

May 6, 1952

K. M. CONNOR ET AL

2,596,009

BOTTLHOLDER

Filed Sept. 16, 1947

2 SHEETS—SHEET 1

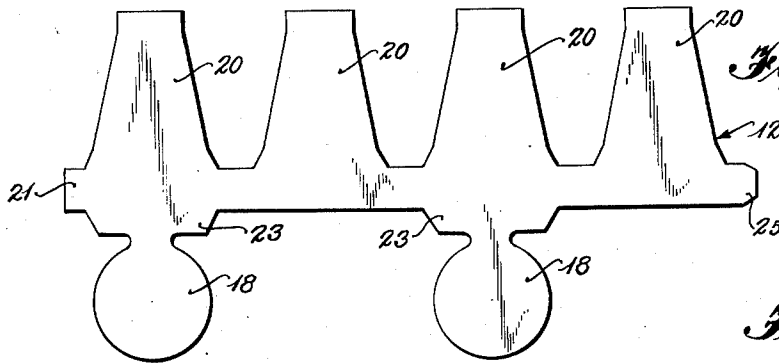
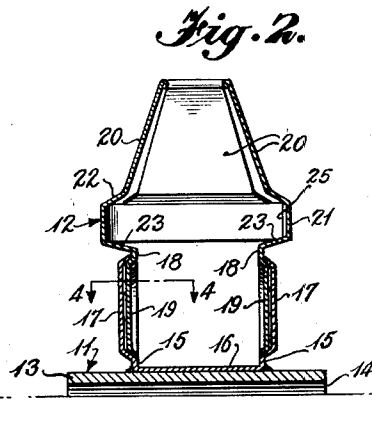
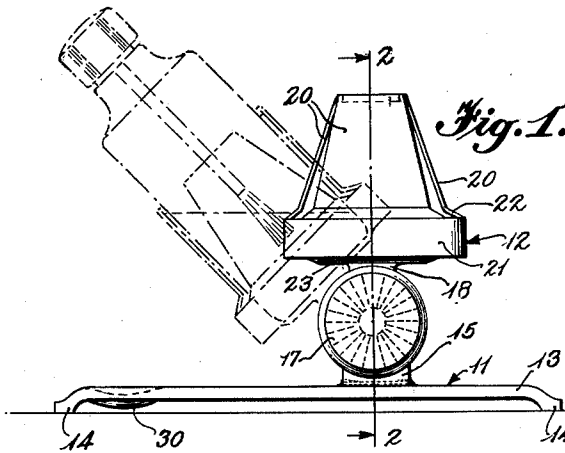


Fig. 6.

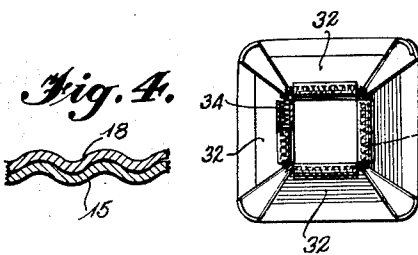
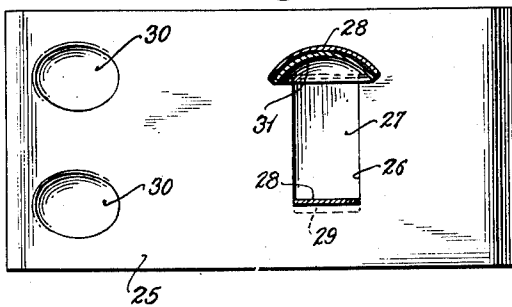
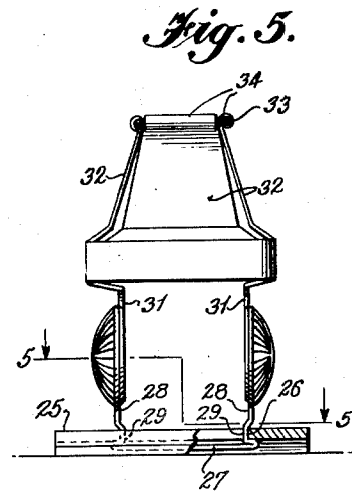


Fig. 4.

Fig. 7.



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2 SHEETS—SHEET 2

Fig. 8.

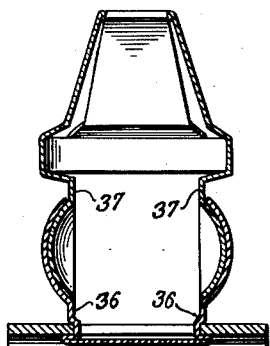


Fig. 9.

