Aug. 28, 1962 A. W. SCHULT 3,051,428

SELF-LEVELING HOLDING DEVICE

Filed May 12, 1960 2 Sheets-Sheet 1

FIG. 1

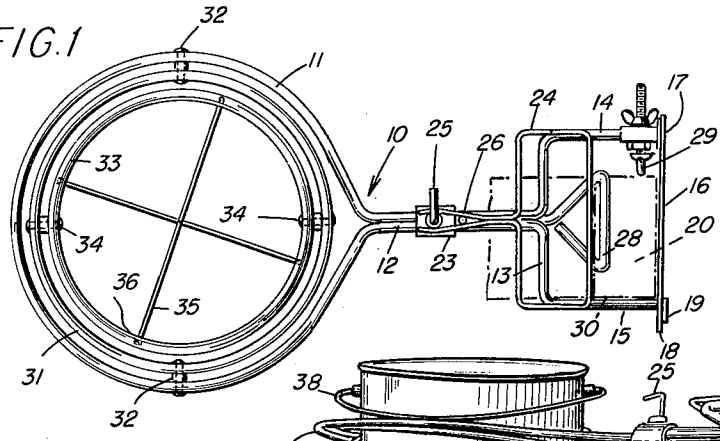
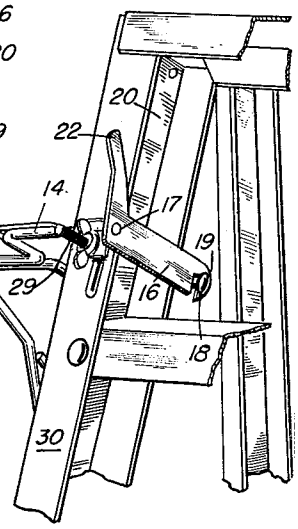


FIG. 2



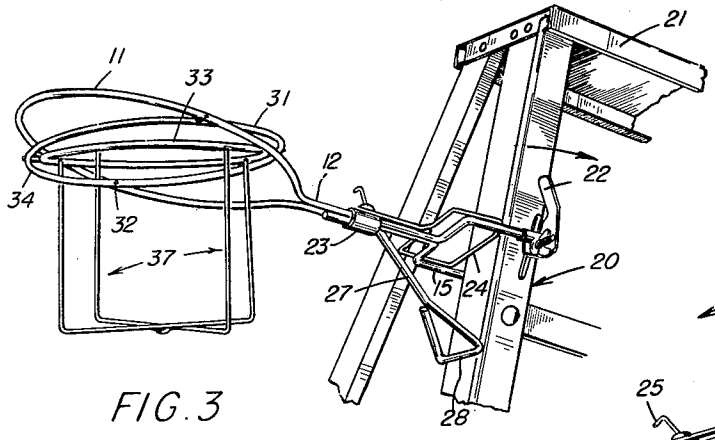
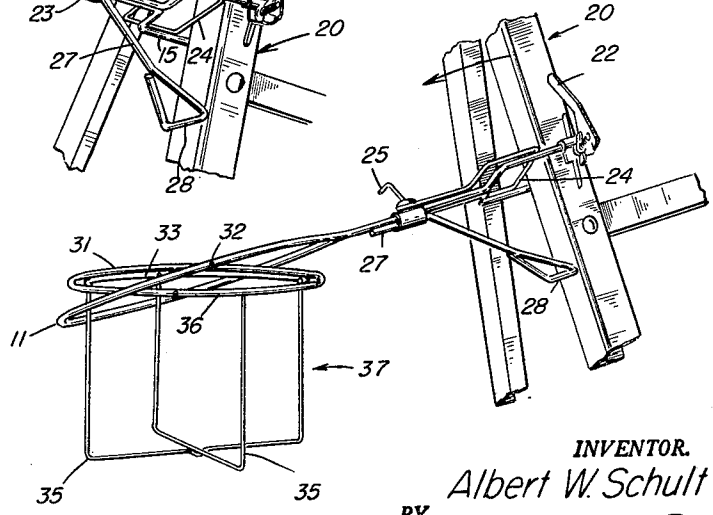


