves the same kind of unwieldy, behind the head manipulation. A tiny metal edge must be located, pulled in the proper direction, and finally a small loop must be unhooked.

Another type of clasp which is currently in use compels the wearer to manipulate a sharp pin into a narrow groove and then locate a small pivoting lock. This device is also difficult to manufacture.

The use of these clasps is somewhat time consuming and often irritating and further it may result in improper closure of the clasp and subsequent loss or damage to the necklace.

BRIEF SUMMARY OF THE INVENTION

The above-stated disadvantages and drawbacks are obviated by the present invention. It is an object of the present invention to provide an improved jewelry clasp incorporating simplified means for positively locking said clasp.

Another object of the invention is to provide an improved jewelry clasp as aforesaid wherein the operation of the locking mechanism may be carried out easily and rapidly.

A still further object of the invention is to provide an improved jewelry clasp of simplified construction which may be manufactured easily and economically.

An additional object of the invention is to provide an improved jewelry clasp which is not easily damaged or gotten out of working order and which is reliable in operation at all times.

Briefly, the jewelry clasp of the invention comprises a female member and a complementary male member. The male member is adapted to cooperate with a lock

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which is located within the female member. The lock is engaged via an externally mounted spring which applies constant pressure to the lock thereby retaining it in the closed position.

In one embodiment of the invention the male member has a tapered head which acts as a locator for positioning the member in the lock's central aperture. In this embodiment the lock is formed of a flat metal stamping and has a central aperture. The male member has a groove located behind the tapered head, which groove receives the lock. The lock is held in position by a flat spring which is mounted on the exterior surface of the female member and which engages the lock via a slot in the upper section of the lock, thus exerting a constant upward pressure on the male member. The clasp is operated by moving the male member axially towards the lock. The tapered end of the male member pulls the lock down against the pressure of the spring. When the groove, located directly behind the tapered head reaches the lock location, the flat spring pulls the lock up into this groove and the locking action is complete.

To unlock the clasp, the flat spring is pressed downward disengaging the lock and the male member is pulled axially away from the lock.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and other objects, advantages and features of our invention will become apparent from the following description and accompanying drawings where-in similar components or parts have been given like characters through the several views, in which

FIG. 1 is a perspective view of a cylindrical jewelry clasp in the locked position;

FIG. 2 is an exploded view of the jewelry clasp shown in FIG. 1;

FIG. 3 is a longitudinal section taken on the line 2—2 of FIG. 1;

FIG. 4 is a section taken on the line 4—4 of FIG. 3; and

FIG. 5 is a cross-section of a modified embodiment of the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to the drawings, there is illustrated in FIG. 1, a jewelry clasp embodying the invention. The clasp is shown in the locked position. The jewelry clasp may be made of any suitable material such as metal or plastic and comprises a female member 10 and a cooperating male member 11. The male and female members are preferably manufactured in a cylindrical rod-like shape as illustrated in FIGS. 1—3; however, they may be fabricated in any regular or irregular cross-sectional design, i.e. square, triangular, hexagonal, parabolic, etc. It is also possible to make a female member with a different external geometrical configuration from that of the male member. For example, a female member might have a cylindrical or rod-like external shape, while being adapted internally to receive a male member having a triangular cross-section.

As shown, the male member 11 is an elongate rod or plunger having a beveled nose 12 at one end, and bearing a ring 13 or other similar attachment means for a necklace or watchband on the exterior surface 14 opposite the beveled nose. Directly behind beveled nose 12 is a groove 15 which is adapted to receive locking member or catch 16. Although male member 11 is illustrated as having a beveled nose 12, any shape which would serve to guide the male member into the central aperture 17 of locking member 16 might be used. Thus the nose may be bullet-shaped, or tapered to a point.

The female member 10 is comprised of a main body 18 bearing a shoulder 19 of reduced diameter at one end, and a cap 20, closed at one end, and having a collar 21 adapted to mate with shoulder 19 at its open end as illustrated in FIG. 2. The collar is provided with a notch or cut-out 22, which accepts the upper portion or tab 23 of locking member or catch 16, and positions it to receive flat spring 24. Cap 20 also has a ring 13 attached to its exterior diameter face 25. The ring may be permanently affixed to the face as by soldering, or being formed along with the cap. The ring may also be demountably attached as by a screw.

Locking member 16 has a central aperture 17, and is formed of a flat metal stamping or a molded plastic. The thickness of locking member 16 is such that it will seat comparatively easily in groove 15. Central aperture 17 has a diameter which is slightly larger than that of male member 11. The upper portion or tab 23 of locking member 16 protrudes through notch 22 and has a slot 27 which serves to receive the free end 28 of flat spring 24. The central aperture is formed to a shape which admits the male member.

As illustrated in FIG. 3, the locking member 16 is disposed between cap 20 and main body 18, and is thus actuable by flat spring 24. The lower tab or projection 29 rests on the interior of collar 21, and serves to hold the locking member 16 in proper alignment when the lock is opened. FIG. 4 illustrates how the beveled nose 12 of male member 11 serves to guide the male member through the central aperture 17 of locking member 16, when male member 11 is moved slidably forward towards the cap 20.

