

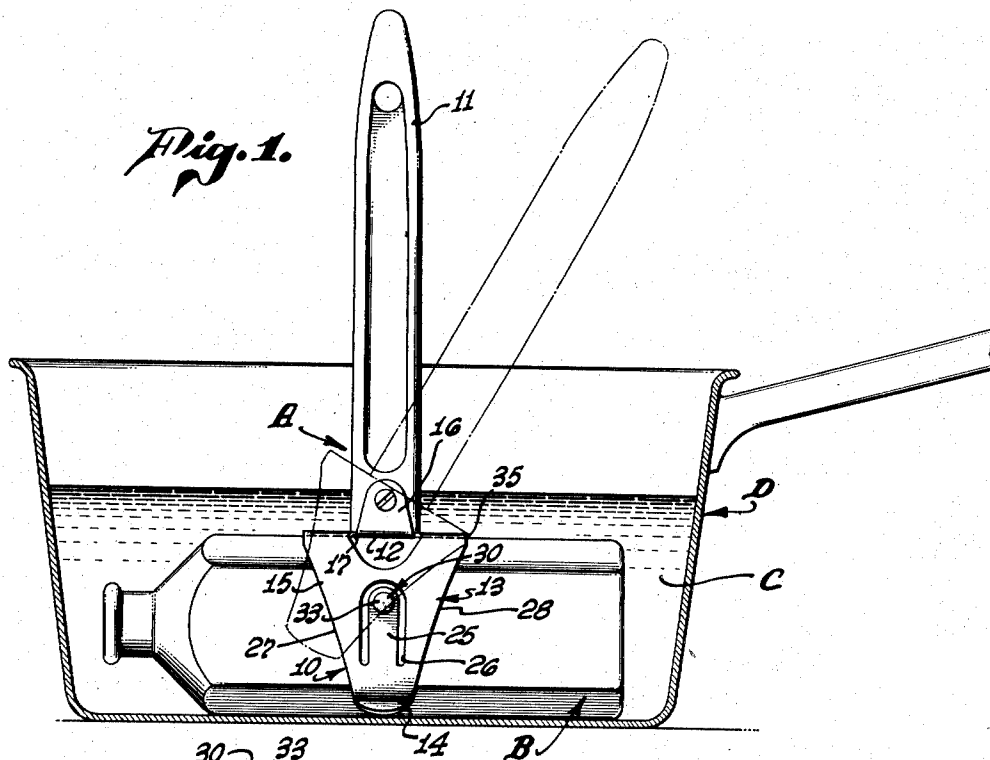
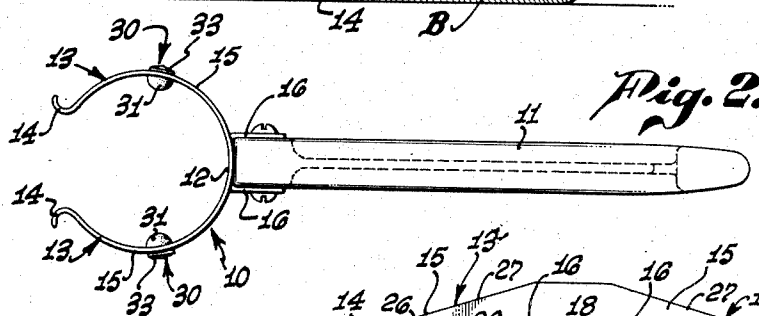
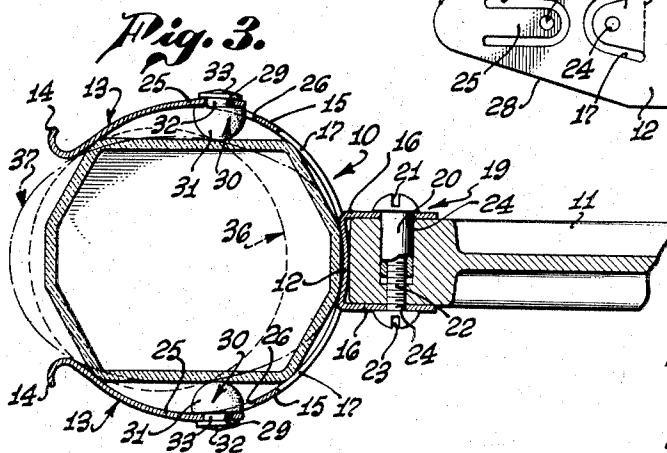
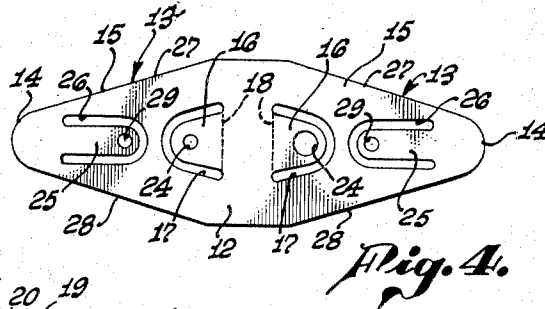
Oct. 13, 1953

