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3,226,075

ARTICLE HOLDER

Filed Dec. 6, 1963

3 Sheets-Sheet 1

Fig. 1.

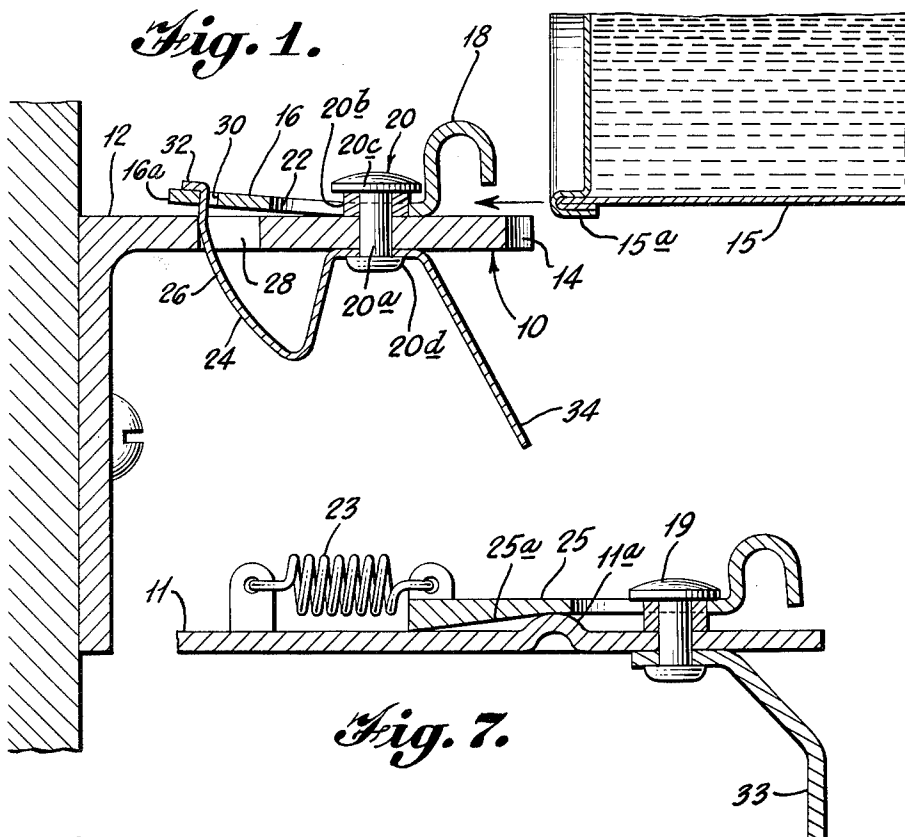


Fig. 7.

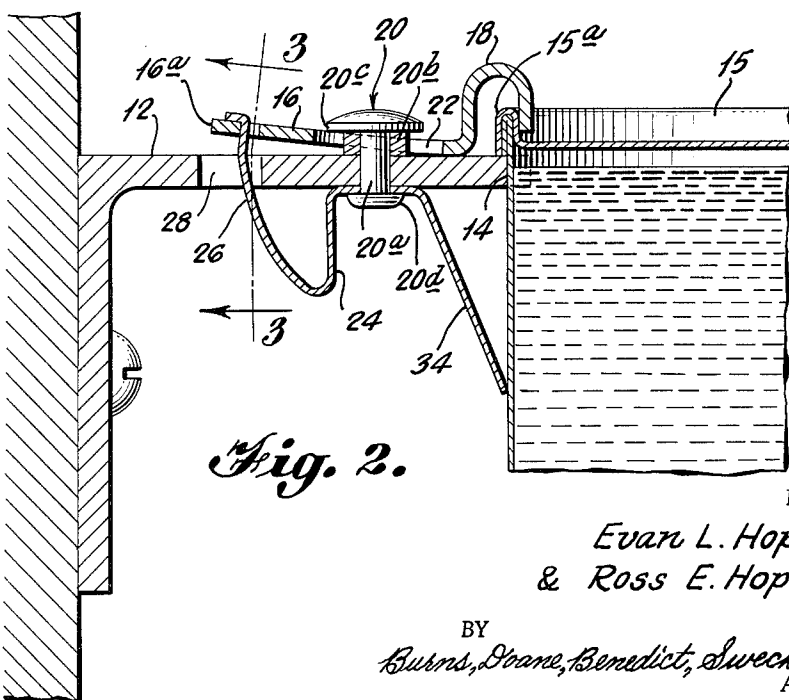


Fig. 2.

