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MEANS FOR HOLDING RECEPTACLES

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2 Sheets-Sheet 1

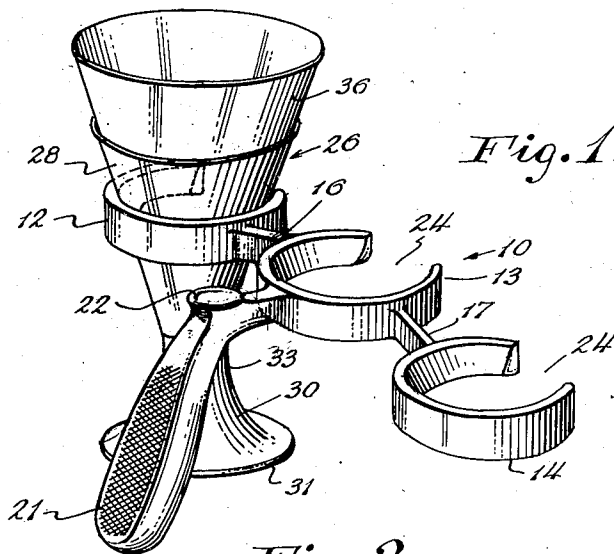


Fig. 1.

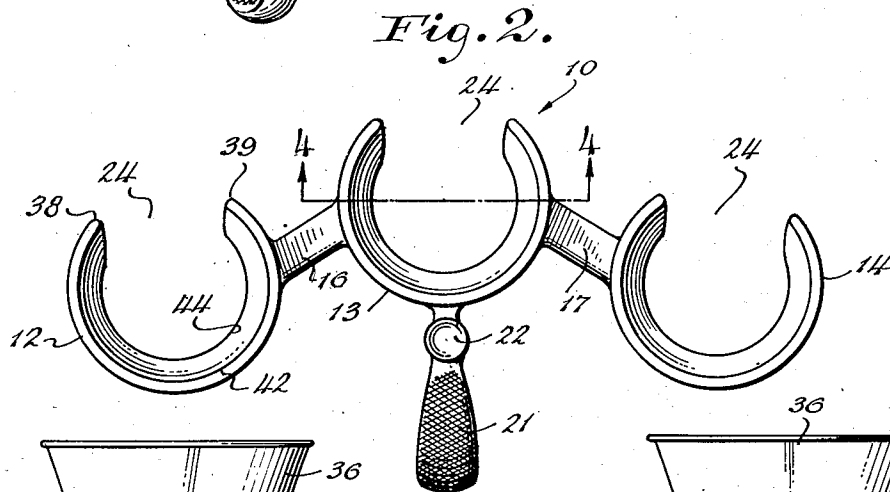


Fig. 2.

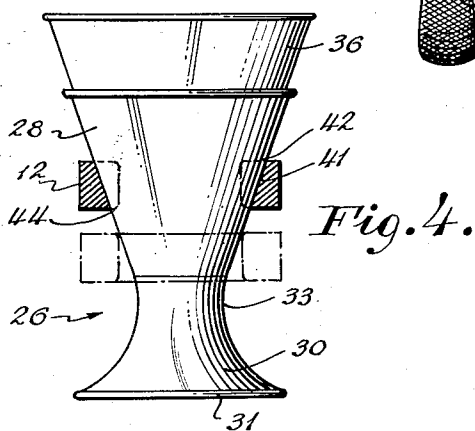


Fig. 3.

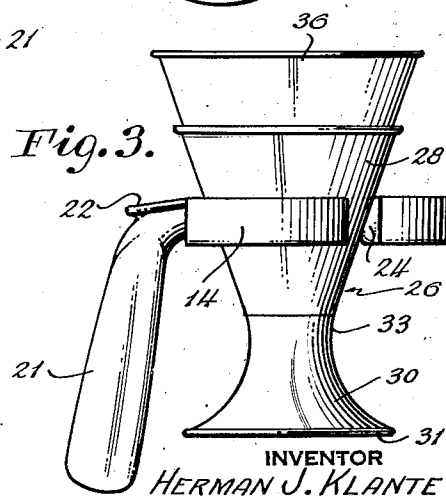


Fig. 4.

