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(54) **LOCKING AND HOLDING SYSTEM FOR JEWELRY**

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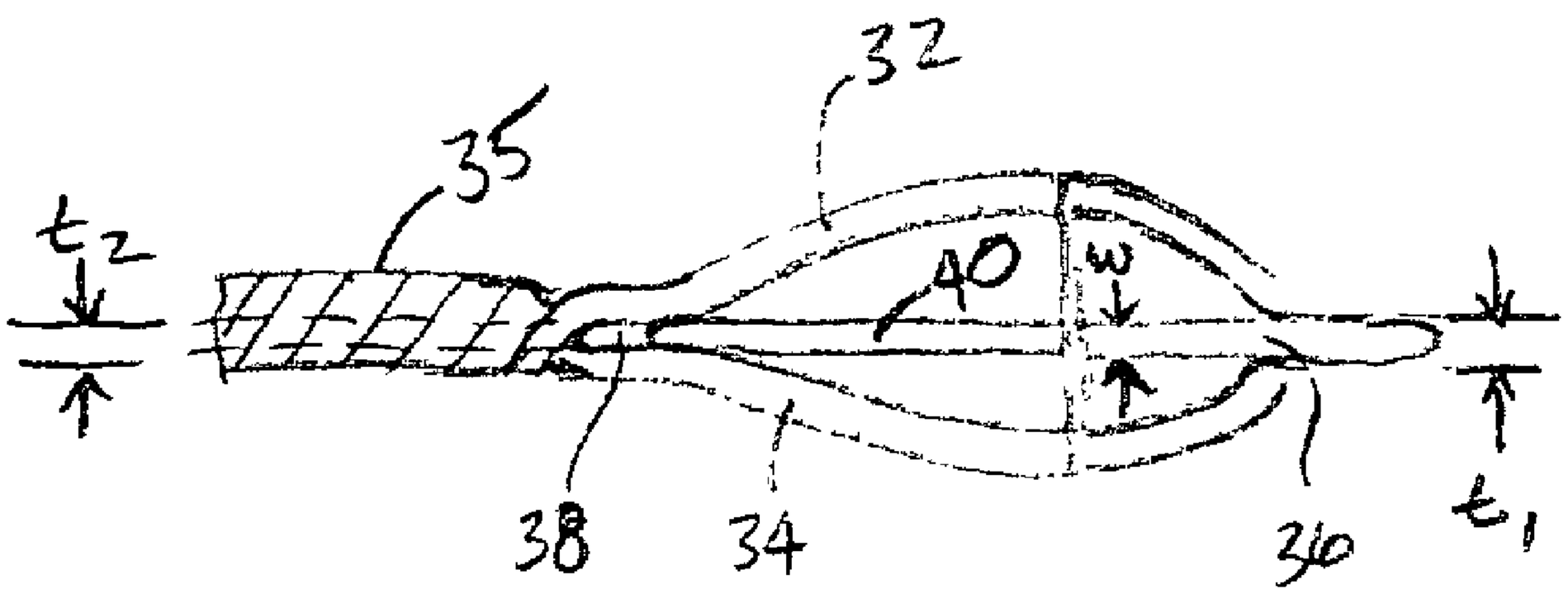
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(57) **ABSTRACT**

A locking and holding system for jewelry insertable into a pierced body part is disclosed. The locking and holding system includes a shaft having at least one throat or opening, a pivot pin, and a locking bar in rotational engagement with the pivot pin. The locking bar may be rotated into a insertion orientation such that the locking bar is engaged in an interfering fit with the throat to retain the locking bar. After insertion of the shaft through the pierced opening, the locking bar may be rotated into a locking orientation to retain the item of jewelry to the person's body.



