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REMOVABLE INSERT RECEPTACLE

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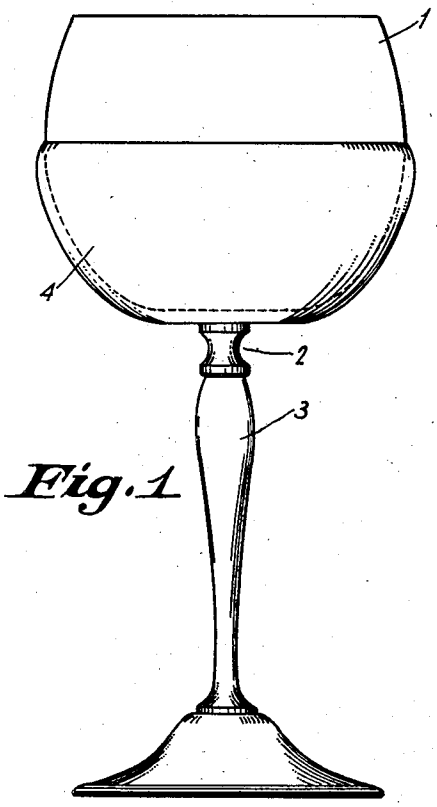


Fig. 1

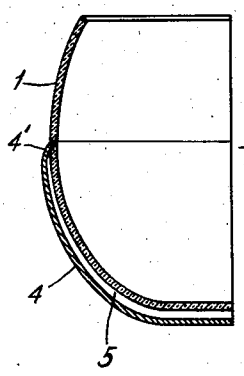


Fig. 3

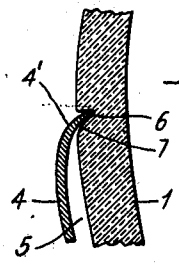


Fig. 4

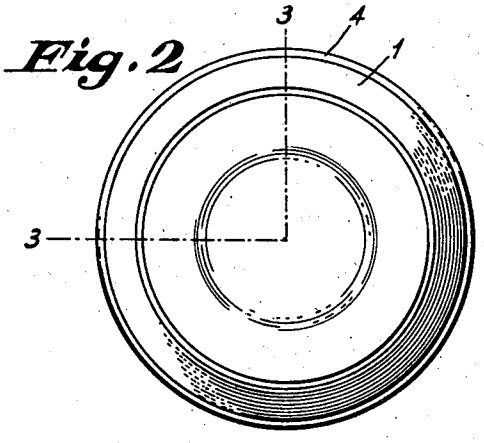


Fig. 2

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REMOVABLE INSERT RECEPTACLE

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1 Claim. (Cl. 65—13)

Our present invention generally relates to receptacles, and more particularly to a novel and improved construction for retaining a receptacle insert in a holder for the same.

Although receptacles of the removable insert type, as goblets, have been known and used in the past, various disadvantages have been found to be inherent in them. Expensive, as well as complicated, devices have been employed to positively retain the insert in the holder during usage. Such devices have failed to be popular because of the failure to observe the fundamental rule that a removable insert must not only be positively retained in the holder during usage, but must be removable from the holder with minimum manipulation by, and vexation to, the user. The ideal device for this type of receptacle not only provides positive retention of the insert in one simple movement, but permits separation of the holder and insert in as simple a fashion.

Accordingly, it may be stated that it is one of the main objects of our present invention to provide a receptacle of the removable insert type wherein the insert is positioned into operative relation with the holder by the mere act of moving the insert into the holder, and the holder and insert being constructed in such a manner that the insert is positively retained in position under the influence of three separate and distinct physical forces.

Another important object of our invention is to provide a goblet of the removable insert type wherein the insert is positively retained in position in the holder by the combined action of atmospheric pressure upon the insert, the pressure of the holder sides, and a groove coupling between the insert and the holder; the insert being removable from the holder by means of the simple act of pulling the insert out of the holder.

Another object of the invention is to provide a drinking receptacle comprising a receptacle insert and a holder, the holder being constructed of resilient material, and the dimensions of the insert being such as to act as a plunger, when inserted in the holder, and force the air out from between the insert and the holder whereby the insert is retained in position in the holder, when in operative position, by the combined action of atmospheric pressure of the holder on the latter.

Still other objects of the invention are to improve generally the simplicity and efficiency of receptacles of the removable insert type, and more especially to provide a receptacle of such a type which is not only reliable and durable in usage, but economically manufactured for the market.

The novel features which we believe to be characteristic of our invention are set forth in particularity in the appended claim. The invention itself, however, both as to its construction and usage, will best be understood by reference to the following description taken in connection with the drawing, in which we have indicated a construction whereby our invention may be carried into effect.

In the drawing:—

Fig. 1 shows a front elevational view of the receptacle embodying our invention,

Fig. 2 is a plan view of the receptacle,

Fig. 3 is a quarter sectional view taken along line 3—3 in Fig. 2, the section being through the insert and holder walls,

Fig. 4 is a magnified detail view of the mechanical coupling between the holder lip and the groove in the outer face of the insert.

Referring now to the accompanying drawing, wherein like reference characters in the different figures indicate the same structural elements, the receptacle in Fig. 1 is shown as comprising two portions. The insert 1 is preferably fabricated of glass, although it is to be clearly understood that it may be composed of any other type of rigid material other than glass. Such materials may comprise phenolic condensation products, hard rubber or the like. The insert may be of colored, transparent, translucent or opaque material. The holder 2 comprises an upright, or support, section 3 and a convex, or flaring, insert-holding section 4. The section 4, as well as the support section 3, are integral, and are preferably composed of a metallic material such as chromium plated steel or brass. The section 4 may, if desired, be threadedly connected to the upright section 3.