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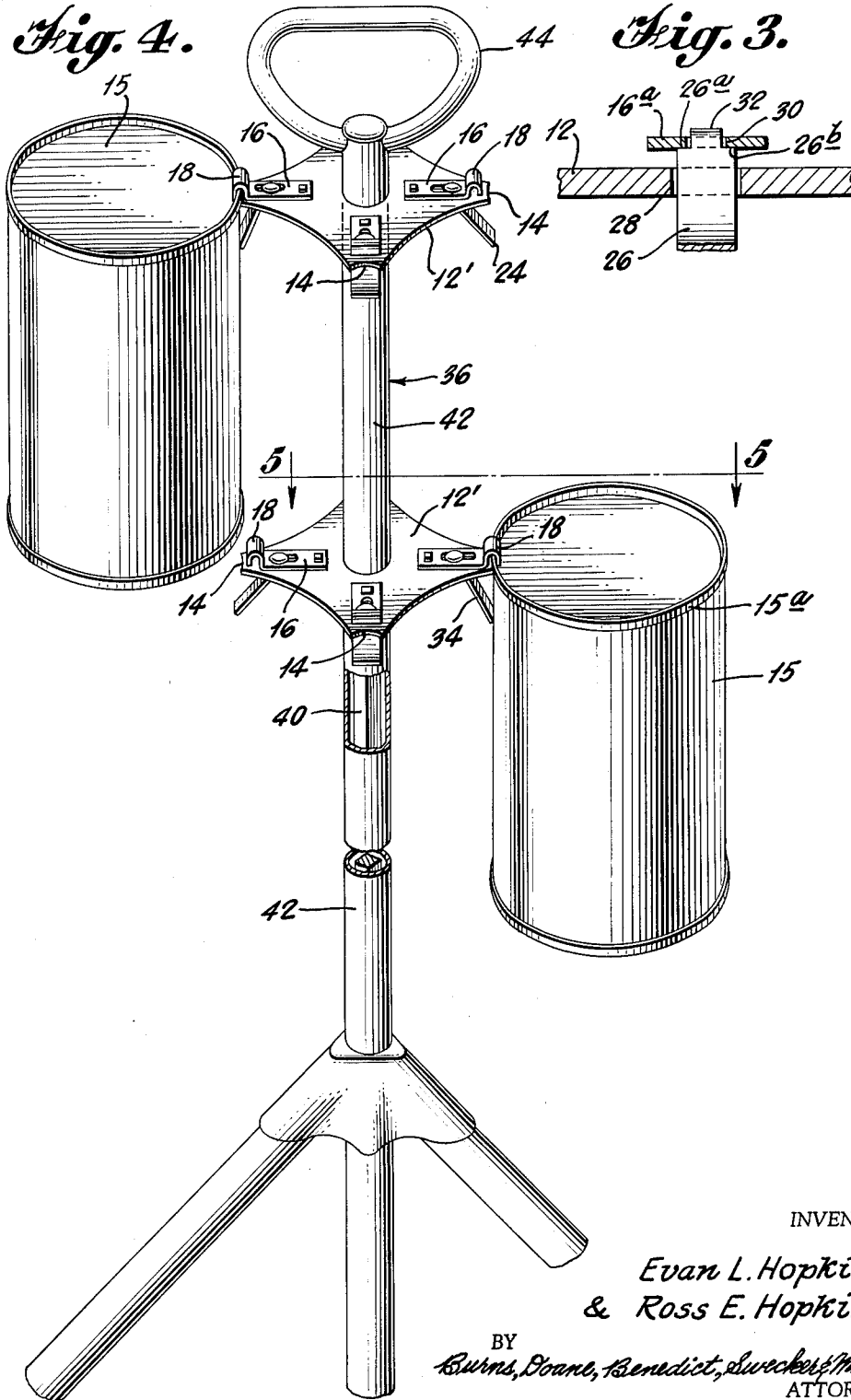
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Fig. 4.