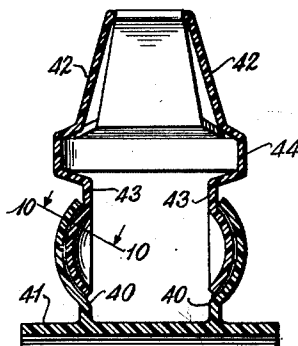
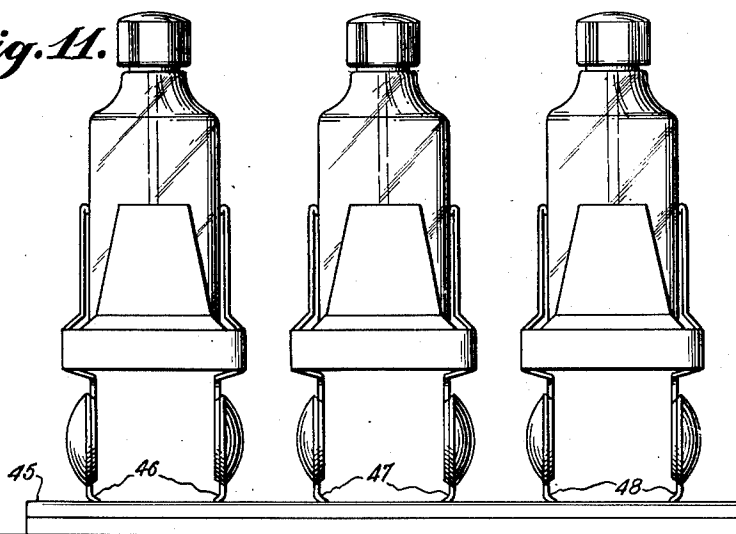


Fig. 10.



Fig. 11.



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UNITED STATES PATENT OFFICE

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BOTTLEHOLDER

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1 Claim. (Cl. 248—346)

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This invention relates to bottle supports and more particularly to a support which will adjustably hold a bottle in an upright or an inclined position at any desired angle.

The invention has especial utility for holding bottles which contain material which is removed from the bottle and applied with a brush. Ordinarily the brush is attached to the stopper of the bottle and projects into the bottle during periods of non-use. One example of such bottles are those containing finger nail polish, and the invention will be explained with particular reference to such bottles.

It is a matter of common knowledge that during the initial use of a finger nail polish bottle, when it is full or nearly so, no difficulty is experienced in dipping the brush into the contents to abstract some of the polish. During this time it is entirely satisfactory for the bottle to be in an upright position. However, after so much polish has been removed that but a small amount remains in the bottom of the bottle, it is necessary to tilt the bottle in order to be able to dip the brush into the remaining contents.

It is not convenient in many instances to tilt the bottle when the brush is being dipped therein. This is because the hands are ordinarily occupied with the work being performed and it is both annoying and risky to repeatedly return one of the hands to the bottle simply to tilt it. Thus, when using nail polish, one hand must be exposed to receive the polish while the other hand is applying the polish and it is not convenient to regrip the bottle each time more polish is to be obtained. Moreover each time that the hand being polished must again take hold of the bottle the risk is involved that some of the applied polish will be wiped off.

To avoid the risk and annoyance of having to frequently return to the bottle to tilt it, the bottle is often propped at an angle or is grasped between the knees. Both of these practices are unsafe and the bottle consequently often falls or slips and spills its contents. The fear that such spillage will occur materially slows up the operation being performed.

The bottle support of the present invention serves to adjustably hold the bottle either in an upright position or at a desired inclination. As more and more of the bottle contents is consumed, the bottle can be progressively tilted at a greater angle from the vertical to enable the user to dip the brush into the liquid. The use of the holder thus prevents accidents and makes it as convenient to withdraw the last part of the contents

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from the bottle, as the first part. The fear that spillage might occur is eliminated and this makes it possible for the user to proceed with greater efficiency of operation.

Although, as has been mentioned, the invention has particular use for holding nail polish bottles, it can be used with advantage for a large number of other bottles. Thus, the holder can be used to support bottles containing ink, ink eradicator, fluid for mimeograph stencils, liquid shoe polish, watch maker's oils, perfumes, chemicals for spot removing, retouching fluids for photographic work, and film splicing fluids. It will be appreciated that instead of bottles, which are ordinarily made of glass, the invention is suitable for supporting metallic containers and plastic receptacles, and it is to be understood that the term bottles, as used in the specification and claim, is intended to apply to containers and receptacles as well.

A most important feature of the invention is that the adjustable holder may be made at very low cost. This is achieved although the support presents a very attractive appearance due to its novel construction. Due to the formation and the arrangement of the parts, they can be made inexpensively and can be assembled rapidly.