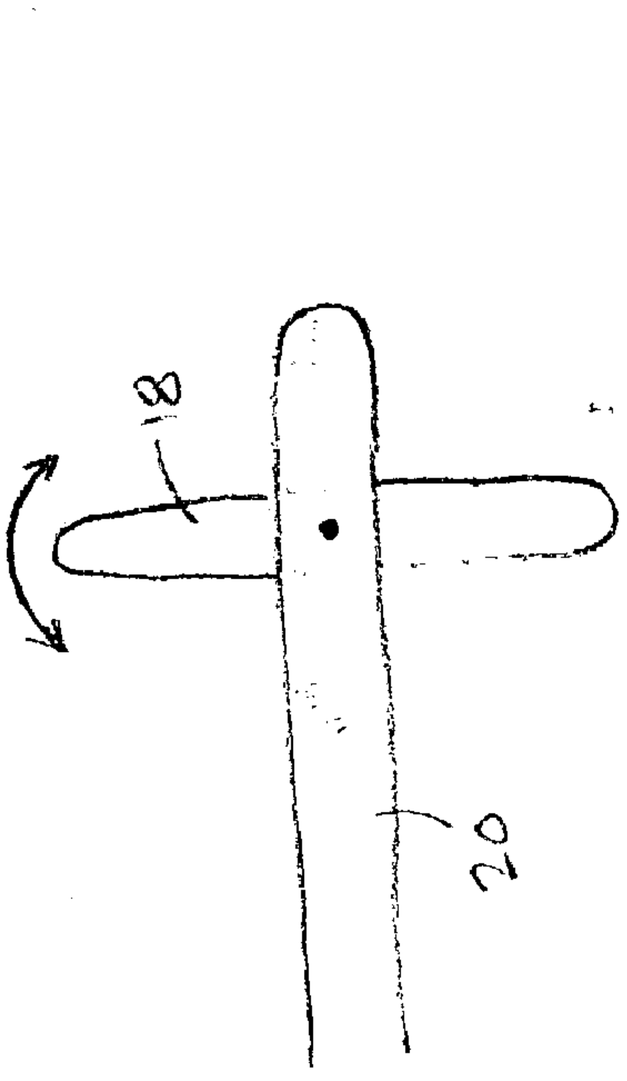


Figure 2a

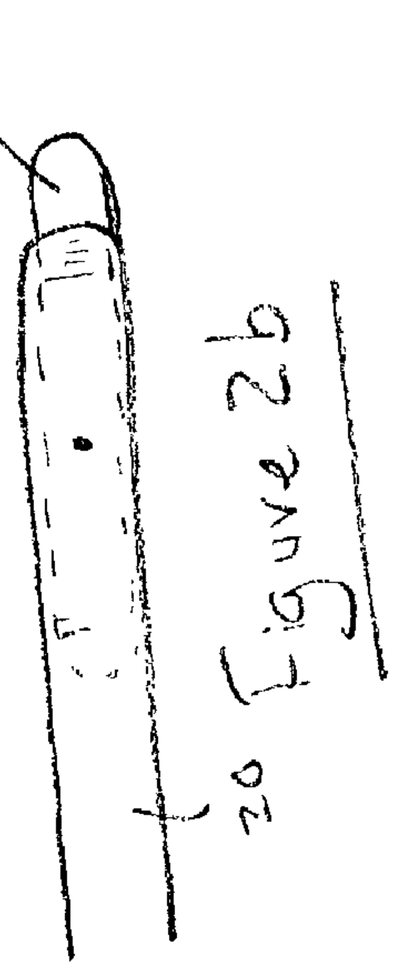


Figure 2b

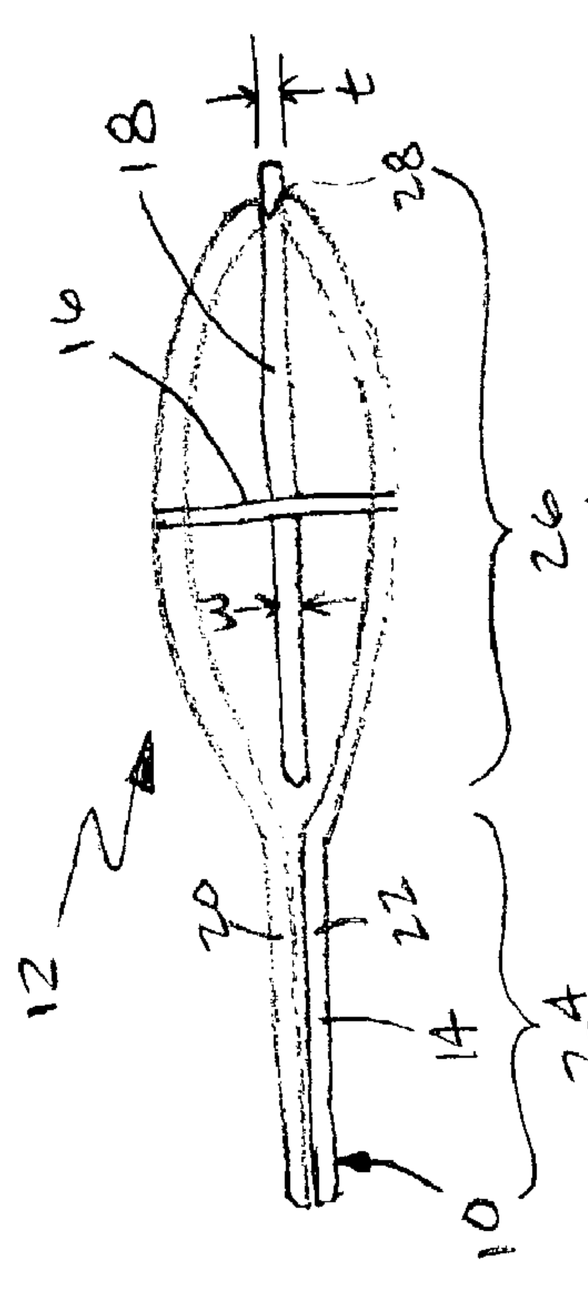


FIGURE 1

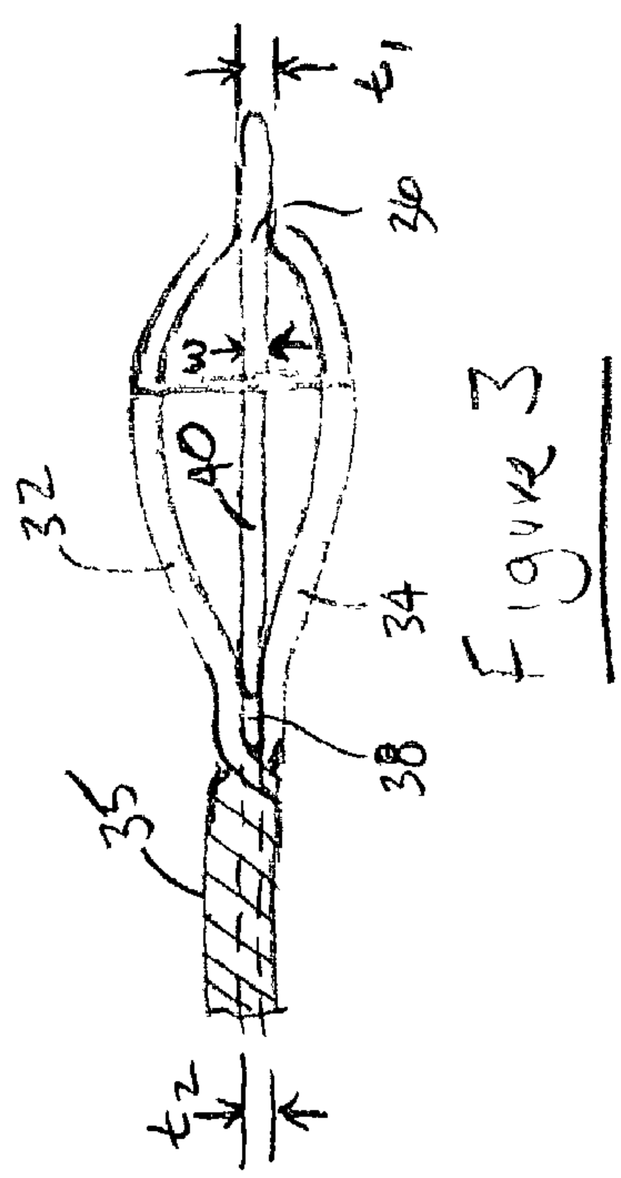


FIGURE 3

LOCKING AND HOLDING SYSTEM FOR JEWELRY

TECHNICAL FIELD

[0001] The present invention is directed to jewelry, and more particularly to jewelry for insertion into pierced body parts, such as earrings and such.

Background of the Invention

[0002] In U.S. Pat. No. 4,543,804 is described a locking and holding system for pierced earrings, the contents of which are incorporated herein by reference. The invention described therein takes advantage of the synergy between the disclosed locking and holding system and the user's ear to provide an effective and easy to use pierced earring. As a result, the invention produces an integral, one-piece device that eliminates the need for conventional and cumbersome designs that include a separate locking mount or sliding nut. The one-piece device is extremely useful for people with arthritic fingers who are unable to pick up the earnut and slide it on a friction post. In addition to being effective and easy to use, the one-piece design eliminates the risk of loss of the locking nut, without which the conventional earring design is useless.

