Oct. 3, 1967 L. PARKIN ETAL 3,345,103

HANDLE ASSEMBLIES AND MEANS FOR DETACHABLY SECURING A HANDLE TO A ROD-LIKE ELEMENT

Filed Jan. 3, 1966

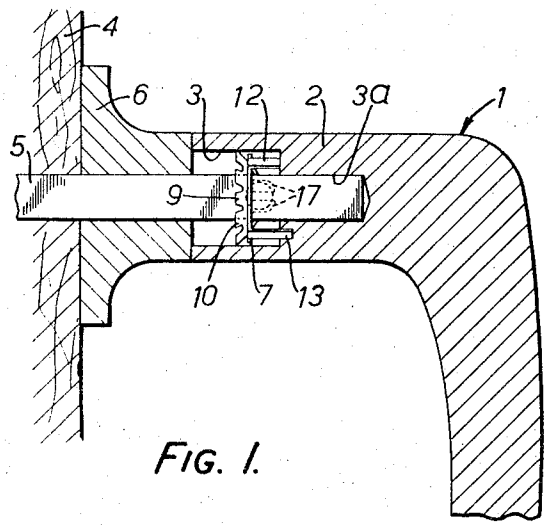


FIG. 1.

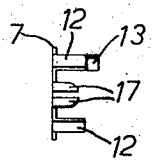


FIG. 4.

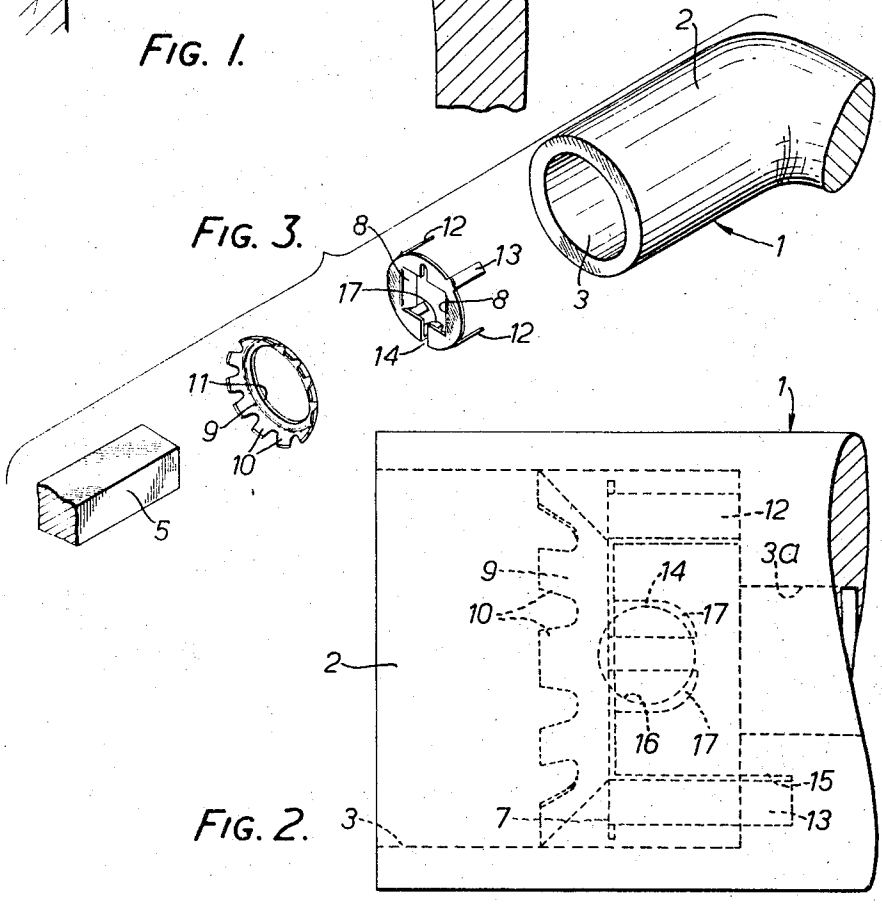


FIG. 3.

FIG. 2.

INVENTORS

LESLIE PARKIN &

SYDNEY ALAN ANDREWS,

BY Philip E. Parker

ATTORNEY

United States Patent Office 3,345,103 Patented Oct. 3, 1967

3,345,103

HANDLE ASSEMBLIES AND MEANS FOR DETACHABLY SECURING A HANDLE TO A ROD-LIKE ELEMENT

Leslie Parkin, Bobbers Hill, and Sydney Alan Andrews, Stapleford, England, assignors to United-Carr Incorporated, Boston, Mass., a corporation of Delaware

Filed Jan. 3, 1966, Ser. No. 518,182
Claims priority, application Great Britain, Jan. 21, 1965, 2,738/65
3 Claims. (Cl. 292—353)

ABSTRACT OF THE DISCLOSURE

An assembly of a handle and rod means, attached together by a fastening device fitted in the handle and receiving the rod means. The device permits reception of the rod means but prevents removal thereof unless expanded by a tool.

This invention relates to handle assemblies adapted to be detachably secured to a rod-like element, for example, a rod projecting from a door or window.

The present invention provides a handle assembly comprising a handle formed with a rod-receiving cavity and an aperture extending transversely of the wall of the cavity from the outside and opening on to the said cavity, a clip secured in the cavity and comprising a base provided with inwardly directed tongues, the free ends of which define a rod-receiving aperture, the base of the clip being divided into two relatively movable sections by a transverse slot which is aligned with the said aperture in the wall of the cavity, the disposition of the tongues being such that a rod inserted into the handle cavity and rod-receiving aperture in the base of the clip will be frictionally gripped by the free ends of the tongues to retain the clip in assembly with the handle, the grip of the tongues being releaseable by effecting relative movement of the sections of the base by means of a tool inserted through the aperture in the wall of the cavity into the transverse slot in the base of the clip.