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CONTAINER HOLDER

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3 Sheets-Sheet 1



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Fig. 9.

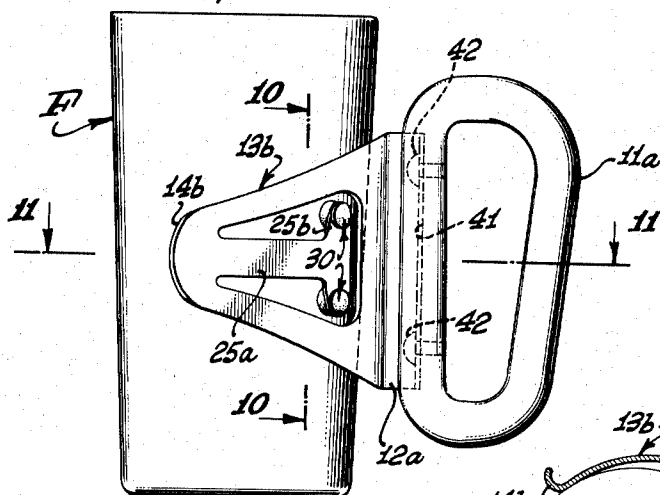


Fig. 10.

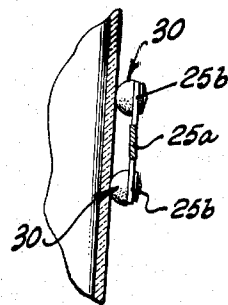


Fig. 11.

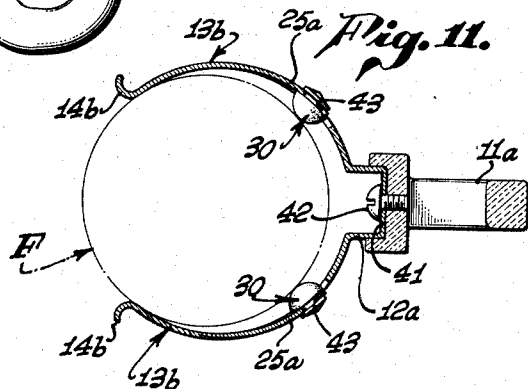


Fig. 12.