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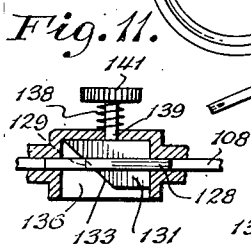
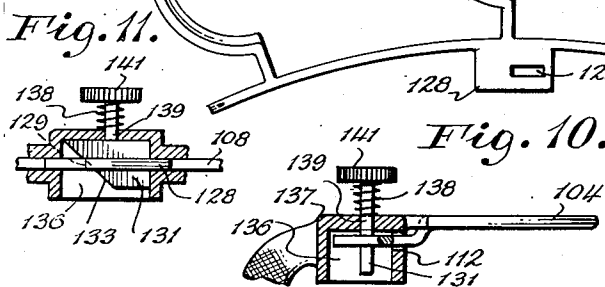
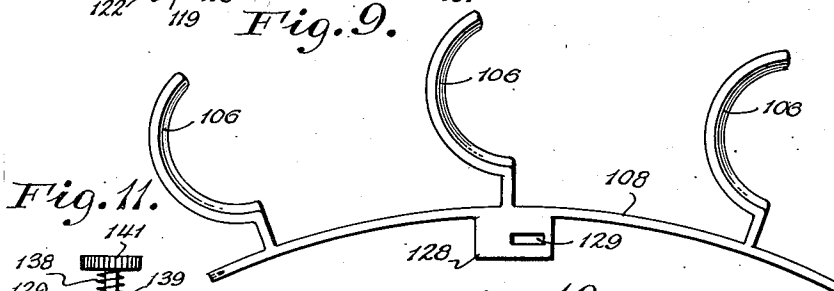
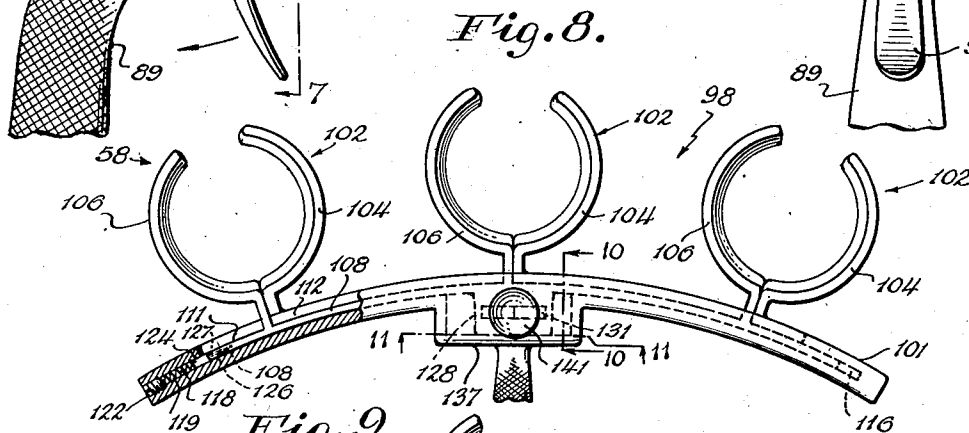
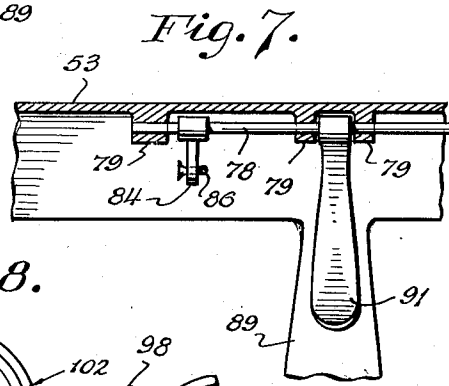
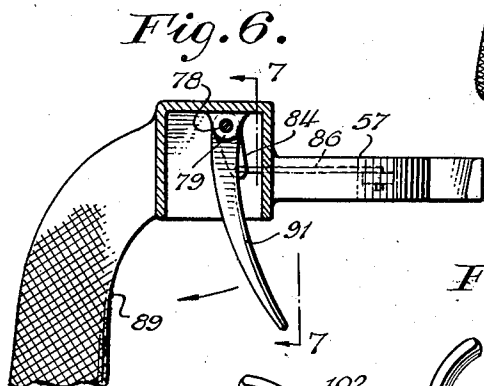
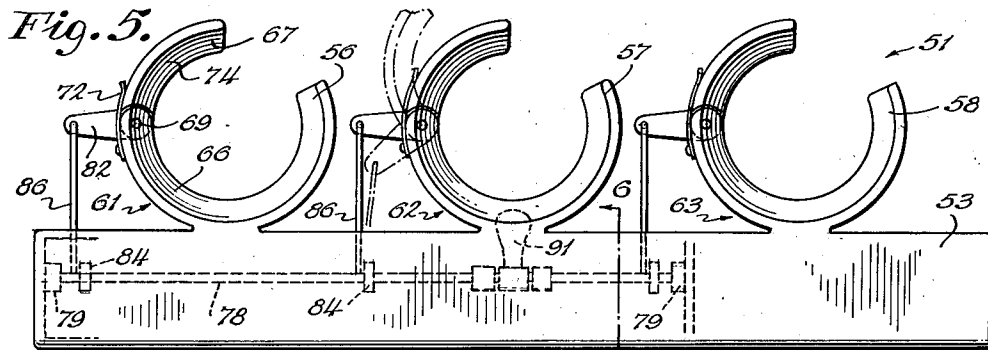
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2 Sheets-Sheet 2