The insert-holding section 4 is fabricated from a relatively thin sheet of metallic material into the configuration shown. It is to be understood that the relative dimensions of the section 4 and insert 1 in Fig. 3 are exaggerated and distorted in order to illustrate the manner of constructing the device. Fig. 4 shows more definitely the relative dimensions of the section 4 and insert 1, and from this figure it will be noted that the section 4 possesses resiliency due to the relatively thin sheet fabrication thereof. The configuration of the section 4 conforms to that of the lower half of insert 1.

The circular rim, or lip, portion of section 4 is bent inwardly. This is clearly shown in Fig. 4,

and the numeral 4' designates the inwardly bent rim of the section 4. In the position shown in Figs. 1 and 3, the operative position of the receptacle, there exists a slight space 5 between the outer face of insert 1 and the inner surface of section 4. By way of example it is pointed out that space 5 be of the order of less than one quarter of an inch. The space 5 should be dimensioned with regard to the thickness of the plate from which section 4 is fabricated, and the relative dimensions of insert 1 and section 4. The function of space 5 is to provide a vacuous space between elements 1 and 4 when the insert has been pushed into operative position in the manner of a plunger. Due to the inherent resiliency of the sheet, or plate, from which section 4 is fabricated, the base of insert 1 will act in the manner of a plunger and force the air out from between the approaching faces of the insert and insert-holder section 4.

Of course, the base portion of insert 1 may be in contact with the base portion of section 4 in the operative, assembled position of the receptacle. In that case the space between the flaring walls of the nested sections would be substantially evacuated. It will now be seen that the space 5 should be so designed that the evacuation thereof is completed by the simple motion of pushing the insert 1 into the well, or section, 4. Thus, the atmospheric pressure upon the inner face of insert 1 operates to maintain the latter in assembled position.

A second force which is utilized to retain the insert in assembled position is the inward, and radially acting, pressure of the rim portion 4'. As explained before this is due to the inherent resiliency of the material from which section 4 is fabricated. When the insert 1 is not in nested position, the flaring walls and rim 4' are restored to original position. In other words, when the insert 1 is pushed into nested position this results in distortion of the rim portion 4' in a direction away from the vertical axis of the receptacle. Due to this outward flexure of the section 4 the rim portion 4' exerts a radially acting pressure on the medial portion of insert 1.

A third force that is utilized to maintain the insert 1 in nested position is provided by the cooperation between the rim portion 4' and a circular recess 6. The latter recess, or groove, is provided in the outer face of the flaring walls of insert 1, and is placed at the circle of contact between the rim edge and the insert's outer face. The groove 6 has its lower edge 7 rounded off so that when the insert 1 is desired to be removed, the edge of rim portion 4' will readily, and smoothly, ride downwardly over the edge 7. Those skilled in the art of fabricating receptacles, and particularly those of glass, are fully aware of the manner of providing the groove 6 in the outer face of the insert 1.

The depth of recess, or groove, 6 is subject to variation. It need not be pronounced, and may be of the order of magnitude of the edge of rim portion 4'. It will now be seen that when the insert 1 is in nested position, it is not only maintained in such position by the conjointly acting forces of atmospheric pressure and the radially directed pressure of the walls of section 4, but the insert 1 is positively locked against tilting motion, as well as accidental withdrawal motion, by the rim edge-groove coupling.

It will also be clear that these three forces, although physically independent, nevertheless cooperate to produce the unitary result of positively maintaining the insert 1 in nested, or assembled, position as shown in Fig. 1. When it is desired to disassemble the receptacle, it is only necessary to pull the insert 1 upwardly, and this upward pull on the insert breaks the vacuum in space 5, pushes the walls of rim portion of the section 4 upwardly, and breaks the coupling between rim portion 4' and groove 6. It will be noted that this is all accomplished by one single motion, and that this motion is the exact reverse of the motion which causes assembly of the receptacle.

It is to be understood that the magnitudes of the groove 6, the plate of section 4 and the space 5 are wholly within the discretion of the designer of the receptacle. What is essential is that these various dimensions be chosen to accomplish the functions stated hereinbefore.

While we have indicated and described one preferred construction for carrying our invention into effect, it will be apparent to those skilled in the art that our invention is by no means limited to the particular construction shown and described, but that many modifications may be made without departing from the scope of our invention as set forth in the appended claim.

What we claim is:

In combination, in a receptacle of the removable insert type, a holder section formed of a relatively thin metallic plate into an insert holder, the latter having resilient flaring walls and an inwardly bent rim portion, a glass insert receptacle nested within said holder and having its nested portion similar in configuration to that of the holder, the walls of the insert and holder being spaced apart by a relatively small distance which is sufficient to provide a substantially evacuated space between the walls of the insert and holder when the former is in nested position, said insert being retained in nested position by the conjoint action of atmospheric pressure on the insert and the radially directed pressure of the holder walls, a substantial portion of the insert extending above the holder rim, a groove provided in the outer face of the insert at the line of contact between the holder rim edge and the external face of the insert, and said rim edge being disposed in the groove to prevent tilting motion of the insert during usage.

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