[0003] In a particular embodiment disclosed in U.S. Pat. No. 4,543,804 (FIGS. **9-11**), the inventor recognized the need for a pivoting locking bar that could be biased into one of two positions: either the insertion orientation with the locking bar substantially parallel to the shaft or the locked orientation with the locking bar essentially 90 degrees to the shaft. To accomplish this biasing, a system is disclosed having posts on the locking bar that engage with recesses on the shaft. The posts and recesses are located such that engagement holds the locking bar into one of the desired positions.

[0004] The post and recess system provides the user with assurance that during insertion of the earring the locking bar will not move or pivot into an orientation that impedes insertion of the earring. In this way, the post and recess system is functionally similar to the conventional cuff link system, which includes a spring biasing mechanism to hold the pivoting arm into the two desired orientations. However, as is obvious to one skilled in the art, the spring biasing systems of cuff links are much to large to incorporate into the shaft and locking bar arrangement of an earring or any other piece of jewelry that is inserted through a pierced opening in a person's skin.

DISCLOSURE OF THE INVENTION

[0005] The present invention is based in part upon the recognition that the post and recess arrangement, while effective, requires additional manufacturing work on the jewelry. This additional work increases the cost of the manufacturing and thereby the cost of the finished product. A more cost effective arrangement that fits within the tight constraints of jewelry for insertion through body piecings while producing the functional benefits of the post and recess system would be highly advantageous.

[0006] According to the present invention, a locking and holding system for jewelry insertable into pierced body parts includes a shaft having an opening, a pivot pin, and a locking bar pivotally engaged with the pivot pin. The locking bar is permitted to pivot to rotate between an orientation substantially parallel with the shaft (insertion orientation) and an orientation substantially perpendicular to the shaft (locking orientation). In the insertion orientation, the locking bar is engaged in an interference fit with an opening in the shaft such that the locking bar is retained in the insertion orientation.

[0007] The principle advantage of the present invention is the security of the user in knowing that the locking bar will remain in the insertion orientation during insertion through the pierced opening. Once the insertion is completed, the user can simply push the locking bar into the locking orientation and retention of the jewelry to the pierced body part is complete. To remove the jewelry from the body, the user forces the locking bar Back into the insertion orientation and pulls the shaft and locking bar back through the pierced opening.

[0008] Another advantage of the present invention as compared to the recess and post arrangement is that the manufacturing of the jewelry is simplified. The shaft can be made conventionally of two portions that are adjacent to each other or are wound around each other in a braided rope fashion. The portion of the shaft proximate to the locking bar is formed to include an opening that is sized to have a throat that is slightly smaller than the thickness of the locking bar. This arrangement does not require additional forming or cutting of the shaft to form recesses or additional machining or fabricating of posts on the locking bar. As a result, significant cost can be saved in the manufacture of the jewelry.

[0009] The invention accordingly comprises an article of manufacture possessing the features, properties, and the relation of elements which will be exemplified in the article hereinafter described, and the scope of the invention will be indicated in the claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] **FIG. 1** is a side view of a locking and holding system for jewelry according to the present invention.

[0011] **FIGS. 2***a* and **2***b* are top views of the locking and holding system in the locking orientation (a) and the insertion orientation (b).

[0012] **FIG. 3** is a side view of an alternative embodiment of the present invention.

BEST MODE FOR CARRYING OUT THE INVENTION

[0013] In **FIGS. 1 and 2** are one embodiment of the present invention. This embodiment includes an item of jewelry **10**, of which only the locking and holding system **12** are illustrated for simplicity. The locking and holding system **12** includes a shaft **14**, a pivot pin **16** and a locking bar **18**.

[0014] The shaft **14** if formed to have two portions **20**,**22** that extend longitudinally and have a first section **24** with the two portions **20**,**22** directly adjacent to each other and a second section **26** with the two portions **20**,**22** expanded away from each other. The distal ends of each portion **20**,**22** terminate proximate to each other to form an opening or

throat **28**. The throat **28** has a dimension that is predetermined as will be described in more detail below.

