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Kneier

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[54] **HANDLE ASSEMBLY**

[75] Inventor: **Joseph W. Kneier,** Chesterland, Ohio

[73] Assignee: **Pendleton Tool Industries, Inc.,** Los Angeles, Calif.

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[52] **U.S. Cl.** ..... **16/126,** 190/58 R

[51] **Int. Cl.** **A47b 95/02**

[58] **Field of Search**. 16/112, 126; 150/12; 312/244; 190/39, 57, 58, 58 R

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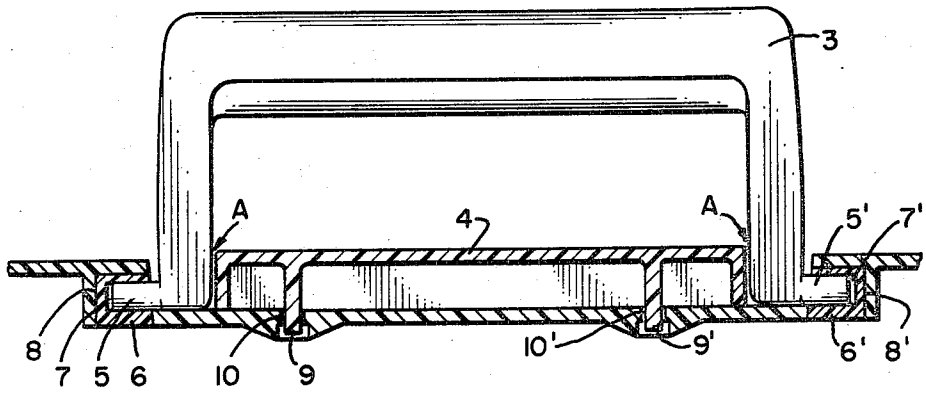
Primary Examiner—Donald A. Griffin

Attorney, Agent, or Firm—D. W. Tibbott

[57] **ABSTRACT**

A handle assembly for use on hand-carried receptacles such as tackle boxes, articles of luggage, bulk containers, trays or the like. The assembly comprises a handle having trunnions formed thereon at either end thereof which extend co-axially and engage trunnion supports disposed in the wall element of the receptacle. The trunnion supports comprise inserts which are placed in pockets formed in the wall element providing a water tight seal between insert and pocket while allowing pivotal rotation of the handle for flush storage thereof in a recess provided in the wall element. A spacer bar secures the trunnions in the trunnion supports by preventing their axial movement once inserted.