Fig. 3.



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Fig. 5.

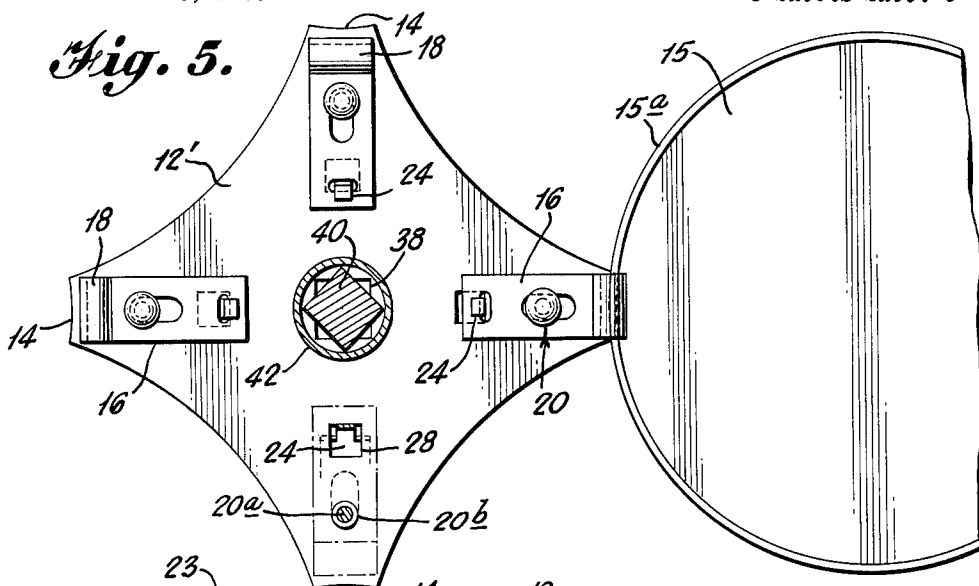


Fig. 8.

