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L. J. BARWOOD

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HANDLE

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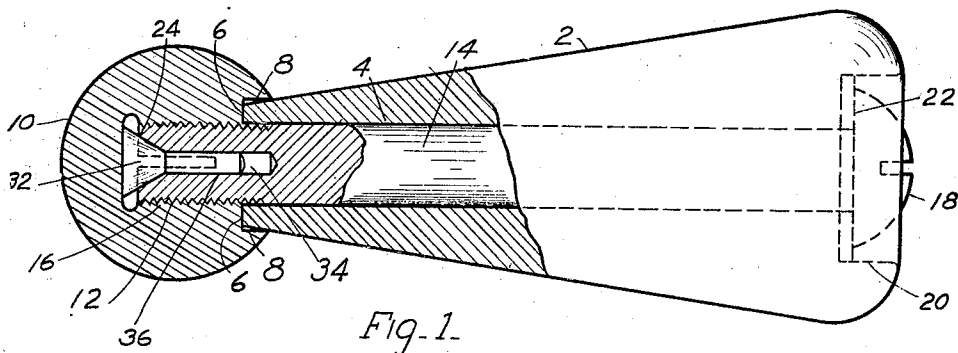


Fig. 1.

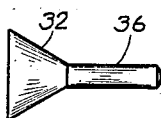


Fig. 2.

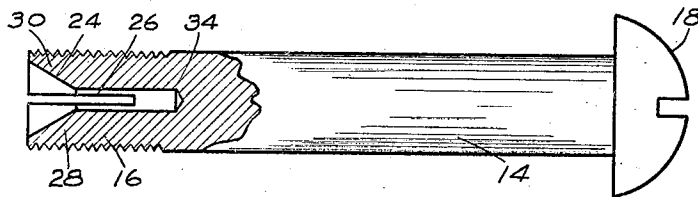


Fig. 3.



Fig. 5.

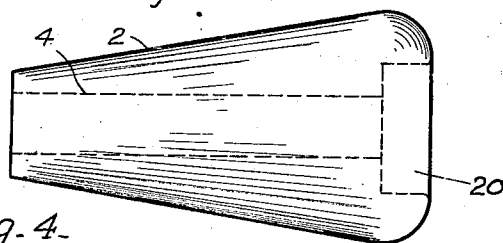


Fig. 4.

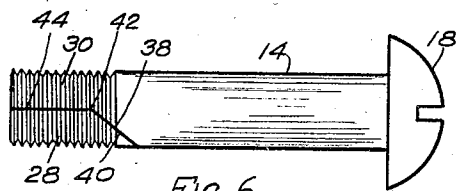


Fig. 6.

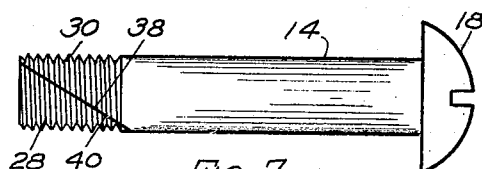


Fig. 7.

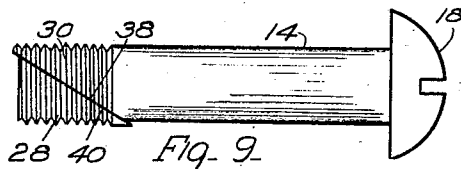


Fig. 9.

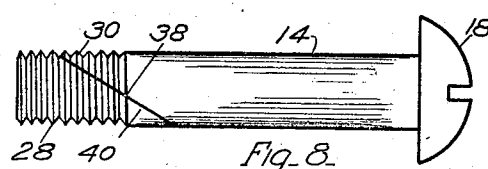


Fig. 8.

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HANDLE

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The present invention relates to handles, and more particularly to handles of the type having a longitudinally extending bore through which extends a pin screw-threaded at one end for attachment to a body structure.

Handles of the above described character, because they are freely rotatable about the pin, and also for other reasons, have a tendency to loosen by the pin becoming unscrewed from the body structure.

A chief object of the invention is to prevent such handles from becoming loosened. Other and further objects of the invention will be explained hereinafter, and will be more particularly pointed out in the appended claim.