FIG. 3

FIG. 4



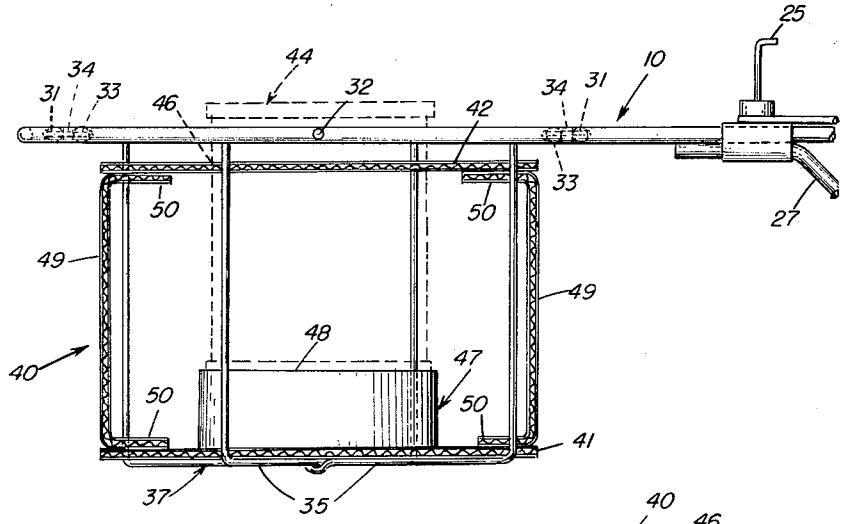
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Filed May 12, 1960 2 Sheets-Sheet 2

FIG. 5



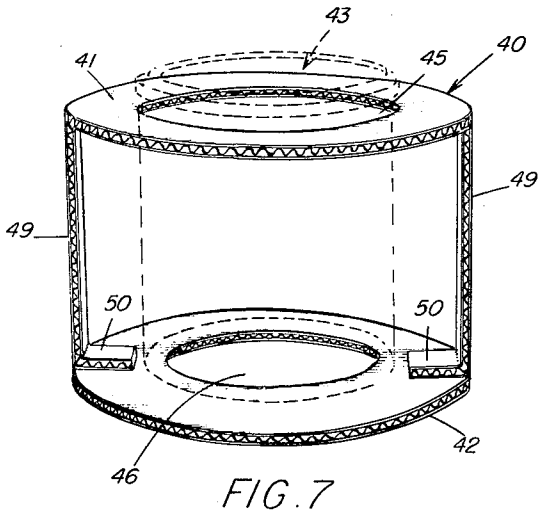


FIG. 7

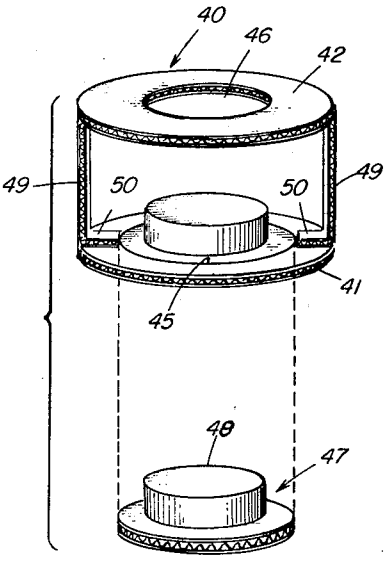


FIG. 6

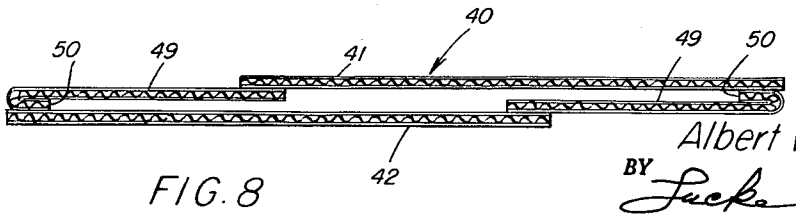


FIG. 8

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SELF-LEVELING HOLDING DEVICE

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16 Claims. (Cl. 248—226)

This invention relates to a stabilized holding device. In particular, it relates to a device for maintaining a container of liquid at all times level relative to the ground regardless of the angle at which the device may be attached to a support, or of the angle of the support itself, to which use, however, it is not restricted.