Representative embodiments of the invention are illustrated in the accompanying drawings in which:

Figure 1 is a side elevational view of one construction contemplated by the invention, the parts being disposed to hold a bottle in an upright position, and showing the tilted position of the parts in dotted lines,

Figure 2 is a sectional view on the line 2—2 of Figure 1,

Figure 3 is an expanded view of the bottle retaining part before it is shaped to form a socket for the bottle,

Figure 4 is a sectional view on the line 4—4 of Figure 2,

Figure 5 is an end elevational view partly in section of a modified construction,

Figure 6 is a sectional view on the line 6—6 of Figure 5,

Figure 7 is a plan view of the bottle gripping portion of Figure 5,

Figure 8 is a sectional view similar to Figure 2, of another modified construction.

Figure 9 is a sectional view similar to Figure 2, showing the parts made of a plastic material,

Figure 10 is a sectional view on the line 10—10 of Figure 9, and

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Figure 11 is a side elevational view of a gang arrangement of the bottle holders.

Referring first to the arrangement of Figures 1, 2 and 3, this includes a lower base part 11 and an upper bottle retaining part 12 which is adjustable with respect to the base part. The base part 11 includes a stand 13 which may be of any suitable formation to rest on a flat surface and which is here shown as a plate. To reduce the cost of this plate 13 and to make it of attractive appearance, it may be formed of relatively thin sheet metal which is strengthened by flanging the opposite ends to form footings 14—14.

The stand 13 may be of any configuration so long as it is large enough to sufficiently underlie the bottle to be held to prevent the stand from tipping. As here shown the stand is of oblong formation and the footings 14 are along its narrow ends.

Projecting upwardly from the stand 13 are a pair of spaced uprights 15—15. For simplicity of construction these uprights 15 are made as end portions of a connecting center portion 16, all from the same piece of sheet metal. This is conveniently done by stamping or cutting the portions 15, 16 in one piece and turning the ends 15 upwardly. The center portion 16 is then affixed to the stand 13 in any suitable manner as by soldering or spot welding.

Preferably, the uprights 15 are disposed toward one end of the stand 13 as is shown in Figure 1. This arrangement makes it possible to have a shorter base and still have the stand underlie the bottle when it is tilted as appears from Figure 1.

The upper extremities of the uprights 15 are generally circular from a side view as appears in Figure 1 and are dished in cross-section as appears from Figure 2. This dished construction forms recessed flat seats 17 on the oppositely facing inner sides of the uprights 15. These recesses may be formed easily by a stamping operation.

Cooperating with the recessed seats 17—17 are depending flanges 18—18 of the bottle gripping part 12. These flanges 18 are of generally circular shape in outline and are outwardly bowed away from each other to form flat protuberances 19 which enter into and fit the recessed seats 17. This entrance of the protuberances 19 within the recessed seats 17 serves to maintain the bottle retainer 12 and the base 11 in assembled relationship and prevent their separation due to normal use.

It will be observed that the protuberances 19 and the recessed seats 17 coact to form a fulcrum for the pivotal movement of the upper bottle retaining portion 12 with respect to the lower base portion 11. The circular formation of these cooperating surfaces permits this tilting movement while maintaining the parts assembled. Due to the large size of these coacting surfaces they may offer sufficient frictional contact to maintain the bottle retaining portion in the position to which it is tilted but to make certain that slippage does not occur the coacting flat surfaces preferably are serrated or ribbed. Preferably these opposing flat surfaces are formed with radial ribs which have the appearance in cross-section of Figure 9. A similar result can be obtained by merely roughening these coacting surfaces.

The bottle retaining portion 12 includes, in addition to the depending flanges 18 a socket to

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receive the bottle to be supported. The socket may be of fixed size so that the bottle merely rests therein but it is considered preferable that it be of yieldable construction so that it will frictionally grip the bottle with a yielding pressure and adapt itself to bottles of different sizes. To carry this out with the arrangement illustrated, the bottle retainer is formed with fingers or leaves 20 which project upwardly from a sleeve portion 21.

While there may be any number of the leaves 20, as here shown there are four in number and they are arranged to form a square socket. This will receive and grip a round bottle as well as a square bottle due to the fact that the leaves bear inwardly with a resilient pressure. The connecting sleeve 21 is of elongated shape and the flanges 18 are beneath two of the opposite leaves 20.

In order that the spring leaves 20 will open to form a better defined socket and grip the bottle along a greater portion of its length, they are preferably of angular shape at their lower ends as shown at 22. These portions flare outwardly at an increased angle to connect to the sleeve 21. Between the sleeve 21 and the depending flanges 18, the socket is preferably formed with an inturned shoulder 23 for the bottle to rest upon.