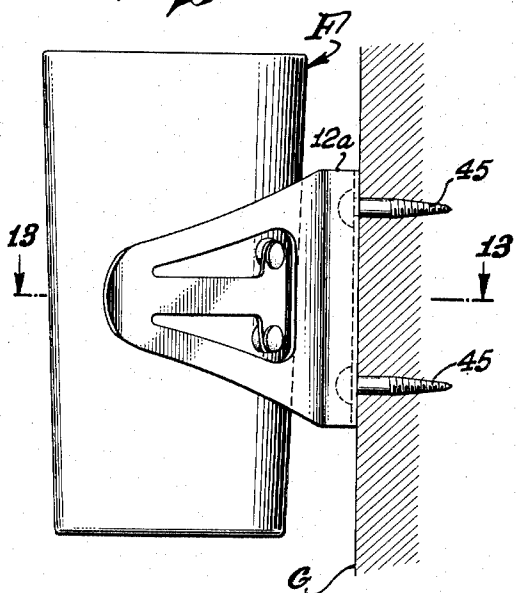
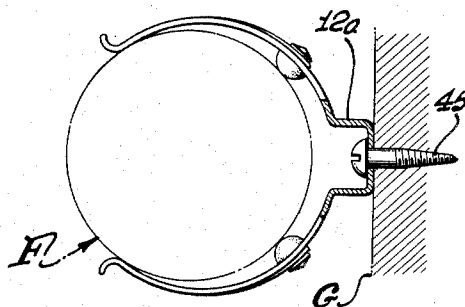


Fig. 13.



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Fig. 5.

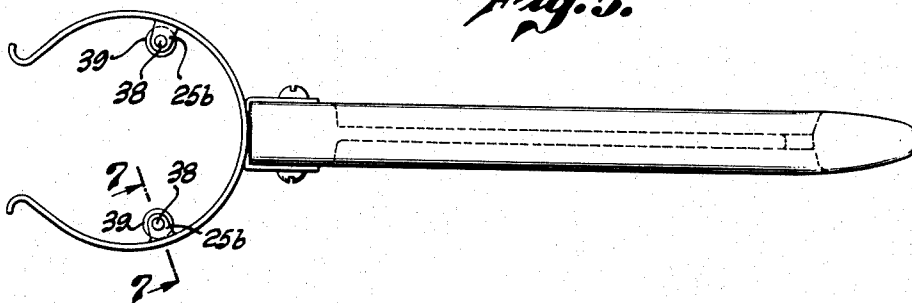


Fig. 6.

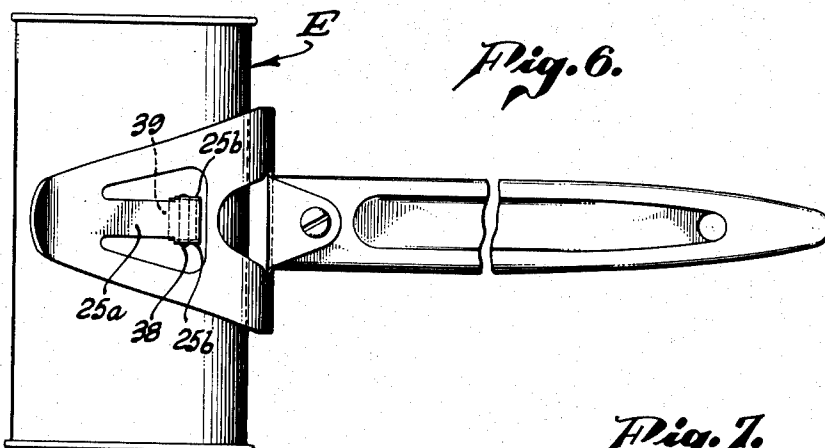


Fig. 7.

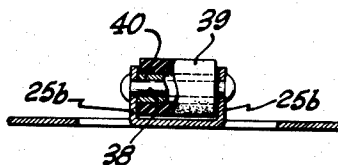
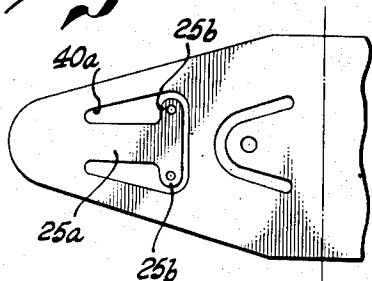


Fig. 8.



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CONTAINER HOLDER

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5 Claims. (Cl. 294—99)

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The present invention relates to holders for detachably grasping articles, and more particularly to holders adapted to grasp bottles, drinking glasses, sanitary cans, and the like.