A practical application of the device is a paint can holder for attachment to a ladder. When it is secured to a ladder upright or side bar, it will prevent a can of paint or other solution from tipping and spilling even though the can is moved with the ladder from one location to another through a series of variant angles.

Brackets are known for rigidly supporting a can of paint in a desired position from ladder rungs or side-pieces thus avoiding the necessity of a painter or the like holding such spillable heavy containers by hand. These brackets, however, usually support a can by its handle, thereby preventing free access to its contents when so suspended. This is especially cumbersome when wide brushes are used as in large scale painting.

Further, it is necessary to remove the paint can from such conventional brackets before moving the ladder in order to prevent accidental dropping of the can or spilling of the paint.

It is an object of the invention to devise a stabilized ladder support which will maintain an object placed therein in substantially perpetual level position under normal use.

Another object of the invention is to devise a ladder support which will afford free and unemcumbered access to the supported object at all times.

A further object is to devise such a stabilized support which can be economically manufactured from readily available materials.

A still further object is to devise a foolproof, stabilized support which can be readily adjusted for use on various types and sizes of ladders, and for either right-handed or left-handed workmen.

Yet another object is to develop a self-adjusting device which can be readily adapted to support variant sizes of objects.

The invention primarily contemplates a holder for a paint can or similar liquid container which is suspended by a series of graduated rings. The inner rings are independently pivoted from an outer annular frame from which the holder depends.

The device also includes a rigid outer frame with adjustable clamping means for attachment to ladder side bars of various sizes. The adjustable clamping means comprises a sliding arm operative within a fixed rectangular frame terminating with an easily operated hook, by which the device may be readily attached and detached from a ladder or similar vertical support. The sliding arm adjusts to variant thicknesses of uprights and a transverse means is further provided which adjusts to variant widths of such uprights.

Further features and advantages of the invention will be apparent in the following detail description and the accompanying drawings which illustrate preferred embodiments of the invention, wherein—

FIG. 1 is a top plan view of a preferred embodiment of the supporting device forming the invention as it would appear attached to an upright before a weighted can or the like is placed therein;

FIG. 2 is a side perspective view of the device attached to the angular left side bar of a ladder and supporting a weighted can in liquid level position;

FIG. 3 is a perspective view of the device showing how the position of the inner ring or basket remains level with the floor when the ladder is tilted to the right as indicated by the arrow;

FIG. 4 is a perspective view of the device showing how the inner ring retains its level position when the ladder is tilted in the direction of the arrow to the left;

FIG. 5 is a side elevation of an auxiliary adapter with removable platform insertable therein for elevating a pint size can to a working level in the supporting device;

FIG. 6 is an exploded perspective view of the adapter showing the manner of placing the removable platform in operative position;

FIG. 7 is a perspective view of the collapsible adapter in reversed position to that shown in FIGS. 5 and 6, supporting a quart size can; and

FIG. 8 is a side elevation of the adapter in collapsed position.

Referring now to the drawings the illustrated holding device is referred to generally as **10** and has three essential parts, a clamping portion, a holding portion and an adjustable portion bridging the other two. The embodiment illustrated consists of a length of tubing or similar rigid material annularly bent in the middle to form an annular frame or outer ring **11**. The two juxtaposed strips thereafter form a centrally disposed rigid narrow bridge portion **12** between the outer ring and an oppositely bent forked portion **13**, terminating in two prongs **14** and **15**. An L-shaped latch **16** pivotally mounted as at **17** joins the free end of prong **14** with the free end of prong **15**. A hook **18** on one end of the latch cooperates with a catch **19** disposed on the opposite prong to form an open rectangular frame adapted to receive a side bar **20** of a ladder **21** therein. The opposite end of the L-shaped latch from hook **18** forms a handle portion **22**. The latch handle extends outwardly from the ladder when secured thereto for easy attachment of the device to and disengagement from a side bar or other vertical post (not shown).

A rider **23** mounted for sliding movement on bridge **12** carries a clamping member or arm **24**. Member **24** disposed over forked portion **13** is adapted to bear against the side of any upright support, thereby providing an adjustable means to embrace the sides of such upright between it and lever **16**.