In operation, male member 11 is inserted into main body 18 and moved slidably forward towards cap 20, to lock the clasp. Beveled nose 12 on male member 11 guides it through central aperture 17 of locking member 16 and acts as a cam against the peripheral surface of the central aperture 17 of the locking member temporarily displacing it to permit the complete insertion of the male member 11. When groove 15 reaches the proper position in registration with the locking member 11, flat spring 24 pulls the locking member into this groove, and the clasp is positively locked. To unlock the clasp, the upper tab 23 of locking member 16 is pressed down toward the surface of the female member 10 disengaging the locking member from the groove, and the plunger is pulled slidably out, and away from cap 20.

Flat spring 24 applies constant pressure to locking member 16 and thus provides the positive locking action which is an essential feature of this invention. The flat spring 24 may be mounted in a recessed axially extending groove 24a as in FIGS. 2-3 and secured in position with a screw 26. However, any other mounting means well known in the art may be employed. The spring should be fashioned of a material such as spring steel or resilient plastic in order to provide reliable service.

The jewelry clasp is assembled by joining cap 20 onto main body 18 with locking member 16 disposed between them such that upper tab 23 is seated in notch 22, and slot 27 can receive the free end 28 of flat spring 24. The female member is held together by the pressure fit between shoulder 19 and collar 21 whose respective diameters are adjusted accordingly. Various other means may be used to join the female portions of the clasp either permanently or in a detachable fashion. For example, a small amount of an adhesive, or a solder and flux combination could be applied to shoulder 21 to achieve a permanent union of the female member.

FIG. 5 is a modified form of jewelry clasp embodying the features of this invention. The clasp is of similar construction to the clasp shown in FIGS. 1-4. In this embodiment of the invention locking member 30, female member 31 and male member 32, all are made with a square cross-sectional configuration. The use of this design necessitates a specific, but nonetheless axial alignment for insertion of the male member. This is true when

any design having an irregular cross-section is used; however, for certain applications this condition may be desirable. This modification employs a square nose 33 on male member 32, and the lock groove is adapted accordingly.

What is claimed is:

1. A jewelry clasp comprising a female member, said female member including a main body and a cap, said main body being provided with an aperture extending longitudinally from one end of said main body to an opposite end of said main body, said main body including a shoulder of reduced cross-section at said one end, said cap being closed at one end, attachment means disposed on said one end of said cap for securement to an article of jewelry, said cap including a collar at an opposite end therefor, said collar being provided with a notch at an outermost edge thereof, said cap collar slidably mating with said main body shoulder to define a groove between said cap and said main body, said groove communicating with said main body aperture and said cap notch, a locking member disposed in said groove, said locking member including a tab member and an opening being of substantially the same conformation as said main body aperture, said tab member projecting through said cap notch, a male member removably received in said main body aperture, said male member being provided with groove means adjacent one end of said male member to seat said locking member, attachment means disposed on an opposite end of said male member for securement to the article of jewelry, and spring means engaging said locking member to force said locking member to be engaged in said male member groove means in a first position of said locking member to thereby prevent retraction of said male member for said main body aperture, said spring means permitting said tab member to be depressed so that said one end of said male member is movable through said locking member opening in a second position of said locking member to thereby permit said male member to be moved into and out of said female member.

2. A jewelry clasp as recited in claim 1, wherein said female member is cylindrical in cross-section.

3. A jewelry clasp as recited in claim 2 wherein said male member comprises,

an elongate rod,

a shaped nose at the forward end of said rod, said rod bearing said groove means behind said shaped nose.

4. A jewelry clasp as recited in claim 3, wherein said shaped nose is beveled.

5. A jewelry clasp as recited in claim 4, wherein said locking member comprises flat plate with said locking member opening defining a central aperture slightly larger than the cross-section of said male member.

6. A jewelry clasp as recited in claim 5, wherein said tab member includes a slot for receiving said spring means.

7. A jewelry clasp as recited in claim 6, wherein said spring means includes:

a flat steel spring arranged in coaxial relation with said male member, said spring having one end fastened to the surface of said female member main body and one end free to engage said locking member.

8. A jewelry clasp as recited in claim 1, wherein said collar and said shoulder are held together by a pressure fit therebetween.

9. A jewelry clasp comprising a female member comprising a body of generally cylindrical conformation having an axial bore extending through at least a portion of its length, a locking member comprising a planar apertured member disposed within said body for limited movement in a direction transverse to the axis of said bore, the aperture in said planar member being of substantially the same conformation as the bore in said body and being movable from a first position wherein a portion of the periphery of said aperture extends into said bore to a second position wherein the passage provided by the bore is unobstructed thereby, resilient means for biasing said locking member to said first position, a male member re-

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movably received in the bore of said body, said male member being provided with a camming end surface to contact said locking member and to move the same from its first position to its second position wherein the passage through said bore is unobstructed thereby, a peripheral groove provided on said male member to receive a portion of said locking member upon the complete insertion of said male member into the bore of said body to thereby prevent the retraction thereof, said locking member being provided with actuating means for manually moving it to said second position to thereby disengage said locking member from said groove to permit the retraction of said male member from said female member, attachment means carried by said male and female member respectively to permit the same to be secured to the ends of an article of jewelry said female member including a first part and a second part, said first part being provided with a shoulder at an end thereof, said second part being provided with a collar at an end thereof, said collar including a notch at an outermost edge thereof to receive said actuating means therethrough, said second part collar slidably mating with said first part shoulder to define

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groove means between said first and second parts to movably contain said locking member, said groove means communicating with said collar notch and said axial bore of said female member.

10. A jewelry clasp according to claim 9 wherein said collar and said shoulder are held together by a pressure fit therebetween.

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