An object of the invention is to provide improved holders for transporting articles, especially of the type above indicated, which are capable of exerting a firm and definite gripping force on the articles, and which can still be released readily from the articles whenever desired by simply manipulating the holders themselves.

A further object of the invention is to provide holders for transporting articles, which are of simple and sturdy construction, and which have increased gripping force on the articles to prevent dropping of the latter while being transported.

Another object of the invention is to provide a holder capable of frictionally grasping and firmly holding articles of various shapes and sizes.

Yet another object of the invention is to provide a holder capable of gripping and holding an article and of facilitating rotation of the article in the holder.

A further object of the invention is to provide a holder adapted to grasp a tapered article with a firm and definite gripping force, and yet be readily releasable from the article by manipulation of the holder itself.

This invention possesses many other advantages, and has other objects which may be made more clearly apparent from a consideration of several forms in which it may be embodied. Such forms are shown in the drawings accompanying and forming part of the present specification. These forms will now be described in detail, illustrating the general principles of the invention; but it is to be understood that such detailed description is not to be taken in a limiting sense, since the scope of the invention is best defined by the appended claims.

Referring to the drawings:

Figure 1 is a side elevation of an article holder disposed in operative relation with respect to a bottle submerged in water within a pan;

Fig. 2 is a top plan view of the article shown in Fig. 1;

Fig. 3 is an enlarged longitudinal section through the holder shown in Fig. 1;

Fig. 4 is a plan view of a pattern from which the gripping portion of the holder can be made;

Fig. 5 is a top plan view of another embodiment of the holder;

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Fig. 6 is a side elevation of the holder shown in Fig. 5 supporting a sanitary can;

Fig. 7 is an enlarged section taken along the line 7—7 on Fig. 5;

Fig. 8 is a partial pattern from which the gripping member shown in Figs. 5 and 6 is made;

Fig. 9 is a side elevation of still another form of the invention, disclosed as supporting a drinking glass;

Fig. 10 is a fragmentary section taken along the line 10—10 on Fig. 9;

Fig. 11 is a cross-section taken along the line 11—11 on Fig. 9;

Fig. 12 is a side elevation of another embodiment of the invention; and

Fig. 13 is a cross-section taken along the line 13—13 on Fig. 12.

In the form of invention illustrated in Figs. 1 to 4, inclusive, a holding device A is shown for frictionally gripping articles B, such as bottles, drinking glasses, sanitary cans and the like. This device can be disposed over the article B by a simple manual manipulation, and can be released readily from the article in a simple and expedient manner.

The holder A comprises a forward gripping portion 10 attached to a suitable longitudinally extending handle 11, that is preferably made of a non-heat conducting material, such as synthetic resin, wood, or the like. The gripping portion 10 of the device is preferably made from a single piece of spring material, such as brass or steel, which may be plated, if desired. It is curved in a generally circular or arcuate form, to provide a central rear portion 12 and opposed concave spring-like jaw members 13 extending in a forward direction therefrom. The leading ends 14 of these jaws preferably are curved in an outward direction to facilitate slipping of the jaws over the article to be gripped.

The gripping portion 10 covers an arcuate extent of substantially greater than 180 degrees, in order that the leading ends 14 extend toward each other and are separated from each other by a substantially lesser distance than the intermediate portions 15 of each spring jaw.

In order to attach the gripping portion 10 to the handle 11, a pair of ears 16 are formed in the gripping member by producing a plurality of opposed V or generally U-shaped cuts 17 in the spring metal (Fig. 4) and then bending the ears 16 that these cuts form rearwardly toward each other until they are disposed parallel to one another. The ears are bent rearwardly along hinge lines 18 so that they lie snugly on

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opposite sides of the forward portion of the handle 11.