Although other stop means could be used for the same purpose, a key **25** pegs the rider in any of a series of selected positions **26** which are spaced to coincide with standard ladder widths about which the device is to be secured, see FIG. 1. A brace **27** also carried by rider **23** depends from the bridge **12** for coordinated movement with the gripping member **24**. Its free end terminates in a bearing surface **28** substantially the width of the average side bar, here shown bent back upon itself to form the base of a triangle. Surface **28** may be serrated or otherwise provided with a non-slip sleeve such as rubber.

Adjustable securing means such as clamping screw **29** is provided proximate the operating lever **16** to tighten the device firmly against the ends **30** of the side bar, as clearly shown in FIG. 1, thus adapting the device for use with side bars of various thicknesses as well as variant widths.

The holding portion of the device is formed by an intermediate ring **31** pivoted at two points **32, 32** to the rigid outer annular frame **11** transversely to its axis. Freely pivoted ring **31** equalizes the pitch of the device when tilted vertically. An inner ring **33** pivoted at two co-axial points **34, 34** equalizes the roll from side to side when the device is tilted horizontally. The ends of two wire wickets **35** are fastened as at **36** to the inner ring **33**

to form an open "basket" or paint can holder **37**. Desirably, the wickets may be detached for shipping or storage in flat, parallel position.

As shown in the drawings the device may be ingeniously and economically made from essentially one material. Metal wire may be bent or plastic tubing molded or extruded to the various desired shapes, to which only the lever **16**, rider **23** and clamping screw **29** may thereafter be added.

It will be clearly seen from FIG. 2 that the handle **38** of a gallon size paint can **39** falls flat when the can is placed in holder **37** which affords free access of brushes and the like to the contents of the can.

Although the device is illustrated in FIGS. 2, 3 and 4 as attached to the left side bar of a ladder for left-handed users or other expediency, it will be seen from FIG. 1 that the device is equally usable on the right side bar for normal right-handed use.

Also, if desirable, holder **37** could be made of solid material such as an integral or detachable pail rather than the open wicket structure shown.

Holder **37**, proportioned to receive a large gallon-size can **39** for practical purposes, is provided with an auxiliary adapter **40** for reducing its inner retaining dimension to receive and rigidly support the top and bottom of a quart or pint size can.

Adapter **40** may be fabricated from corrugated board or other substantially rigid material and comprises two reversible hinged plates or lower and upper annular parts **41, 42** which when erected and inserted into holder **37** from the normally collapsed position of FIG. 8 will firmly retain either a quart size can **43** as in FIG. 7 or a pint size can **44** as shown in FIG. 5, depending upon which part is placed uppermost in the holder.

As will be seen from FIGS. 6 and 7 the overall diameter of both parts is identical, but each is provided with a centrally disposed annular aperture of different radial proportions. Lower or bottom part **41** is provided with an aperture **45** large enough to receive a quart can while the opposite or upper part **42** is provided with an aperture **46** small enough to closely fit about a pint size can.

An insert **47** provided with a raised platform **48** fits into the larger aperture **45** of part **41** to raise the top of a pint size can beyond part **42** and inner ring **33** of holder **37** for ready access thereto, see FIGS. 5 and 6.

As illustrated, parts **41, 42** of the adapter are joined by two spacing brackets **49** which may be affixed to the parts as by adhesive or staples and bent to form hinge portions **50**. It is obvious that the adapter **40** may be integral or collapsible or made in any shape or size to fit any rigid or pivoted container and be provided with any desired shape of apertures and insertable platforms without departing from its basic construction.

If desired, wire members or the like, not shown, may be pivotally secured to ring **33** for hooking over the open rim of smaller cans retained within the adapter.

The forms of the invention here described and illustrated are presented merely as examples of how the invention may be embodied and applied. Other forms, embodiments and applications of the invention, coming within the proper scope of the appended claims, will, of course, suggest themselves to those skilled in the art.

I claim:

1. A self-leveling holding device for a ladder and the like comprising an article supporting portion, and an adjustable clamping portion, said clamping portion having a rectangular frame adapted to receive a side bar of the ladder therein, a pivotal latch forming the fourth side of said frame and a movable arm cooperating with said latch to clamp said side bar therebetween.