The spring clip is preferably provided with means for ensuring that it is only insertable into the cavity in correct position with the slot aligned with the aperture.

To enable the invention to be fully understood, it will now be described, by way of example, with reference to the accompanying drawings; in which:

FIGURE 1 is a sectional view of a door handle assembly according to one embodiment of the invention mounted on a rod-like member projecting from a door;

FIGURE 2 is a fragmentary view of the handle assembly shown in FIGURE 1 but on a greatly enlarged scale;

FIGURE 3 is an exploded view illustrating the handle, rod, spring clip and a retaining washer; and

FIGURE 4 is a side view of the spring clip.

In the drawings, **1** indicates a door handle having a shank **2** formed with an axially extending cavity **3**. **4** indicates a door and **5** a rod of non-circular cross section which extends outwardly through a face plate indicated by **6**. It will be understood that the rod may be the operating element for rotating a latch mounted in the door.

As shown in FIGURE 1, the rod extends into the cavity **3** in the shank of the handle, its free end being received in an extension **3***a* of the recess. The handle is detachably secured to the rod by a spring clip assembled in the cavity **3** and including a base **7** formed with integral opposed tongues **8**, the free ends of which define a rod-receiving opening so that when the rod **5** is inserted between the free ends of the tongues, it is frictionally gripped. The

spring clip is assembled in the cavity before the handle is assembled over the end of the rod and is retained within the cavity by a resilient metal washer **9** having a plurality of outwardly projecting teeth **10** and a central aperture **11**.

As shown, the base **7** of the spring clip is provided with two or more legs **12** and a further longer leg **13**, all extending substantially normal to the base. The base is also formed with a radial or transversely extending slot **14** extending from the outer to the inner peripheries of the base so that in effect the base is of C-shape.

The spring clip is positioned in the cavity **3** of the handle until the free ends of the shorter legs **12** abut the end wall of the cavity, the longer leg **13** extending into an axial extension **15** of the cavity. When thus assembled, the slot **14** is aligned with the transversely extending aperture **16** in the shank **2**. It wil be understood that the provision of the longer leg and cavity extension **15** serve to ensure that the clip is correctly assembled in the cavity. The clip is retained in position by the washer **9** which is forced inwardly of the cavity until it abuts the base **7** of the clip, the teeth **10** digging into the wall of the cavity to secure the washer in clip retaining position.

To secure the handle to the rod, the free end of the latter is entered into the cavity and axial force is applied to the handle to cause the free end of the rod to pass through the aperture **11** in the washer **9**, pass between the free ends of the tongues **8** and enter the cavity extension **3***a*. The tongues **8** being resilient will frictionally grip opposed flat faces of the rod to secure the handle thereto so that it is not necessary to provide any additional fixing means such as a grub screw. As the free ends of the tongues are directed towards the inner end of the cavity, an axial pull on the handle will cause the tongue to dig into the surface of the rod and increase the gripping action.

As shown, the rod is of rectangular cross-section, and the opening defined by the free ends of the tongues is of corresponding shape and accordingly rotation of the handle will impart a corresponding rotation to the rod to operate latch means which may be connected with the rod. The frictional grip on the rod is, however, sufficient to enable the handle to impart a push pull movement to the rod should this be desired.

If it is required to remove the handle, a tool such as a screw driver is inserted through the aperture **16** into engagement with the slot **14** in the base of the clip and by imparting a small rotation movement to the tool, the clip will be opened out so that the tongues will be displaced out of rod gripping position to permit the handle to be withdrawn from the rod. As shown, the base is provided with ears **17** adjacent each opposite side of the slot for engagement by the tool.

We claim:

1. A handle assembly comprising a handle formed with a rod-receiving cavity and an aperture extending transversely of the wall of the cavity from the outside and opening onto the cavity, a clip secured in the cavity and comprising a base provided with inwardly directed tongues, the free ends of which define a rod-receiving aperture, the base of the clip being divided into two relatively movable sections by a transverse slot which is aligned with the aperture in the wall of the cavity, the disposition of the tongues being such that a rod inserted into the handle cavity and rod-receiving aperture in the base of the clip will be frictionally gripped by the free ends of the tongues to retain the rod in assembly with the handle, the grip of the tongues being releasable by affecting relative movement of the sections of the base by means of a tool inserted through the aperture in the wall of the cavity into the transverse slot in the base of the

clip; the clip being provided with axially extending legs engageable with the inner end wall of the cavity in the handle so as to position the slotted base in alignment with the inner end of the aperture in the wall of the cavity.

2. A handle assembly according to claim 1, wherein one of the said legs is longer than the others and the inner end wall of the cavity is formed with a recess for receiving said longer leg.

3. A handle assembly according to claim 1 wherein the clip is retained in the cavity by a washer having a plurality of tongues extending outwardly of its outer peripheral surface for frictional engagement with the side wall of the cavity, the washer having a central aperture to permit

the insertion of the rod into the cavity into engagement with the clip.

References Cited

UNITED STATES PATENTS

941,906	11/1909	Beardsley	292—353
2,039,917	5/1936	Michel	292—349
2,043,418	6/1936	Newmark	287—53
2,179,441	11/1939	Webb et al.	287—53
2,950,132	8/1960	Kocsuta	85—8.8 X

MARVIN A. CHAMPION, *Primary Examiner.*

RICHARD E. MOORE, *Examiner.*