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CONTAINER SUPPORT BRACKET

Filed Oct. 28, 1964

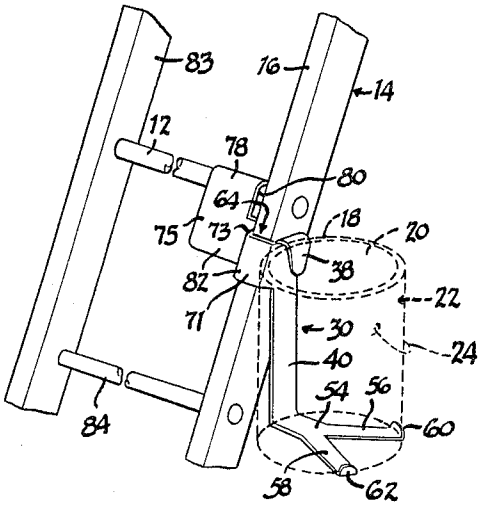


FIG. 2

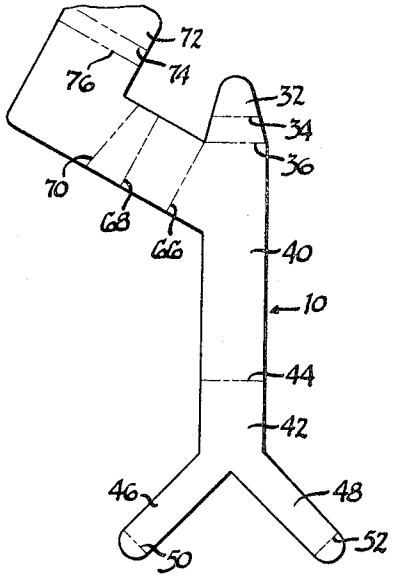


FIG. 1

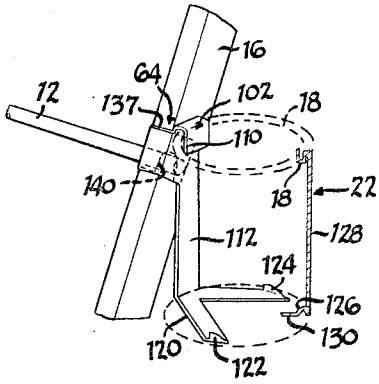


FIG. 4

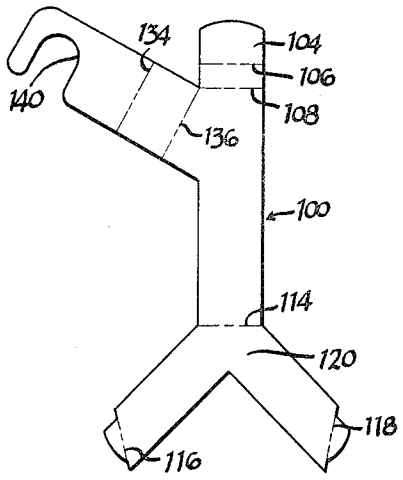


FIG. 3

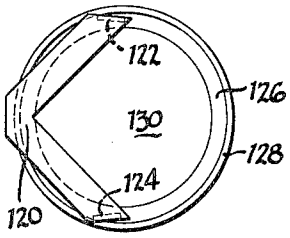


FIG. 5

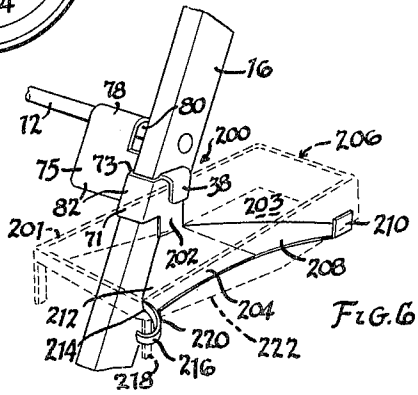


FIG. 6

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CONTAINER SUPPORT BRACKET

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The present invention relates in general to paint can support brackets mountable upon ladders and more particularly to simplified one-piece support brackets, and a method of making same, which are mountable upon a ladder so as to be in engagement with a rail and any selected rung of the ladder and by which a paint or like can of standard commercial construction may be securely held essentially rigid relative to the ladder against inadvertent separation of the paint can from the bracket, e.g., while painting or while moving the ladder.

It is common practice, particularly among amateur house and like painters, for the painter to endeavor to balance himself on a step ladder while holding a paint brush in one hand and a paint can in the other, during the course of painting an elevated area on the exterior or interior of a house or the like. Obvious shortcomings make this practice not only uncomfortable but extremely dangerous to both the painter and to bypassers or observers.