2. A device according to claim 1 wherein a rigid bridge connects said supporting portion and said clamping portion, a rider is mounted for sliding movement on said bridge and said arm is carried by said rider.

3. A device according to claim 2 wherein a brace depends from said bridge, said brace cooperating with said clamping portion to reinforce said device and hold it in rigid position when attached to a vertical support.

4. A device according to claim 3 wherein said brace is carried by said rider for coordinated movement with said arm.

5. A device according to claim 4 wherein anchoring means is carried by said rider.

6. A device according to claim 5 wherein coordinating means disposed on said bridge cooperates with said anchoring means to secure said arm in any selected position thereof.

7. A device according to claim 4 wherein a strip of wire is bent to form said brace and said movable arm.

8. A device according to claim 3 wherein said brace is provided with a non-slippable surface to frictionally engage said vertical support.

9. For use with an attachment for ladders and the like having a clamping portion supporting a holder for paint cans and the like wherein said holder is provided with an auxiliary portion to rigidly retain smaller objects placed therein, said portion comprising two mutually spaced horizontal parts, each of said parts provided with a centrally disposed aperture, one of said parts having a larger aperture to receive larger objects and the opposite part having a smaller aperture to receive smaller objects, and a centrally disposed raised platform for insertion in said larger aperture to raise the upper edge of a small object above said opposite part for ready access thereto, each of said parts surrounding the upper surface of such objects to prevent tipping thereof relative to said holder when placed in said portion.

10. For use with an attachment for ladders and the like having a clamping portion supporting a holder for paint cans and the like wherein said holder is provided with an auxiliary portion to rigidly retain smaller objects placed therein, said portion comprising two mutually spaced horizontal parts and two or more brackets, said brackets spacing said parts for reversible use of said portion in said holder, each of said parts provided with a centrally disposed aperture, one of said parts having a larger aperture to receive larger objects and the opposite part having a smaller aperture to receive smaller objects, each of said parts surrounding the upper surface of such objects to prevent tipping thereof relative to said holder when placed in said portion.

11. A device according to claim 10 wherein said brackets are hingeably secured to said parts to collapse said auxiliary portion when not in use.

12. An attachment for ladders and the like comprising clamping means for adjustable attachment to ladder sidebars of varying size, a four point balanced supporting means including a complementary series of counter-pivoted rings, a rigid bridge connecting said clamping means with said supporting means, an annular frame for said supporting means, and a three sided right angled frame for said clamping means, said frames and said bridge being formed from a single strip of folded wire.

13. An attachment for ladders and the like comprising clamping means for adjustable attachment to ladder side bars of varying size, a four point supporting means and a self leveling holder freely pivoted from said supporting means, said holder provided with an auxiliary portion to rigidly retain smaller objects therein, said auxiliary portion including two mutually spaced annular parts, each of said parts provided with a centrally disposed annular aperture, a first of said parts having a larger aperture to receive large objects therein and a second of said parts having a smaller aperture to receive small objects therein, and a raised platform insertable in said larger aperture to raise the top of a small object above said second part for ready access thereto.

14. An attachment for ladders and the like comprising clamping means for adjustable attachment to ladder side bars of varying size, a four point supporting means and

a self leveling holder freely pivoted from said supporting means, said holder provided with an auxiliary portion to rigidly retain smaller objects therein, said auxiliary portion including two mutually spaced annular parts, each of said parts provided with a centrally disposed annular aperture, a first of said parts having a larger aperture to receive large objects therein and a second of said parts having a smaller aperture to receive small objects therein, and two or more brackets, said brackets spacing said parts for reversible use of said portion in said holder.

15. A device according to claim 14 wherein said brackets are hingeably secured to said parts to collapse said auxiliary portion when not in use.

16. For use with a container, an auxiliary device to rigidly retain smaller objects in upright position therein, said device comprising a plurality of mutually spaced horizontal plates to fit within said container, each of said plates being provided with an aligned aperture, one of said plates having a larger aperture to receive larger objects therein and another of said plates having a smaller

aperture to receive smaller objects therein, a plurality of brackets spacing said plates for reversible use in said container, and a raised platform insertable in said larger aperture to raise the top of a smaller object above said second mentioned plate for ready access thereto.

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