The entire bottle retaining portion 12 can be easily made as a single stamping or cutting as appears from Figure 3. This figure shows this element laid out and as it appears before it is shaped into the socket formation by connecting its ends together. To complete the socket the opposite edges may be soldered together or one of them may be provided with the tab 25 which can be soldered or spot welded to the opposite end of the piece.

The bottle retaining portion 12 is assembled with the base portion 11 merely by slightly spreading the uprights 15 apart and inserting the flanges 18 between them in the proper position. The support is then ready to receive a bottle in its socket and it is then ready for use. During the initial use of the bottle it should be in an upright position so that the contents cannot flow out. As the liquid is progressively consumed the bottle may be tilted to an increasing angle from the vertical so that the applicator brush can be dipped into the remaining liquid. The adjustable bottle support thus leaves both hands of the person using the bottle free to perform some other function than holding the bottle.

The structure of the modified form of Figures 4, 5 and 6 is, in general, similar to that of Figures 1, 2 and 3, and the essential differences will be pointed out. One feature is the constructional detail which eliminates the need with the arrangement of Figures 1, 2 and 3 for soldering the uprights 15—15 to the stand 13. To eliminate this need, the stand 25 in Figures 4, 5 and 6 is formed with an opening or slot 26, which preferably is of rectangular shape.

The slot 26 is of the same width as the width of the center portion 27 which connects the two uprights 28—28. Immediately above the center portion 27, the uprights 28—28 are made of re-entrant shape to form a transverse groove 29 at the bottom extremity of the uprights. These grooves snugly receive the inwardly facing edges of the slot 26 as appears from Figure 4. With this arrangement, therefore, the part carrying the uprights 28—28 is assembled with the stand

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25 by merely inserting its center portion 27 through the slot 26 until the ends of the slot engage the grooves 29.

The embodiment of Figures 4, 5 and 6 illustrates the fact that the dished formations at the tops of the uprights 28—28, and the protuberances at the lower ends of the depending flanges 31—31 may be so shaped that their cooperating surfaces are portions of spheres. The coating surfaces thus simulate a ball and socket construction, although they are made of sheet metal.

To increase the frictional grip of the fingers or leaves 32 upon the bottle being retained, a spring 33 is provided. This spring 33 is preferably positioned at the tops of the leaves 32 and encircles all of them. It is retained at this position by flaring the tops of the leaves 32 outwardly as shown at 34.

Figure 6 shows at 30, that depressions may be formed in the base plate 25 for the fingers to rest in while the nail polish is being applied. By placing the finger tips in said depressions 30, the latter aid in holding the fingers in immobilized position and moreover the base 25 serves as a splash plate.

In Figure 4 the cooperating surfaces between the uprights 15 and the depending flanges 18 are serrated or ribbed to more positively retain the parts in any adjusted position. Figure 8 shows that this expedient is not a necessary one as the coating surfaces between the uprights 36—36 and the depending flanges 37—37 are smooth. Due to the large extent of these abutting surfaces they offer sufficient frictional contact to retain the parts at a desired working angle during any normal use.

Figure 9 shows that the bottle support may be made of a moulded plastic. As is clear from this figure the uprights 40—40 are moulded integrally with the base plate or stand 41. The bottle retaining portion which includes the fingers or leaves 42 forming the sides of the socket and the depending flanges 43, is made of one piece. In this case the connecting sleeve 44 is made solid throughout its extent so that it does not need to be attached at one corner.

The coating surfaces between uprights 40 and depending flanges 43, may be smooth, or may be roughened or scored in any desired manner. For

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example, they may be ribbed as shown in Figure 10.

Figure 11 shows a ganged relationship of the bottle retainer. This arrangement utilizes a common stand 45 which is sufficiently wide to accommodate several pairs of uprights 46, 47, and 48, aside of each other. A separate bottle retainer cooperates with each of these pairs of supports and they may consequently be individually adjusted to a desired angle corresponding to the amount of the contents of the bottle.

It will be appreciated that the arrangement of Figure 11 may correspond to any one of the structures previously described. Thus, it may be of bent sheet metal, or it may be of plastic. As one suitable use of this ganged arrangement it may be mentioned that the separate bottles may hold nail polish remover, cuticle remover, and finger nail polish, respectively.

What is claimed is:

A support for holding bottles that comprises a base member, a pair of upright resilient elements positioned in spaced relation on said base member, said elements having recessed seating surfaces on their inwardly facing sides, a bottle retaining member including spaced resilient upright leaves to resiliently engage a bottle, a pair of resilient flanges connected to said bottle retaining member on opposite sides, said flanges having protruding surfaces on their outwardly facing sides complementary to the recessed seating surfaces of said elements, said protruding surfaces being fitted into said seating surfaces in frictional engagement therewith so that said retaining member can be tilted relative to said base member and held in the tilted position thereby.

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