7 Claims, 5 Drawing Figures



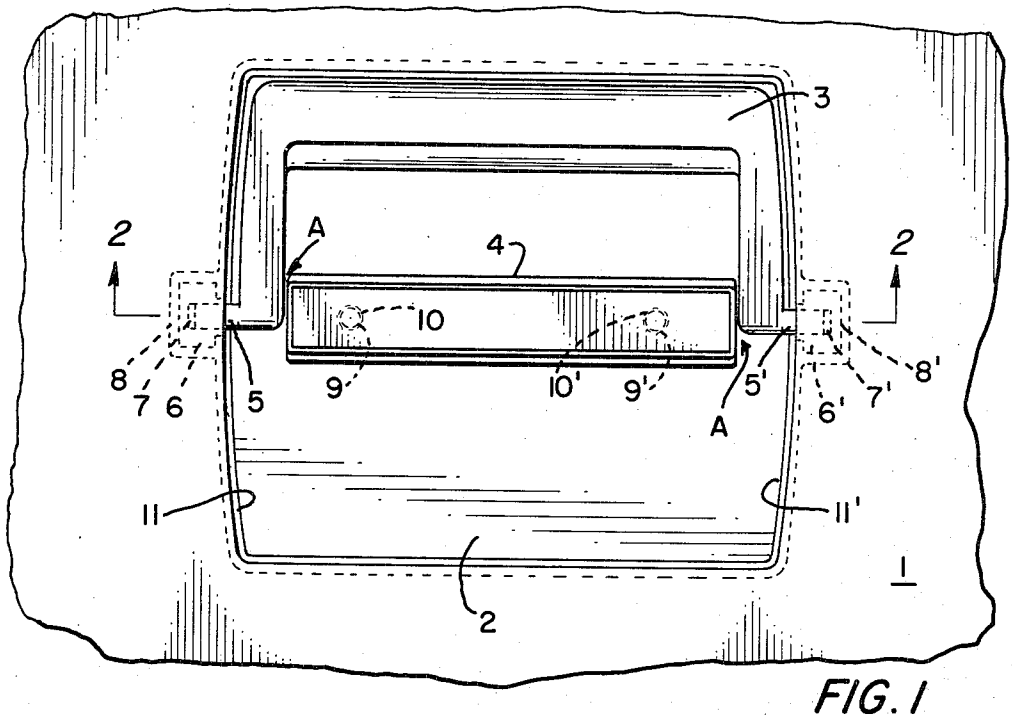


FIG. 1

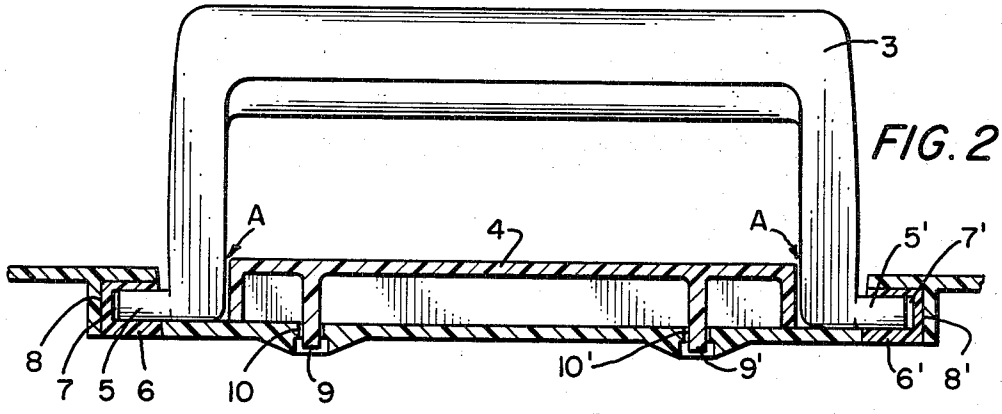


FIG. 2

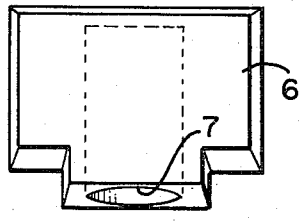
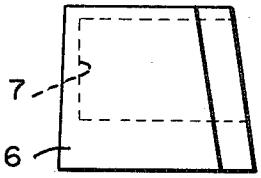


FIG. 5

FIG. 3



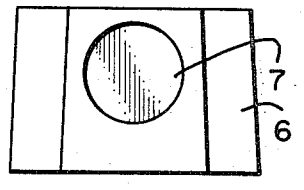


FIG. 4

HANDLE ASSEMBLY

This invention relates to handles for hand-carried receptacles, such as for example luggage. Typically handles are mounted on such receptacles by means of two small metal brackets which are riveted to the receptacle, each bracket having a shaft which runs through a preforation in the ends of the handle to allow pivotal rotation of the handle for storage purposes. A second well known type utilizes a handle having a pair of coaxial trunnions extending from the loop towards each other which engage a base that is in turn riveted or bolted to the receptacle.

An object of this invention is to provide a novel and improved pivotal handle for hand-carried receptacles wherein the handle assembly may be manufactured of moldable materials by conventional means to moderate dimensional tolerances and may be assembled rapidly with simple tools and fixtures.

Another object is to provide a handle assembly sufficiently strong for most hand-carried applications.

Another object is to provide a handle assembly that is water tight and flush storing.

Another object is to provide a handle assembly in which the lifting force on the handle is transmitted to the receptacle wall through a compression member.

Another object is to provide a handle assembly that eliminates the need for metal or other strong fastening devices.

In summary this invention sets forth a handle assembly comprising a handle having co-axial trunnions formed thereon at both ends with the trunnions extending outwardly in opposite directions; means defining a wall element having trunnion support means which pivotally receive said trunnions and mount said handle to said wall element; and means, separable from said wall element and fixedly secured to said wall element, intermediate said trunnions, for securing said trunnions against displacement from said trunnion support means.

An embodiment of the invention comprises a handle having trunnions formed thereon at either end thereof which extend co-axially and engage trunnion supports disposed in the wall element of the receptacle. The trunnion supports include inserts which are placed in pockets formed in the wall element with means providing a water tight seal between the inserts and pockets while allowing pivotal rotation of the handle for flush storage thereof in a recess provided in the wall element. A spacer bar secures the trunnions in the trunnion supports by preventing their axial translation once inserted.

BRIEF DESCRIPTION OF THE DRAWINGS

Further objects and features of this invention will become apparent by reference to the following description, taken in conjunction with the accompanying figures, in which:

FIG. 1 is a plan view of the improved handle assembly having the handle in the stored position;

FIG. 2 is an enlarged section of the improved handle assembly taken along line 2—2 of FIG. 1, having the handle in the up or carrying position;

FIG. 3 is a left side elevation of the trunnion support insert with orientation as disposed in FIG. 2 left side pocket;

FIG. 4 is a front elevation of the trunnion support insert;

FIG. 5 is a plan view of the trunnion support insert.