The painter is required to balance himself on the ladder by grasping the ladder with the same hand in which the paint can, usually of gallon capacity, is held. Such a grasp is easily lost during painting, causing the painter to fall or drop the paint can which often leads to property damage and personal injury to the painter and/or observer. Also, by this procedure, the painter is required to ascend and descend the ladder with the brush and bucket in hand each time it is relocated thereby increasing the already high safety risk and the likelihood of paint spillage incident to such a poor practice.

In view of the foregoing disadvantages and because of the inherent inconvenience and painter fatigue consequential of holding both a brush and can while painting upon the ladder, some efforts have been made in the past toward providing a container support bracket designed to be mounted upon a step ladder or the like and to carry a container, such as a standard paint can, independent of the painter.

Such container brackets have proved to be commercially unacceptable, primarily, because (1) the prior art brackets which afforded sufficient stability between the ladder and the bracket and between the bracket and the container to thereby essentially alleviate risk of human danger and paint spillage were unduly complex and, hence, too costly to profitably manufacture, requiring multiple parts formed of separate pieces (for example, see United States Patents 2,735,641 and 2,950,080); and, (2) the prior art brackets which were of sufficient simplicity to be profitably manufacturable lacked the stability between the ladder and the bracket and between the bracket and the container necessary to adequately avoid risk of human danger and paint spillage (for example, see United States Patents 2,912,204 and 3,052,442).

The present invention substantially overcomes the above-identified deficiencies of the prior art by providing a one-piece container support bracket of simplified, durable construction which may be fabricated from a single sheet metal blank and which, when mounted upon a rail and rung of a ladder, essentially unitarily secures the bracket and the container against lateral and longitudinal inadvertent displacement in a properly oriented, usable position, even while moving the ladder from place to place. Yet, the container and bracket may be unitarily repositioned from one ladder rung to another when desired solely by use of the container handle, e.g., the wire handle of a standard commercial gallon paint can. The novel integral bracket of this invention avoids any need for a container-encircling band to provide requisite stability but rather employs structure including a central segment, interposed between the rail and the container, from which three integral, independent cantilevered extensions project (1) to engage the desired rung and adjacent rail of the ladder, (2) to engage the lip of the elevated opening to the container and, (3) to supportingly engage the bottom of the container, respectively.

Accordingly, it is a primary object of the present invention to provide a novel container support bracket characterized by its durability, its simplicity of manufacture and its stability when installed, and having one or more of the following features:

(1) Selectively mountable upon any desired rung of a ladder;

(2) Of simiplified one-piece construction allowing for economical manufacture without use of separate parts formed from separate pieces;

(3) Which accommodates stable and safe securing of the bracket upon the ladder and the container upon the bracket in the desired painting position, so as to (a) prevent inadvertent lateral and longitudinal separation of the bracket from the ladder and of the paint can from the bracket, even during movement of the ladder, with the bracket and paint can mounted thereon, from one working position to another, (b) accommodate ready unitary rung-to-rung repositioning of the bracket and paint can combination simply by grasping and manipulation of the container handle, and (3) accommodate free use of at least one hand to grasp the ladder during use of the bracket, as, for example, when painting as well as when ascending or descending the ladder to thereby provide improved safety characteristics.

These and other objects and features of the present invention will become more fully apparent from the appended claim, as the ensuing detailed description proceeds in conjunction with the accompanying drawings in which:

FIGURE 1 is a plan view of a presently preferred embodiment of the present invention illustrating a one-piece blank from which a container support bracket may be fabricated;

FIGURE 2 is a perspective view illustrating the blank of FIGURE 1, following fabrication, in its ladder mounted, container supporting orientation;

FIGURE 3 is a plan view of another embodiment of the present invention illustrating a one-piece blank from which a container support bracket of this invention will be fabricated;

FIGURE 4 is a front elevational view illustrating the blank of FIGURE 3, following fabrication, in its installed position upon a ladder and carrying a standard commercial paint can;

FIGURE 5 is a cross sectional view taken along line 5—5 of FIGURE 4; and

FIGURE 6 is a perspective view illustrating a third embodiment of the present invention wherein a conventional paint pan, adapted for use with paint rollers, is illustrated in its installed orientation upon another support bracket of this invention, which in turn is mounted upon the rung and rail of a ladder.

Referring now to the drawings in detail wherein like parts are referred to by like numerals throughout, FIGURE 1 illustrates a single sheet metal blank **10** which may be utilized to fabricate the container support bracket of the present invention. Sheet metal blank **10** is preferably given the illustrated pattern by stamping. When appropriately bent along the dotted lines of FIGURE 1, blank **10** will be fabricated into a container support brack-

et **30** having the configuration illustrated in FIGURE 2, so as (1) to permit being hooked over the top of a selected rung **12** of a ladder **14**, (2) to circumscribe three sides of rail **16** of the ladder, (3) to engage lip **18** of elevated opening **20** of a standard commercial gallon paint can **22** having a wire handle **24**, and (4) to support the bottom of paint can **22**.