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MEANS FOR HOLDING RECEPTACLES

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4 Claims. (Cl. 294—87.28)

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The present invention relates to means for holding receptacles, and, more particularly to a novel device for holding receptacles, such, for example, as holders for disposable cups, so that they may be filled and carried conveniently.

Disposable cups of the quality or grade used for serving liquids in restaurants, bars and soda fountains are usually constructed of paper and are not provided with a base part so as to be self-supporting. Nor are these cups provided with anything usable as a handle. Since the cups are not self-supporting they require a holder, which, for reasons of economy, is not provided with a handle. A waiter or soda dispenser cannot hold several of these cup holders while the cups are being filled or drinks are being mixed in them. Nor can he carry several of these holders to serve an order. These circumstances also apply to receptacles or containers other than paper cups or their holders, particularly if they lack a handle and have a generally tapering configuration as will hereinafter appear.

Accordingly, the invention has for its principal aim or object to provide a device which is capable of picking up and firmly holding a plurality of tapering articles, such, for example, as tapering receptacles or holders for disposable cups and readily releasing them.

Another object is to provide a device for picking up, holding and releasing a plurality of tapering, or more specifically, conical holders for disposable cups.

A further object is to provide novel means for picking up, holding and releasing a conical receptacle.

A still further object is to provide novel releasing means in a receptacle holder which is operable by a convenient manual release.

Other objects and advantages of the present invention will, of course, become apparent and immediately suggest themselves to those skilled in the art to which the invention is directed from a reading of the following specification in connection with the accompanying drawing in which:

Fig. 1 is a view in perspective of a holding and carrying device embodying the invention with an article in place to illustrate the use thereof;

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

Fig. 3 is a view in side elevation;

Fig. 4 is a view in cross-section on line 4—4 of Fig. 2;

Fig. 5 is a view in top plan of a modification;

Fig. 6 is a view in cross-section of the modified

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device of Fig. 5, the section being taken on line 6—6;

Fig. 7 is a fragmentary view in cross-section taken on line 7—7 of Fig. 6;

Fig. 8 is a view in top plan of a further modification;

Fig. 9 is a top plan view of a detail of the modification of Fig. 8; and

Figs. 10 and 11 are fragmentary sections on the indicated lines of Fig. 8 showing details.

Referring to the drawing, and for the present to Figs. 1 to 4 thereof, reference character 10 indicates the holder in its entirety. It comprises a plurality (three in the illustrative example of Fig. 1) of receptacle holding members 12, 13 and 14. These are spaced and joined in any suitable and convenient manner, for example by the bars 16 and 17, to provide a rigid structure. A handle 21 located approximately at the center of the holder 10 provides a convenient means for manipulating and carrying it. This handle is shown in the form of a pistol grip with a thumb rest 22 at its top.

The holding members 12 to 14, the bars 16 to 17, the handle 21 and the thumb rest 22 may be cast or molded in one piece, if desired. Any material is suitable, such, for example, as a metal or a plastic. The holding members are shown as lying in the same plane, but the construction of the holder 10 may be such that these holders may lie in one or more planes to accommodate receptacles or cup holders of different heights with their bases lying substantially in the same plane for pickup and release purposes as will hereinafter appear.