The ears can then be secured to the handle by means of a bolt 19, including a female nut portion 20 that has a screw driver slot 21 therein, and a cooperating threaded shank 22 inserted in the nut portion and also having a screw driver slot 23 therein. The nut and shank portions 20, 22 extend through suitable aligned holes 24 in the ears 16 and handle 11, and upon being tightened, the bolt firmly secures the gripping portion 10 of the device to the handle portion 11. It is to be noted that the central base 12 of the gripping portion engages the forward end of the handle 11 along an extended line or surface of contact to prevent pivotal movement of the gripping portion relative to the handle about the axis of the bolt.

A plurality of opposed spring arms 25 are also formed integrally in the gripping member 10 along the intermediate portions of the spring jaws 13. These arms may be formed by providing outwardly facing, generally U-shaped slots 26 in the gripping member, as shown most clearly in Fig. 4. When the gripping member is formed into its arcuate shape, as shown in Figs. 2 and 3, the spring arms 25 face in a rearward direction, with the rear ends of the arms free from attachment from the main jaws 13 of the gripping member, and with the other ends of the arms integral with the forward ends of the spring-like jaws 13.

The shape of the gripping member 10, preparatory to its formation into the form disclosed in Figs. 1, 2 and 3, is shown in Fig. 4, in which the V-shaped cuts or slots 17 face toward each other and form the attaching ears 16, and the U-shaped cuts 26 face away from each other to form the spring arms 25. It is to be noted that the top and bottom edges 27, 28 of each side 13 of the gripping member 10 taper from the central portion 12 and converge in an outward direction, thereby producing a central portion which is substantially longer (in a horizontal direction as seen in Fig. 1) than the leading ends 14 of the opposed gripping jaws 13. The central portion 12 is preferably made longer to facilitate removal of the device A from an article B which it grips, and also to increase the spring force with which the opposed jaws 13 grasp the article.

In order to increase the frictional force of engagement between the device and the article supported therein, the rear ends of the spring arms 25 are provided with holes 29 to allow friction buttons 30, made of rubber, or equivalent material, to be attached to each arm. The heads 31 of these buttons face toward each other interiorly of the gripping member 10, each button being secured to the arm by an intermediate portion 32 passing through the arm hole 29 and by an outwardly directed rubber flange 33 engaging the exterior of each arm. The buttons 30 extend within the gripping member and are disposed at an intermediate portion 15 along each jaw between the forward portion 14 of the latter and the central base portion 12 of the gripping member.

The device A shown in Figs. 1, 2 and 3 may be readily placed in gripping relation upon an article B, such as a nursing bottle. This bottle is disclosed in Fig. 1 as being located within boiling water C disposed within a suitable pan D. When it is desired to grip the bottle, the gripping member 10 is forced transversely over the

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bottle B, the forward ends 14 of the spring jaws 13 separating sufficiently to permit the gripping member to be placed to the desired extent over the bottle. The leading ends 14 of the jaws engage the forward sides of the bottle, while the rear side of the bottle may rest against the base 12 of the gripping member. In addition, the friction buttons 30 also bear upon the sides of the bottle (see Fig. 3).

The bottle may then be elevated from the pan of boiling water, being held in a vertical position without danger of dropping from the holding device. The bottle is gripped securely between the leading ends 14 of the opposed jaws 13, and also between the friction buttons 30 that are urged inwardly by the inherent tendency of the spring arms 25 to shift inwardly. When the holder is placed over the bottle, the latter springs the arms 25 in an outward direction, the arms thus having a spring force imparted to them, causing the buttons to grip the bottle. The spring force of the opposed jaws 13 against the bottle is increased by virtue of the fact that the rear portion of each jaw is attached to the central portion 12 over a substantially greater length than the vertical length of the leading portions 14. This arrangement is provided by converging the upper and lower edges 27, 28 of the jaws toward their leading ends.