The invention will be described in connection with the accompanying drawings, in which Fig. 1 is a view in elevation, partly in section, of a preferred embodiment of the present invention; Figs. 2, 3 and 4 are detail views; Fig. 5 is a view of a modification, and Figs. 6, 7 and 8 are views of further modifications; and Fig. 9 is a view corresponding to Fig. 7, showing the parts in different relative positions.

A handle 2 having a longitudinally extending bore 4 is shown mounted upon a seat 6 of a recess 8 in a body structure 10. A threaded opening 12 through the seat 6 communicates with the recess 8. A pin 14 extends through the bore 4 and contacts with the wall of the bore throughout the length of the bore, and is provided with an end having screw threads 16 threaded into the screw threads of the opening 12. The other end of the pin is provided with a head or other enlargement 18, seated in a countersunk recess 20 of the handle 2 that communicates with the bore 4. A washer 22 may be interposed between the head 18 and the handle 2. The handle is thus confined between the body portion 10 and the head 18 of the pin 14. The head 18 may be provided with a kerf for facilitating the screw threading of the threaded end of the pin 14 into the screw thread 12. In this way, the handle 2 may be firmly mounted upon the body portion 10.

To prevent the handle from becoming

loosened, the threaded end of the pin is made expansible, so that it may be expanded into very tight engagement with the walls of the threaded opening 12. According to the preferred embodiment of the invention, illustrated in Figs. 1 to 4, the threaded end of the pin is interiorly provided with an inwardly tapered opening 24. The threaded end of the pin is, furthermore, longitudinally split at 26 into two parts 28 and 30. A correspondingly tapered plug 32 is mounted in the tapered opening 24, whereby, when the pin is threaded into the opening, the threaded end will be expanded into tight engagement with the walls of the opening 12. The pin is thus effectively locked against rotation. The inwardly tapered opening 24 may be provided with a guiding bore 34 leading from the opening longitudinally of the pin, and the plug may be provided with a corresponding guiding extension 36, as shown more particularly in Fig. 2. The guiding extension 36 may be omitted, as shown in Fig. 5, and in that event the guiding bore 34 may also be omitted. The guiding bore 34 and the guiding extension 36 facilitate the mounting of the parts and minimize chances of losing the plug 32 prior to the screw-threading of the threaded end of the pin 14 into the threaded recess 12.

The walls of the tapered opening 24 and of the tapered plug 32 provide, in effect, wedge faces that cause the parts to slide, one upon the other, thereby effecting an outward movement of the split parts 28 and 30 relative to each other, in such fashion as to provide a more uniform binding action of the threads of the threaded end 16 with the threads of the opening 12. The binding action between the threaded end and the walls of the threaded opening is thus spread out throughout the depth of the opening 12. This result may, however, be effected in other ways, as illustrated in Figs. 6 to 9.

The part 28 is in these figures cut entirely away from the part 30. The part 30 is provided with a wedge face 38, and the part 28 with a cooperating wedge face 40. These operate to force the parts 28 and 30 outwardly, as the pin is screw-threaded into the

opening 12, thereby expanding the threaded end of the pin and effecting the same locking action as before. The inclined cut for producing the cam faces 38 and 40 may extend directly out to the end of the pin, as shown in Fig. 7, or across the pin, as in Fig. 8, or it may stop short at an intermediate point, as shown at 42, Fig. 6, the rest of the cut being longitudinal of the pin, as indicated at 44 of the same figure.

Many other modifications will occur to persons skilled in the art, and all such are intended to be included within the scope of the appended claim.

What is claimed is:

A handle structure comprising a body portion having a screw-threaded opening, a threaded pin having a threaded end threaded into the opening and another end provided with an enlargement, a handle having a longitudinally extending bore within which the pin is mounted, the handle being confined between the body portion and the enlargement, and means for expanding the threaded end of the pin into tight engagement with the walls of the threaded opening to lock the pin against accidental loosening by rotation.

In testimony whereof, I have hereunto subscribed my name.

LEON J. BARWOOD.

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