The members 12 to 14 are substantially similar in construction and, therefore, the description of one will suffice for all. The member 12 (and the others) is shown as being generally circular with an opening to permit passage of the tapering body of a container or receptacle such, for example, as the holder 26, selected for purposes of illustrating the invention. This holder has a tapering upper body 28 and a base portion 30 which presents a flat resting ring or bottom surface 31. The most constricted part of the holder 26 is indicated at 33. A disposable cup 36 of conical shape is shown as being seated in the holder 26. This cup is of the low cost type mentioned above which is unstable and requires a holder.

The opening 24 in each ring may be slightly larger between the ends of forward edges 38 and 39 than the most constricted part 33 of the holder

26. The maximum limit of the opening 24 is several degrees less than a semicircle.

The inside of each holder member is beveled as indicated at 41 to substantially the same angle as the sloping side of the receptacle part 28. It will be understood that the upper level of the bevel 41, represented as a circle 42, may be defined by a series of points, not less than three. This is also true of circle 44 which is of lesser diameter. The members 12 to 14 may, therefore, be of skeleton form within the scope of the invention. Fig. 3 of the drawings in conjunction with the other figures shows the configuration of the end of an arm at the gap 24.

In use of the holder 10, a plurality of receptacles such, for example, as three of the cup holders 26, resting on a table or the like, may be picked up simultaneously by moving the entire holder toward the cup holders due to the fact that the openings 24 all face in the same forward direction. The holding members 12 to 14 of the holder 10 are preferably spaced above the table so as to be generally at the level of the constricted part 33. This position is indicated by the dot-dash lines in Fig. 4. The cup holders 26 will enter the openings 24 and when the holder 10 is raised the cup holders will firmly rest in the beveled seat 41 provided for each.

To release the cup holders 26, it is only necessary to lower the holder 10 so that the holders 26 rest on a table or other surface with the holding members 12 to 14 generally at the level of the constrictions 33 of each cup holder. The holder 10 may then be withdrawn away from the cup holders.

When the cup holders 26 are in the holding members 12 to 14, they are seated firmly therein so that drinks may be mixed and stirred in each cup 36. While the seating of the cup holders is firm, they do not jam in place and the cup holders may be readily released as suggested above.

Referring more particularly to Figs. 2 and 8, it will be seen that the laterally extending series of recesses having the openings 24 are forwardly convex so that the oppositely disposed end recesses are swept back or disposed rearwardly of the intermediate recess at the center zone. This permits the device to be readily handled so as to pick up or discharge individual receptacles in desired sequence at the required location.

Figs. 5 to 7 show a modified arrangement where positive release of the carried receptacles or holders is provided. This modification, designated in its entirety by the reference character 51, is suitable for holding and carrying single-tapered articles, such as flat bottomed cups or mugs, tumblers or the like. The positive release feature is especially suitable for releasing such receptacles from the holder.

The holder 51 comprises a frame 53 to which are secured the relatively fixed arms 56, 57 and 58 of receptacle holding mechanisms 61, 62 and 63. Each of these mechanisms being similar, mechanism 61 will be described in detail. In addition to the relatively fixed arm 56, it comprises a curved, substantially rigid member 66 which is curved as shown. A swingable curved member 67 is pivoted to the member 66 by a hinge and hinge pin 69. This hinge may be of any type known to the prior art and preferably limits the inward movement of the member 67 to the position shown. The members 56, 66 and 67 define a generally closed ring within which a receptacle may be seated. A spring 72 urges the member 67 to the position shown to press against

and hold a receptacle within the ringlike opening. The members 56, 66 and 67 may be provided with an inside bevel 74 similar to the bevel 41 of the Fig. 1.

In accordance with the invention, the members 67 of the mechanisms 61 to 63 are arranged to be releasable simultaneously. Means are illustrated, by way of example, for accomplishing this purpose. As shown, a shaft 78 is rotatably mounted on the frame 53 by bearing projections or bosses 79. Each member 67 has an arm or lever 82 secured thereto which projects laterally of the holder 51. Levers 84, one for each mechanism 61, 62 and 63 are secured to the shaft 78. A link 86, one at each position is pivotally connected at each end to the lever 84 and the lever 82. When the shaft 78 is rocked, the member 67 will be swung to the open dotted line position (shown for the mechanism 62) to release the receptacles held by the mechanisms 61 to 63.

The means for imparting rocking movement to the shaft 78 will now be described in conjunction with a handle 89 with which it is conveniently associated. A lever 91, for example, in the form of a finger trigger and referred to hereinafter as the trigger, is secured on the shaft 78 so as to project downwardly in front of the handle 89. The trigger 91 is preferably curved somewhat as shown so that it may be partially encircled by the forefinger of an operator while the handle 89 is grasped. A pull on this trigger releases the articles held by the mechanisms 61 to 63.