When it is desired to remove the article, such as the nursing bottle B, from the holding device, the bottle is placed down upon a suitable supporting surface, such as the bottom of the pan D, shown in Fig. 1, and the handle is then moved in a downward direction, in order to pry the gripping member 10 from the bottle. This prying action is facilitated by the extended length of the central portion 12 of the gripping member. If the rocking action on the handle 11 occurs to the right, as shown in dotted lines in Fig. 1, the right hand edge 25 of the central portion acts as a fulcrum upon the bottle, constituting a lever of the first class and serving to afford a mechanical advantage in sliding the forward ends 14 of the jaws along the exterior surface of the bottle, until the jaws 13 are disengaged completely from the latter.

The device, shown in Figs. 1 and 3 as gripping a bottle of generally octagonal cross-section, can, with equal facility, grip articles of various shapes as, for example, the cylindrical object 36 shown by the dotted circle in Fig. 3, or the oval article 37 disclosed in broken lines in Fig. 3. With respect to the cylindrical object 36, a four-point gripping effect is achieved by the leading ends 14 of the jaws and the rubber buttons 30. In the case of the oval object 37, a five-point gripping action may occur, including the above-named four points, as well as frictional contact between the object 37 and the central portion 12 of the gripping member 10.

In the form of invention disclosed in Figs. 5, 6 and 7, the gripping members 13 and the spring arms 25 of the other embodiment described above have been modified to enable the holder to grasp sanitary cans E and the like, and yet permit the can to be rotated during opening of the can by a conventional type of wall supported can opener. The rearward ends of the spring arms 25a have inwardly directed parallel bearing supports 25b, in which a bearing pin 38 is mounted. A roller 39 of rubber or the like is rotatably mounted on the pin 38 between the arms. If desired, a steel bushing 40 may be interposed between the rubber

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roller 39 and the pin 38 to reduce the friction therebetween.

The rollers 39 extend inwardly toward each other from the rear ends of the arms and are adapted to grasp an article, such as the cylindrical sanitary can E shown in Fig. 6. These rollers 39 will grasp the can to one side of a central transverse plane through the can axis, while the leading jaws 14 grip the can on the other side of the central plane.

The holding device is placed over the can E and removed therefrom in the same fashion as described in connection with the other form of the invention. The can illustrated in Fig. 6 is supported at four points, there being a greater frictional gripping force achieved between the rollers 39 and the article E, than is achieved by the spring metal contact of the leading portions 14 of the jaws 13. When the article is held in a vertical position, such as shown in Fig. 6, the rollers 39 are effective to prevent its downward sliding within the gripping member, since the axes of the rollers are vertical. However, if it is desired to rotate the can, as when placing its upper end within a wall can opener, such action can occur readily, since the rollers 39 will rotate about axes that are parallel to the sanitary can axis, while still preventing downward sliding of the can in the holding device.

A partial pattern is shown in Fig. 8, from which the gripping member disclosed in Figs. 5 to 7, inclusive, can be made. As shown, a flat piece of spring metal, shaped generally as in Fig. 4, is provided with a slot or cut 40 to form the rearwardly extending arm 25a, that has oppositely directed fingers 25b extending towards the marginal edges 27, 28 of the jaw 13. These fingers are bent inwardly of the member to the position shown in Fig. 7, in which they form spaced parallel supports for the bearing pin 38.

In the form of invention illustrated in Figs. 9, 10 and 11, the gripping member has been especially designed for holding an object F, such as a drinking glass or mug. To facilitate holding of this article and its use for drinking purposes, the handle 11a is formed of generally ear-shape, and is provided with a longitudinal groove 41 into which the U-shaped central or base portion 12a of the gripping member extends. This portion is firmly secured to the handle by a plurality of screws 42.

The general arrangement of the gripping member shown in Figs. 9, 10 and 11 is similar to that shown in Figs. 1 to 8, inclusive. It has opposed jaws 13b with leading edges 14b, and also the rearwardly extending spring arms 25a in the intermediate portions of the jaws. However, these spring arms have oppositely directed fingers 25b similar to the pattern arrangement shown in Fig. 8, but instead of bending these fingers inwardly to form bearing supports, they are provided with holes 43 at their end portions into which the friction buttons 30, of rubber or similar material may be inserted. These buttons 30 extend inwardly toward each other and are adapted to grip the glass F or other container frictionally.