[**0015**] The pivot pin **16** is fixedly mounted to each of the two portions **20**,**22** of the shaft **14** and extends between the two portions **20**,**22** in the expanded section **26** of the shaft **14**. The pivot pin **16** may be fixed to the shaft **14** by any convention means and, although described as "fixed", it should be noted that the intended meaning is that the pin's location is fixed and the pin itself may move, i.e., rotate or slide, within the mounting.

[**0016**] The locking bar **18** is engaged with approximately the center of the pivot pin **16** and in a manner that permits 360 degrees of rotation of the locking bar **18** about the pivot pin **16**. The locking bar **18** has a width dimension w as shown in **FIG. 1**. The width w of the locking bar **18** and the throat dimension t are predetermined such that an interference is formed between the locking bar **18** and the throat **28**. In other words, the maximum thickness of the locking bar in the vicinity of the throat **28** is selected such that it is equal to or greater than the minimum dimension of the throat **28**.

[**0017**] The locking bar **18** has a length dimension **1** such that it may extend outwardly from the shaft **14** when the locking bar **18** is in the locking orientation as shown in **FIG. 2***a*. The generally perpendicular arrangement of the locking bar **18** and shaft **14** provides the holding mechanism for the item of jewelry **10**. In addition, the locking bar **18** is sized such that when rotated into the insertion orientation, as shown in **FIG. 2***a*, it can be aligned with the shaft **14**. The alignment of the locking bar **18** and the shaft **14** facilitates the insertion of the shaft **14** through the pierced opening of the ear or other body part. Further detail and description of the general locking and holding function can be found in the detailed description of U.S. Pat. No. 4,543,804.

[**0018**] As the locking bar **18** is passed through the throat **28**, the interference between the throat **28** and the locking bar **18** retains the locking bar **18** in the generally longitudinal orientation of **FIG. 2***b*. The user then inserts the shaft **14** through the pierced opening until the shaft **14** extends through the pierced opening. At this point, the user then rotates the lock bar **18** out of engagement with the throat **28** and into the locking orientation (**FIG. 2***a*). In this orientation, the item of jewelry **10** is securely retained to the person's body. To remove the item of jewelry **10**, the user rotates the locking bar **18** back into engagement with the throat **28** and into the insertion orientation. Once into the orientation, the user then pulls the shaft **14** back out through the pierced opening and off of the person's body.

[**0019**] Further detail and description of the general locking and holding function can be found in the detailed description of U.S. Pat. No. 4,543,804.

[**0020**] **FIG. 3** illustrates another embodiment of the present invention. In this embodiment, the two portions **32**,**34** of the shaft **35** are wound around each other in a twisted or rope like fashion. The termination of the two portions forms a throat **36** as described above with respect to the embodiment of **FIG. 1**. One difference between the embodiments of **FIGS. 1 and 3**, however, is that at the end of the twisted section of the shaft **35** is formed another opening or throat **38**. This second throat **38** is also sized to have a dimension t**2** that is slightly smaller that the width dimension w of the locking bar **40**. As a result, in this embodiment there are two throat portions **36**,**38** to provide additional retention of the locking bar **40** in the insertion orientation.

[**0021**] As discussed previously, the throat dimensions t**1**, t**2** of both the first and second throats **36**,**38** are selected to be equal to or slightly less than the width dimension w of the locking bar **40** in the vicinity of the throats **36**,**38**.

[**0022**] Although illustrated in particular embodiments, it should be apparent to one skilled in the art that various modifications could be made without departing from the scope of the invention. For instance, either the first or second throats could be used without the other to provide adequate retention of the locking bar. In addition, the two portions of the shaft could easily be formed from a single piece or from multiple pieces. Finally, the shape of the locking bar and the shaft could be modified for aesthetic or other reasons.

What is claimed is:

1. A locking and holding system for jewelry insertable into pierced body parts including:

a shaft having a distal end, wherein the distal end includes an opening having a throat dimension t;

a pivot pin fixedly located relative to the shaft; and

a locking bar that is pivotally engaged with the pivot pin to permit rotation of the locking bar about the pivot pin, the locking bar having a width dimension w that is equal to or greater than the throat dimension t of the opening, whereby when the locking bar is pivoted into an orientation such that the locking bar is substantially parallel to the distal end of the shaft, the locking bar is positioned within the opening and retained therein by the interfering engagement between the locking bar and the opening.

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