Fabrication of blank **10** of FIGURE 1 into the configuration of container support bracket **30** of FIGURE 2 may be economically achieved by bending upper projection or extension **32** (FIGURE 1) through essentially 180° generally along dotted lines **34** and **36** to thereby form downwardly extending hook **38** (FIGURE 2). Hook **38** is integrally cantilevered from central segment **40** and is adapted to engage over lip **18** of paint can **22**.

By bending lower extension **42** (FIGURE 1) of flat, planar central segment **40** along dotted line **44** through about 90° until extension **42** lies in a plane essentially perpendicular to the plane containing central segment **40**, cantilevered platform support **54** (FIGURE 2) is provided to support the bottom of paint can **22**. By bending bifurcated arms **46** and **48** of lower extension **42** along dotted lines **50** and **52** (FIGURE 1), vertical tabs **60** and **62** are provided to spacedly engage the sides of paint can **22** adjacent the bottom, as illustrated in FIGURE 2, to thereby provide structure which not only longitudinally supports the weight of can **22** and its contents but which also restrains lateral inadvertent displacement of paint can **22** relative to bracket **30**.

Similarly, rail receiving recess **64** is provided in bracket **30** by bending blank **10** along dotted lines **66**, **68** and **70** (FIGURE 1) into the configuration illustrated by walls **71**, **73** and **75** in FIGURE 2. By bending projection **72** generally along dotted lines **74** and **76** (FIGURE 1) substantially through 180°, hook **78** (FIGURE 2) is thereby formed. Hook **78** provides recess **80** for receiving any selected rung of ladder **14**. For convenience, the structure for rail receiving recess **64** and rung receiving recess **80** is designated rail and rung attachment structure **82**.

Hence, it is seen from the foregoing detailed description that the bracket embodiment of FIGURE 2 provides three separate integral cantilevered extensions, i.e., hook **38**, bottom container support platform **54** and rail and rung attachment **82**, all projecting from central segment **40**, being conveniently fabricated from single blank **10**.

To remove bracket **30** and paint can **22** from rung **12** to rung **84**, for example, the painter need only grasp and lift wire paint can handle **24** to thereby unitarily elevate paint can **22** and bracket **30** in an essentially vertical direction, and to thereafter position hook **78** over top of rung **84** with recess **64** circumscribing three sides of rail **16** adjacent rung **84**. Unitary repositioning of paint can **22** and bracket **30** is largely accommodated by reason of the engagement between hook **38** of bracket **30** and lip **18** of paint can **22**. Since lip **18** also is situated within the recess provided by hook **38** during painting operation, inadvertent detachment of paint can **22** from bracket **30** is prohibited to thereby provide excellent stability characteristics.

Even when considering that there will be slight variations in the angle of inclination of ladder **14** with respect to any vertical wall against which it is placed, the orientation of platform **54** and, accordingly, paint can **22** will be essentially horizontal.

While bracket **30** of FIGURE 2 is illustrated as mounted upon righthand rail **16**, it may also be manufactured opposite hand for mounting upon left rail **83** of the ladder. Furthermore, while the preferred material to be utilized for fabrication of the container support bracket of this invention is sheet metal, it is to be appreciated that certain plastics may be utilized so as to embody the principles of this invention and, hence, are intended to be included within the scope of this invention.

The exact type of ladder upon which bracket **30** is to be mounted may be any conventional ladder, such as a straight ladder, and forms no part of this invention. The cross sectional configuration of the steps of the ladder is similarly not material to the present invention and may be round, flat or any other shape.

Referring now in greater detail to a second embodiment of the present invention, typified by FIGURES 3 through 5, blank **100** is preferaby formed from commercially available sheet metal, as, for example, by stamping. In a manner analogous to the fabrication of blank **10** into bracket **30**, blank **100** may be fabricated into bracket **102** (FIGURE 4) by bending upper extension **104** along dotted lines **106** and **108** (FIGURE 3) to form downwardly extending hook **110**, engageable with lip **18** of paint can **22**, as illustrated in FIGURE 4. Hook **110**, therefore, is cantilevered from flat, planar central segment **112** of bracket **102**. Bending of blank **100** along dotted lines **114**, **116** and **118** (FIGURE 3) provides the bottom support **120** of bracket **102** which generally lies in a plane essentially perpendicular to the plane containing central segment **112** and includes upwardly extending projections **122** and **124** (FIGURES 4 and 5) which, in the installed position, are interposed within annular recess **126** between side wall **128** and bottom **130** of paint can **22**. In this way, paint can **22** is restrained against inadverent lateral and longitudinal displacement with respect to bracket **102**.