It will be seen from the foregoing that the modification of Figs. 5 to 7 may be used in the manner of the preferred holder 10 of Figs. 1 to 4. When articles, for example cup holders 26, are to be picked up by the holder 51, the trigger 91 is pulled and when the cup holders 26 are in contact with the arms 56 to 58 of the receptacle holding mechanisms 61 to 63 and the cooperating members 66, the trigger 91 is released. The spring 72 causes the cup holders to be grasped and held until they are released by pulling the trigger 91. It is to be noted in this connection that release of tapering articles generally, such as drinking glasses or tumblers, for example, which do not have a constricted section 33 (Fig. 4) may be accomplished.

Figs. 8 to 10 of the drawings show a modification which is similar in many respects to the modification of Figs. 5 to 7. Referring to Fig. 8, reference character 98 indicates the holder in its entirety and is seen to comprise a frame member 101 which may be curved as shown. A plurality of mechanisms 102, each designed to hold a tapering article, for example the cup holder 26, is provided. Each mechanism comprises a curved arm member 104 secured to or integral with the frame member 101. A complementary movable member 106 completes each mechanism 102. The movable members 106 are secured upon or made integral with a bar member 108 which has the same curvature as the frame member 101, or is straight if the latter is straight. The frame member 101 is provided with a channel or passage 111 within which the bar member 108 is received. A slot 112 extends along the front of the frame member 101 to receive the bar member 108. This slot is coextensive in length with the bar member so that the latter may conveniently be inserted therein. One end 116 of the slot 108 is in the form of a recess which receives the bar member 108 when it is thrust to the right as viewed in Fig. 8. The bar member is biased to this position by a compression spring 118 in-

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serted in a hole 119 and held by a removable screw plug 122. A rod 124 is insertable into the hole 119 after the bar 108 is placed from the side into the slot or channel 111.

A socket 126 receives the end 127 of the rod 124 which is insertable through the hole 119 into the socket. The spring 118 is inserted after the rod 124 following which the screw plug 122 is threaded into the outer end of the hole 119.

The bar member 108 includes a lateral extension 128 having an opening 129 therein which receives a cam 131 having a sloping cam edge 133. The cam member is movable in a recess 136 in an enlarged part 137 of the frame 101 and is spring pressed to its upper position by a spring 138. A plunger rod 139 provided with a thumb piece 141 serves to move the cam 131 downwardly when the thumb piece is pressed by the operator to move the bar member 108 to the left thereby to release the articles carried by the mechanisms 102.

The invention claimed is:

1. A device for releasably holding a plurality of individual holders for tapered cups, comprising a laterally extending structure provided with a laterally disposed series of recesses having their openings facing forwardly and defined by forward edges, the forward edges of recesses of said series disposed on respectively opposite sides of a central portion of said structure being rearward of the forward edges of a recess disposed at said central portion, and a handle extending rearwardly from said central portion provided with a downwardly extending grip.

2. A device for releasably holding a plurality of individual holders for tapered cups, comprising a laterally extending substantially rigid structure provided with a laterally disposed series of recesses having their openings facing forwardly, said series of recesses being inclined rearwardly from a central zone toward respectively opposite end zones to thereby dispose the recesses in rearwardly staggered relationship to facilitate dis-

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charge of said individual holders successively, and a handle extending rearwardly from said central zone provided with a downwardly extending grip.

3. A device for releasably carrying a plurality of individual holders for conical paper receptacles comprising a carrier frame for said holders provided with several seats for said holders, said seats each being arcuate in a horizontal plane and having open jaws facing forwardly for receiving said holders, said seats being arranged in a series with the oppositely disposed end seats of said series positioned rearwardly of an intermediate seat of said series, and a handle disposed rearwardly of the central portion of said frame and provided with a hand grip.

4. A device for releasably holding a plurality of tapered articles, comprising a laterally extending structure provided with a laterally disposed series of recesses having their openings facing forwardly and defined by forward edges, said structure having its forward edges on each side of a central portion of said structure disposed rearwardly with respect to the forward edges of said central portion and the recesses of said series on each side of and farther from said central portion being disposed rearwardly with respect to a recess nearer said central portion, and a handle extending rearwardly from said central portion and provided with a downwardly extending grip.

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