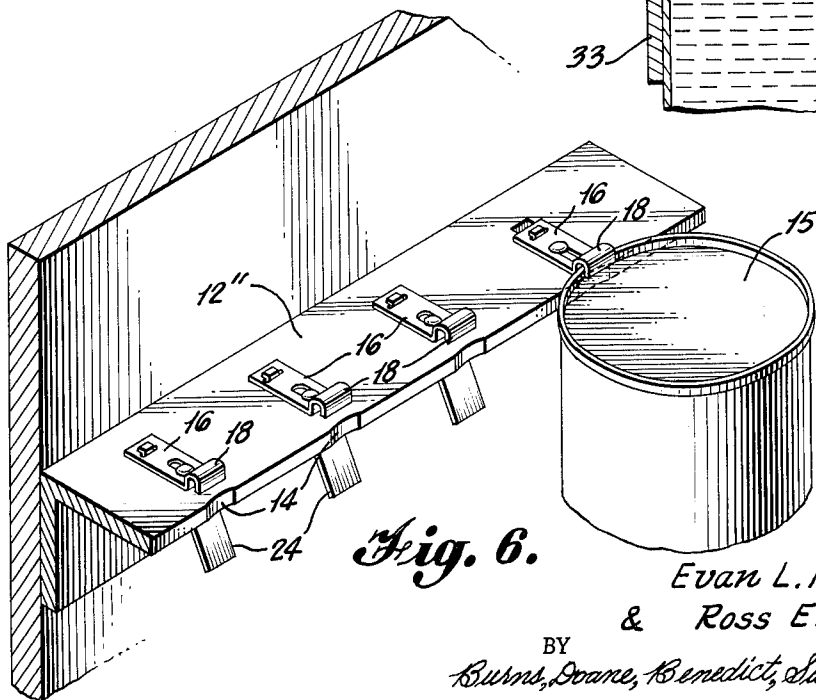
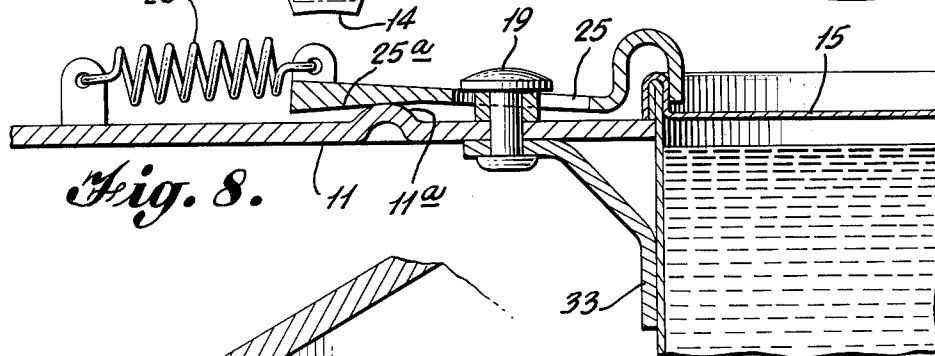


Fig. 6.

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ARTICLE HOLDER

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Filed Dec. 6, 1963, Ser. No. 328,575
5 Claims. (Cl. 248—313)

This invention relates to article holders. More particularly, it pertains to a holder adapted to be secured to a supporting surface, which holder includes means for gripping the rim of a container so that the container is suspended in an upright position.

Numerous brackets or holders have been provided heretofore for holding containers such as cans or the like in a manner where they are easily accessible. Many such mechanisms are limited in their use and are applicable only to a particular type of container due to the peculiarities of the construction of the holder. Also many of such holders or brackets are of complex structure and are expensive to manufacture.

Particular problems have involved the provision of holding mechanisms which are capable of firmly supporting articles such as rimmed cans, which enable such articles to be easily and rapidly engaged, and which enable engaged articles to be easily released.

It is an object of this invention to provide a holder wherein a container may easily be attached thereto and removed therefrom.

Another object of the invention is to provide such a holder which is adapted to the supporting of different size containers or containers having differently dimensioned rims.

Yet another object of the invention is to provide such a holder including means for providing a particularly positive and effective article-holding action.

It is a further object of this invention to provide a holder which is comprised of very few elements and which may be manufactured economically.

These and other objects of the invention may be accomplished according to one embodiment of the invention wherein the holder comprises a base member having a gripper arm slidably mounted thereon. The free end of the gripper arm is adapted to engage the rim of a container. Spring means are mounted on the base member to urge the gripper arm to a retracted position relative to an edge of the base member. In this manner, when the rim of a container is positioned in the free end of the gripper arm, the spring causes the rim to be held firmly between the free end of the gripper arm and the edge of the base member.

The spring, in one embodiment, may be formed so that a portion thereof engages the wall of a container held by the holder to maintain the container in an upright position.

The slide incorporated in the preferred embodiment of the article holder may be mounted so as to be capable of limited pivotable movement about a midportion thereof so as to provide an enhanced article gripping action and to facilitate engagement with differently dimensioned articles.

