LABORATORY SUPPORT CLAMP STRUCTURE

3,272,529 9/1966 Rachman........................ 294/31.2

[52] U.S. Cl. ............................... 16/114 R, 24/278
[51] Int. Cl. .................................. B65D 23/10
[58] Field of Search ......................... 16/114 B, 116 R,
16/114 A, 110 A, DIG. 25; 24/278, 243 CH,
243 LC, 243 AC, 243 SC; 294/31.2;
248/316, 361 A

References Cited

UNITED STATES PATENTS

1,828,106 10/1931 Ertole .................................. 294/31.2
1,977,364 10/1934 Wolcott .......................... 294/31.2
2,693,015 11/1954 Richards et al. ............. 24/243 LC
2,914,831 12/1959 McBrien .................... 24/278
2,979,760 4/1961 Sladky ......................... 16/110 A
3,254,386 6/1966 McBrien ........................ 24/278

FOREIGN PATENTS OR APPLICATIONS

457,784 7/1913 France.......................... 16/114 A
434,852 5/1949 Italy............................ 16/114 A
267,089 5/1950 Switzerland ................... 16/114 A

Primary Examiner—Marion Parsons, Jr.
Attorney—Bedell & Burgess

ABSTRACT

Clamp structure for stably holding one or more laboratory utensils, such as a beaker, test tube, heating pan or other articles, in the hand or on a bench standard. The structure comprises a rigid handle mounting member and associated readily adjustable clamps and handle extensions for ready application to and removal from each other or various other articles to be supported. Preferably the structure includes a utensil support extending from the handle mounting member, and readily operable means for adjusting the support on the handle.

2 Claims, 6 Drawing Figures
LABORATORY SUPPORT CLAMP STRUCTURE

The invention involves improvements on and additions to structure disclosed in earlier patents issued to the present inventor, U.S. Pat. Nos. 2,693,015; 2,914,931 and 3,254,386, which render the clamp structures more versatile and afford additional convenience to the user.

In the accompanying drawings illustrating the invention:

FIG. 1 is a side elevation of a beaker with a rigid C-shaped handle mounting member readily applied to and detachable from the beaker.

FIGS. 2, 3 and 4 are horizontal sections on lines 2-2, 3-3 and 4-4 of FIG. 1.

FIG. 5 is an end view of the upper clamp jaws shown in FIG. 1.

FIG. 6 shows another form of utensil which may be carried by the upper clamp shown in FIG. 1.

In FIG. 1 a cylindrical beaker B to which a rigid handle mounting member, such as an aluminum casting, is readily applied and removed. The handle mounting member includes an upright shank 1 and integral lower and upper hollow lateral arms 2, 3 each terminating at its outer end in diverging jaws 4 and 5, respectively, seated against the side of the beaker. Flexible ties 6 and 7 are doubled so as to encircle the beaker.

The ends of tie 6 are inserted in the associated arm 2 and attached to a threaded drawbar 8 of square cross section and slideably lengthwise in the arm but held against rotation therein by a fixed washer 9 with a square aperture. A nut 11 is rotatably seated on the exterior of shank 1 and is threaded onto drawbar 8. Rotation of the nut in one direction takes up slack and tightens the tie around the beaker. Rotation of the nut in the opposite direction permits the drawbar to move to the left, loosening the tie. If nut 11 feeds off the drawbar the latter may be pulled out of arm 2 and the hook disengaged.

While the attaching elements may be duplicated on arm 3 and a person may grasp the handle shank 1 directly, increased convenience may result if one or more extension handholds 14, 15 are applied to the handle shank. Each handhold is an elongated channel-shaped terminal 16 with diverging prongs 17 on its legs arranged to straddle shank 1 and about lugs 18 on the shank. The structure of the handhold tube and terminal assembly are detailed in a copending application Ser. No. 195,360 filed Nov. 3, 1971.

A takeup nut 20 (FIG. 2) rotatably mounted on the outer end of handhold 14 engages the end of an adjacent drawbar 21 which may be retracted or projected as described above with reference to drawbar 8 to tighten or loosen tie 7 which is shown as a flat band. A transverse screw 17 (FIG. 2) connects the ends of the tie to the split end of drawbar 21 and is readily inserted through the drawbar and inserted, or removed when the bar is projected beyond the end of the tube.

Handhold 15 and associated drawbar 18 and takeup nut 22 are attached to shank 1 by a relatively short flat band 24 which encircles shank 1 instead of the beaker and when tightened, secures the handhold to the shank.

The two handholds 14, 15 may be firmly gripped between the fingers and palm of one hand to manipulate the beaker. Similar handholds may be combined otherwise than as shown; for example, one may be applied to lugs such as 18 but nearer the lower end of shank 1.

An additional clamping device includes a pair of jaws 30, 31 (FIGS. 1, 3), one of which may be integral with or mounted on the upper end of handle shank 1. Jaws 30, 31 grip a cantilever-like tube 33 split at 34 at one end for application to a utensil 35 forming a pan-like container which may be held over the beaker or over a burner if no beaker is used. A drawbar 36, similar to those previously described, is engageable by a takeup nut 37 seated on the outer end of tube 33 to advance or retract the hook 38 which readily connects or disconnects from the pan stem 39.

FIG. 6 shows another type of support utensil comprising an open ring 40 formed of a round rod of metal or plastic and having a stem 41 inserted between the jaws 42 of a tube 43, corresponding to tube 33 in FIG. 3, and secured by a drawbar and hook (not shown but corresponding to drawbar 36 and hook 38 in FIG. 3). The ends of the jaws 42 on tube 43 are seated in recesses 46 in the ring and when nut 45 it tightened the hook and the recesses form a three point engagement with the ring and hold it against dislocation. A relatively small container or test tube (not shown) may be loosely slipped into ring 40 and supported thereby without being engaged by a flexible tie.

The clamping structures and other parts make for ready application and removal of the elements of the laboratory apparatus shown. Other arrangements may be substituted without departure from the spirit of the invention as set forth in the appended claims.

I claim:

1. Handle structure for application to a laboratory container or like utensil, comprising an upright rigid shank having a pair of vertically spaced shouldered lugs on each of its sides, a rigid elongated handhold extending laterally from one side of said shank and having an inner end seated against said lugs, means at the outer end of said handhold for clamping said inner end against said lugs, said means comprising a flexible band doubled lengthwise to form a loop adapted for surrounding a container and extending through said handhold, and a threaded rod engaging the ends of said loops and a takeup nut threaded on the outer end of said rod and seated against the outer end of said handhold for tightening said band about the container and thrusting the inner end of said handhold against said lugs.

2. Handle structure as described in claim 1 in which a plurality of pairs of shouldered lugs are spaced vertically along opposite sides of the upright shank, and individual handholds are secured thereto and are spaced apart so as to be gripped by the human hand for holding the container.