By bending blank **100** along dotted lines **134** and **136** in a manner similar to the fabrication of bracket **30** of FIGURE 2, rail receiving recess **137** is thereby provided which is adapted for contiguous engagement with three sides of rail **16**. Recess **140** (FIGURES 3 and 4), formed during the stamping operation, fits over top of rung **12** or any other desired rung, as illustrated in FIGURE 4 to, along with rail receiving recess **137**, restrain bracket **102** against inadvertent lateral or longitudinal displacement from the ladder. Paint can **22** and bracket **102** may also be unitarily repositioned from rung to rung by use of wire handle **24**.

Referring now in greater detail to the third embodiment of this invention as illustrated in FIGURE 6, bracket **200**, preferably fabricated from a single sheet metal blank in a manner analogous to the fabrication of blanks **10** and **100**, is illustrated as supporting paint pan **206**. The rung and rail engaging portions of bracket **200**, as well as the hook for engaging the container lip **201**, are illustrated as being substantially identical to the rung and rail engaging portions and the lip engaging hook of bracket **30** of FIGURE 2. In view of this substantial identity, no further detailed description of those component parts is deemed necessary in conjunction with bracket **200** and, accordingly, none is undertaken. With respect to bracket **200**, rung and rail engaging extension **82** as well as hook **38**, respectively, cantilever from flat, planar central segment **202**.

Integral with and projecting substantially perpendicular from central segment **202** is bottom support platform **204** which is in force transmitting relationship with the essentially horizontal extending portion **203** of the bottom of roller paint pan **206**. Platform **204** is preferably bifurcated to provide arms **208** and **212**. Arm **208** is engageable for the most part with the horizontal portion **203** of the bottom of paint pan **206** across the entire length of arm **208**. Arm **208** terminates in a substantially vertically extending tab **210** provided to restrain paint pan **206** against lateral displacement from bracket **200**.

Arm **212**, which provides the other half of the bifurcation of platform **204**, is twisted through essentially 90° at **214** to provide a generally vertically extending hook **216** within which vertical leg **218** of paint pan **206** is cradled against lateral or horizontal movement with

respect to bracket 200. Edge 220 of hook 216 may be contoured to correspond to the slope contour of tapered bottom portion 222 of paint pan 206 to provide improved vertical stability between pan 206 and bracket 200.

The embodiment of FIGURE 6 is merely illustrative of one way in which the present invention may be embodied for utilization with paint pans adapted for paint roller utilization rather than commercial paint cans normally used in conjunction with paint brushes.

By use of the novel bracket inventive concept of this invention, greater painter convenience is provided and less spillage results, due to the stability characteristics of the invention. The painter is free to wipe paint off the bristles of his brush against the container lip with any desired force without fear of dislodging the paint can from the bracket and without spillage of the paint due to relative movement between the bracket and the paint can.

While the painter need not fear inadvertent dislodging of the paint can from its installed position in the bracket, at the same time, he has free use of at least one hand to ascend and descend the ladder without the need of removing the paint can or the bracket from the ladder. Also, the painter will have a free hand with which to grasp the ladder at all times during painting and, accordingly, will have a greater degree of mobility upon the ladder allowing for coverage of an increased surface area per each ladder position.

In addition to the stability characteristics of the present bracket, the cost of manufacturing a container bracket embodying the concepts of this invention is such as to allow the bracket to be priced sufficiently low so as to be within the purchase power of all potenial consumers.

While the foregoing description of the present invention has been generally confined to container support brackets wherein the container is filled with paint, it is to be appreciated that the present invention is of broader scope, including, for example, container support brackets mountable upon a ladder to support fruit containers, tool containers, or the like.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiments are, therefore, to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claim rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claim are therefore to be embraced therein.

What is claimed and desired to be secured by United States Letters Patent is:

In a container bracket formed from a single piece of sheet metal having a recess for engaging a rung of the ladder and a recess for engaging three sides of a rail of the ladder, the improvement comprising integral means for fixing the container to the bracket for essentially unitary coaction to avoid disengagement of the container or spillage of contents within the container including a downwardly extending hook cantilevered at an elevated position from a wall of the bracket forming one side of the second-mentioned recess to stabilize the container against lateral and longitudinal movement relative to the bracket by engagement with the edge of an elevated opening in the container, said hook cantilevered from an elevated position transmitting to the bracket an upward force applied to the container, and at least one arm of resilient material forming a platform cantilevered at a lower position from said wall forming one side of the second-mentioned recess to further stabilize the container against lateral and longitudinal movement relative to the bracket by engagement with the bottom and side of the container, while engaging said rung and the container and preventing downward, lateral and transverse motion of the container with respect to said rung, said bracket translatable together with the container upwardly with respect to said rung responsive to an upward force being applied to the container.

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