One preferred embodiment of the holder is illustrated in the accompanying drawings in which:

FIGURE 1 is a side, sectional view of the holder, showing the base member of the holder secured to a supporting surface and a container, partially shown, in position for engagement with the holder;

FIGURE 2 is a view of the FIGURE 1 holder supporting a container;

FIGURE 3 is a transverse, sectional view of a portion of the FIGURE 1 holder, as viewed along the section line 3—3 of FIGURE 2;

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FIGURE 4 is an elevational view of the holder with a modified base member carried on an upright standard;

FIGURE 5 is a sectional view taken on line 5—5 of FIGURE 4 with a container, partially shown, supported in the holder;

FIGURE 6 is a perspective view of the holder with a modified base member;

FIGURE 7 is a side, sectional view of an alternative form of the FIGURE 1 holder; and

FIGURE 8 is a view of the FIGURE 8 holder supporting a rimmed can.

The holder, indicated generally at 10, includes a base member 12, which is formed preferably of substantially rigid material and is adapted to be supported on suitable supporting means. The base member 12 may be formed in many shapes depending on the desired use. The base member 12, as illustrated in FIGURE 1 is formed in a substantially L shape and is adapted to be secured to an upright surface. The base member 12 is provided with an edge portion 14 adapted to engage the wall of a container 15, FIGURE 2, supported by the holder 10. In the illustrated embodiment the edge portion 14 is concave to conform to the cylindrical wall of the container. Obviously, however, the edge 14 may be straight or otherwise configured.

A gripper arm 16 is slidably mounted on the upper surface of the horizontal portion of the base 12 as viewed in FIGURES 1 and 2 and is provided with a hook 18 adapted to engage the rim of the container 15. The hook 18 preferably is formed in an inverted U-shape. The particular shape of the hook 18, however, could be modified to adapt its use with containers of various shapes, if so desired.

Arm-mounting means such as rivet 20, or other suitable means, extends through an elongated slot 22 in the arm 16 to hold the arm 16 on the base member 12 for sliding movement relative thereto.

A spring 24 urges the arm 16 to a retracted position relative to the edge portion 14 of the base member 12, as shown in FIGURE 1.

The spring 24 is formed of a strip of resilient material and is secured substantially midway thereof to the base member 12 by the rivet 20. One portion of the spring 24 is formed in a substantially V-shape with the free end 26 thereof extending through an opening 28 in the base member 12 and engaging the gripper arm 16 through a hole 30, to urge the gripper arm to its retracted position. The tip of the spring may be bent over as indicated at 32 to secure the spring to the arm 16. The other leg portion 34 of the spring 24 is inclined downwardly from the connection of the spring to the base member 12. Obviously, the spring portion 34 might be replaced by an article-holding leg which was not an integral portion of the spring 24, such as that subsequently described in connection with FIGURE 7.

Preferably, the shank 20a of the rivet 20 is of such a length as to exceed the combined thicknesses of the base 12, arm 16, and spring 24. A washer 20b may be positioned on the shank 20a of the rivet 20 beneath the upper rivet head 20c so as to securely position the rivet 20 on the base 12 and cause the lower rivet head 20d to firmly hold the spring 24 against the lower side of the base 12. Rivet head 20c, in a conventional fashion, may comprise a washer and a flattened shank end.

Washer 20b is disposed within the arm slot 22, with the lower side of the rivet head 20c being engaged by the washer 20b and spaced above the upper side of the arm 16 as shown in FIGURE 1. As will be appreciated, the maximum diameter of the rivet head 20c will exceed the width of the slot 22 so as to prevent the arm 16 from being withdrawn from the holder base 12.

With the rivet head 20c being spaced somewhat from

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the arm 16, it will be apparent that the arm 16 will be capable of limited movement between the upper surface of the base 12 and the lower surface of the rivet head 20c. Because of this vertical freedom of the movement, the arm 16 is pivotable to a limited extent about the restraining rivet head 20c.

As shown in FIGURE 3, the spring end 26 is provided with shoulders 26a and 26b adapted to engage the lower side of the arm 16 while the arm-retaining, spring tip 32 projects from between the shoulders 26a and 26b through the arm hole 30.

As shown in FIGURE 1, the spring portion 24 is configured such that, with the arm 16 in its retracted position, the inner arm end 16a is supported by spring shoulders 26a and 26b somewhat above the upper surface of the holder base 12. As a consequence of this arrangement, the arm 16 is held in a canted or pivoted position as shown.