There is shown in FIG. 1 a receptacle wall element 1 provided with a recessed handle assembly 2 comprising a handle 3 having coaxial trunnions 5 and 5' formed thereon. The trunnions are shown disposed in trunnion support inserts 6 and 6' which in turn are shown disposed in insert pockets 8 and 8' which are formed in spaced-apart shoulders 11 and 11' of a wall element recess. Apertures 7 and 7' are formed in inserts 6 and 6' to receive the trunnions 5 and 5'. Also, a spacer bar 4 is secured to the receptacle wall element by means of pins 9 and 9' which are inserted through preferations 10 and 10' and secured by any conventional means such as heat sealing in the case of plastics, mechanical deformation or by design of the pins to secure by means of interference fit or latch.

FIG. 2 repeats the elements of FIG. 1 in section about line 2—2. The function of spacer bar 4 is to secure the trunnions 5 and 5' of handle 3 against axial movement toward each other and withdrawal from inserts 6 and 6'. This can be readily seen in FIGS. 1 and 2.

The trunnion support inserts 6 and 6' are shown in FIGS. 3, 4 and 5. The trunnion support inserts are disposed in the insert pockets 8 and 8' from the underside of element 1.

FIG. 3 is an expanded view of an insert 6 as are FIGS. 4 and 5 for purpose of clarity; what is depicted for insert 6 is identical for insert 6'. FIGS. 3–5 show that the inserts 6 and 6' and the insert pockets 8 and 8' are tapered to effect an interference fit therebetween. This results in a securing of the inserts in the pockets when fully disposed therein; further, the interference fit forms a leak-proof joint between the elements. Insertion of the handle trunnions 5 and 5' into the apertures 7 and 7' of the inserts further secures the inserts and thereby prevents their extraction from the pockets. FIGS. 1 and 2 depict the spacer bar 4 and locating pins 9 and 9' which project therefrom and are an integral part thereof. The spacer bar and pins are of sufficient strength to resist any axial translation forces of the handle trunnions. A minimum clearance "A" between the spacer bar and trunnions is provided; this clearnace is only sufficient as to not interfere with the handle movement in a pivotal direction.

Since all parts, preferably, are of molded construction, colors of the handle, spacer bar and trunnion supports inserts may be mixed or matched as desired for appearance. The handle is sufficiently flexible by design and material selection to allow sufficient axial deflection of the trunnions to permit insertion of the trunnions in the trunnion support inserts. Use of metals is eliminated in the construction saving expense and avoiding possible corrosion problems from exposure to weather.

As can be seen in FIG. 2 lifting forces on the handle are transmitted directly to the wall element; in this, the trunnion support insert acts primarily as a compression member. Such construction eliminates the need for a fastening means, such as a rivet, strong enough to transmit the receptacle weight to the handle.

Although a preferred embodiment of my invention is shown it will be understood that the invention may be otherwise embodied in that changes in the details and materials of construction and in the form or arrange-

ment of parts may be made without departing from the underlying teaching or principles of this invention within the scope of the following claims.

I claim:

1. A handle assembly comprising: a handle having coaxial trunnions formed thereon at both ends, said trunnions extending outwardly in opposite directions; means defining a wall element having support means which pivotally receive said trunnions and mount said handle to said wall element; and means separable from said wall element and fixedly secured to said wall element intermediate said trunnions for securing said trunnions against axial displacement from said trunnion support means.

2. A handle assembly, according to claim 1, wherein: said trunnion support means comprises a pair of spaced-apart shoulders, formed in said wall element and having apertures formed therein for receiving said trunnions.

3. A handle assembly, according to claim 2, wherein: said wall element has a pocket formed therein adjacent each of said shoulders and an insert disposed in each said pocket; said aperture being a hole of cylindrical configuration formed in each said insert; and said trunnions, through pivotal disposition thereof in said holes cooperate to lock said inserts in said pockets.

4. A handle assembly according to claim 3 wherein: both said pockets and said inserts are tapered; and said inserts are disposed in said pockets with an interference fit, the taper and said fit cooperatively forming a leakproof joint between surfaces of said pockets and inserts.

5. A handle assembly according to claim 4, wherein: lifting forces applied to the handle assembly are transmitted directly to said wall element through said trunnion support means acting primarily in compression.

6. A handle assembly according to claim 2 wherein: said wall element includes a recess of sufficient depth to form said spaced-apart shoulders and wholly confine said handle therein, upon said handle being pivotally disposed therein, so as to render an outermost surface of said wall element clear and unobstructed.

7. A handle assembly according to claim 1 wherein: said trunnion securing means comprises a spacer placed axially between the trunnions in abutting relationship to said handle.

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