In view of the longitudinally spaced relation of the friction buttons 30 on each side of the gripping member, and in view of the leaf spring characteristics of the rearwardly extending arms 25a, the latter may twist to a certain extent so as to incline the buttons and bring them into frictional engagement with longitudinally spaced points along the exterior of a tapered glass F, as shown most clearly in Fig. 10. Thus, the holding

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device may be snapped onto a tapered container F by moving it transversely thereover, and the container may be supported from the handle 11a and used in the same manner as a cup containing a holding ear. When it is desired to remove the container from the holding device, the container F is gripped and is moved laterally away from the holding device.

In use, the container is held between the leading portions 14b of the jaws on one side of the container, and by the opposed four buttons 30 on the other side of the container. The spring arms 25a tend to urge the buttons inwardly into gripping frictional engagement with the container, insuring against inadvertent dropping of the latter from the device.

In the form of invention shown in Figs. 12 and 13, the same general type of holding device is disclosed as in Figs. 9, 10 and 11, except that the gripping member is attached to a wall G, or other stationary support by a plurality of screws 45 extending through the central base portion 12a of the device. This arrangement allows a glass F to be moved laterally into holding engagement and from holding engagement with respect to the gripping device, the mode of support being essentially the same as described in the form of invention shown in Figs. 9, 10 and 11.

The inventor claims:

1. A unitary gripping member comprising a pair of substantially arcuately extending flexible members forming jaws joined together in opposed relationship for substantially circumscribing and resiliently gripping an article, the extremities of the jaws being spaced from each other, that portion of the gripping member opposite the extremities of said jaws extending axially of said arcuate jaws a distance comparable with the maximum separation of said flexible members; and a support connected to said portion.

2. A unitary gripping member comprising a pair of substantially arcuately extending flexible members forming jaws joined together in opposed relationship for substantially circumscribing and resiliently gripping an article, the extremities of the jaws being spaced from each other, the edges of each jaw converging toward the extremities thereof, that portion of the gripping member opposite the extremities of said jaws extending axially of said arcuate jaws a distance comparable with the maximum separation of said flexible members; and a support connected to said portion.

3. A unitary gripping member comprising a pair of substantially arcuately extending flexible members forming jaws joined together in opposed relationship for substantially circumscribing and resiliently gripping an article, the extremities of the jaws being spaced from each other, that portion of the gripping member opposite the extremities of said jaws extending axially of said arcuate jaws a distance comparable with the maximum separation of said flexible members; a support connected to said portion; and independently flexible arms on each of said jaws at an intermediate portion thereof and adapted to engage said article.

4. A unitary gripping member comprising a pair of substantially arcuately extending flexible members forming jaws joined together in opposed relationship for substantially circumscribing and resiliently gripping an article, the extremities of the jaws being spaced from each other, the edges of each jaw converging toward the extremities thereof, that portion of the gripping member op-

posite the extremities of said jaws extending axially of said arcuate jaws a distance comparable with the maximum separation of said flexible members; a support connected to said portion; independently flexible spring arms located at an intermediate portion of said jaws, said spring arms forming free ends extending away from said extremities of said jaws; and friction elements on the free ends of said spring arms adapted to engage the article.

5. A unitary gripping member comprising a pair of substantially arcuately extending flexible members forming jaws joined together in opposed relationship for substantially circumscribing and resiliently gripping an article, the extremities of the jaws being spaced from each other, that portion of the gripping member opposite the extremities of said jaws extending axially of said arcuate jaws a distance comparable with the maximum separation of said flexible members; ears projecting from said portion and in a direction away from said extremities of said jaws; a handle extending between the ears and secured thereto; and independently flexible arms on each of said jaws at an intermediate portion thereof and adapted to engage said article.

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