It will now be understood that a container may be placed in the holder 10 by bringing the rim of the container 15 into engagement with the hook 18 of the gripper arm 16, as generally shown in FIGURE 1. The end of the hook 18 is spaced from the base member 12 so as to permit the rim of the container to be slid thereunder. The container may then be pivoted in a clockwise direction as viewed in FIGURE 1 to the position shown in FIGURE 2 where the container will be supported by the holder 10. The spring 24 urges the gripper arm 16 to its retracted position so that the hook 18 pulls the rim of the receptacle 15 into abutting engagement with the edge portion 14 of the base member 12 to suspend the container therefrom. The inclined portion 34 of the spring 24 will engage the wall of the container and assist in holding the container firmly in an upright position in the holder 10.

The limited freedom of movement of the arm 16 between the base 12 and the rivet head 20c enables the hook 18 to readily accommodate to the height of the can rim 15a.

As the arm 16 is moved outwardly on the base 12, the compressing of the V-shaped portion of spring 24 causes the spring end 32 to move through an arc toward the can 15 so as to tend to raise the spring abutments 26a and 26b and thus bias the arm end 16a upwardly. This biasing of the arm 16, which tends to cause it to rotate about rivet head 20c in a clockwise direction when the holder is viewed as shown in FIGURES 1 and 2, tends to urge the arm hook 18 downwardly generally toward the base 12 so as to provide an enhanced and more positive gripping of the container rim 15a. It will thus be appreciated that the V-shaped portion of the spring 24 functions as a unique arm positioning means to both bias the arm 16 to its retracted position and to tend to cause the canting of the arm 16.

When it is desired to remove the container 15 from the holder 10, it is necessary only to pivot the container, counterclockwise as viewed in FIGURE 2, and slide the rim of the container from beneath the hook 18. It will thus be understood that the holder 10 provides means for supporting a container whereby the container may be easily and quickly secured to and removed from the holder.

The particular shape of the base member 10 depends on the desired use of the holder and may take many shapes and forms. As illustrated in FIGURES 4 and 5, the base member 12' is formed with a plurality of edge portions 14, gripper arms 16 and springs 24. This form of base member 12' is adapted to be supported on an upright standard 36 for displaying cylindrical containers suspended therefrom. Each base member 12' is provided with an opening 38 at its center which is adapted to slide onto a square rod 40 of the standard 36. As illustrated, a plurality of base members 12' may be placed on the standard 36 in spaced relation. Cylindrical spacers 42 which may be slid onto the rod 40 maintain the base

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members 12' in spaced relation. A handle 44 may be threadably secured to the top of rod 40.

The base member 12' as disclosed in FIGURE 6 is formed in the shape of an elongated angle bar and is adapted to be secured to a vertical surface such as a wall or the like. The base member 12' is provided with a plurality of edge portions 14, gripper arms 16, and springs 24 for supporting a plurality of containers.

Those skilled in the article-holder art will recognize that arrangements other than that shown in FIGURES 1 and 2 may be employed for obtaining the sliding and canting arm movements heretofore described. For example, as shown in FIGURE 7, an arm 25, generally equivalent to the arm 16 shown in FIGURE 1, may be urged to a retracted position by a coil spring 23 extending between the inner end of the arm 25 and a frame portion. The arm 25 may be secured to a base member 11 by a rivet 19 in a manner corresponding generally to the arm-securing arrangement shown in FIGURE 1. In this alternative embodiment, a can or article-supporting leg 33 may be provided which would correspond to the portion 34 of the spring 24 shown in FIGURE 1.

The canting movement of the arm 25 may be achieved by employing means such as a cam surface 25a formed on the lower side of the arm 25. Cam surface 25a would slope generally downwardly in a direction toward the arm-restraining spring 23. Cam surface 25a would cooperate, in a conventional camming fashion, with an abutment 11a carried on the upper surface of the base 11. Thus, as the arm 25 moved outwardly of the base 11, the cooperation of cam surface 25a and the abutment 11a would positively induce clockwise canting or pivoting movement of the arm 25 about the restraining rivet 19 so that the arm 25 assumes the article-gripping position shown in FIGURE 8.

The article holders of this invention are characterized by several advantages which have been made apparent in describing its structural details and mode of operation.

These holders may be fabricated from a relatively small number of elements, each of which may be formed economically from relatively inexpensive material, and easily assembled. The complete assembly is light in weight.

The holders are readily adapted to the supporting of diverse articles and will readily accommodate to containers having differently dimensioned rims. The holding action of the sliding arms is particularly positive and reliable. The mode of manipulation of the holders is such that unskilled personnel will readily comprehend the simple movements required to engage articles with them and effect their subsequent release.

A particular advantage resides in the relatively inconspicuous nature of the holder which facilitates its being utilized for display purposes. An additional and related major advantage involves the ease and rapidity with which containers may be disengaged from the holders.

While the invention has been described and illustrated in certain embodiments, it is understood that changes and modifications may be made without departing from the invention as claimed.

We claim:

1. A holder comprising a base member having an edge portion adapted to engage a container, said base member adapted to be mounted on support means, an arm slidably mounted on said base member, spring means secured to said base member, said spring means being connected to one end of said arm, a hook on the free end of said arm, said hook being urged by said spring means to grip the rim of a container against said edge portion for supporting a container in suspended relation therefrom, and said spring means having one end thereof in position to engage a container to maintain the container in a substantially upright position.

2. A holder comprising a base member having an edge portion adapted to engage a container, said base member

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adapted to be mounted on support means, an arm slidably mounted on said base member, spring means secured to said base member, said spring means being connected to one end of said arm, a hook on the free end of said arm, said hook being urged by said spring means to grip the rim of a container against said edge portion for supporting a container in suspended relation therefrom, and means spaced from said edge in position to engage the container and cooperate with said edge to maintain the container in a substantially upright position.

3. A holder comprising a base member having an edge portion adapted to engage a container, an arm having hook means at one end adjacent said edge for gripping the rim of a container against said edge, means for mounting the arm on the base for pivotal movement of the hook means forwardly toward and rearwardly away from said edge and for slidable movement of the arm toward and away from said edge, actuating means acting on the arm to cause the hook means to grip the rim of a container for resiliently urging the arm rearwardly away from said edge and for pivoting the hook means on the arm toward said edge upon sliding movement of the arm forwardly toward said edge, and means spaced from said edge in position to engage the container and cooperate with said edge to maintain the container in a substantially upright position.

4. A holder device as defined in claim 3 wherein the actuating means includes leaf spring means extending between the base member and the end of the arm oppo-

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site the hook for forcing said end to pivot away from said base member upon movement of the arm forwardly toward said edge.

5. A holder device as defined in claim 3 wherein the actuating means includes spring means extending between the base member and the arm, and abutment means and a cooperating cam surface between the base member and the arm, whereupon movement of the arm forwardly toward said edge, the relative movement between the abutment means and the cam surface forces the hook means toward said edge.

References Cited by the Examiner

UNITED STATES PATENTS

15	330,991	11/1885	Mathews	24—263
	1,170,414	2/1916	Christensen	248—313
	1,589,521	6/1926	England	297—179
	2,316,290	4/1943	Schenbeck	248—316.2
	2,367,256	1/1945	Atkins	248—210
20	2,503,123	4/1950	Morlan	248—305
	2,504,583	4/1950	Pachic	248—313
	2,554,120	5/1951	Pisano	248—238
	2,598,479	5/1952	Wraith	248—211
	2,702,641	2/1955	Arthur	211—71
25	2,711,813	6/1955	Larin	248—215
	2,913,211	11/1959	Francis	248—229
	3,091,424	5/1963	Yegge	248—313

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