Sept. 26, 1939. J. A. O'NEILL 2,174,329

INSULIN BOTTLE AND SYRINGE HOLDER

Filed March 18, 1938 2 Sheets-Sheet 1

Fig. 1.

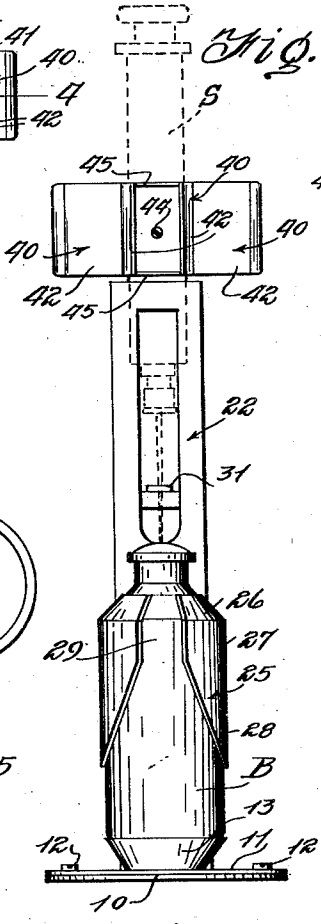


Fig. 4.

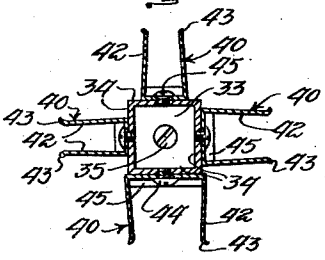


Fig. 2.

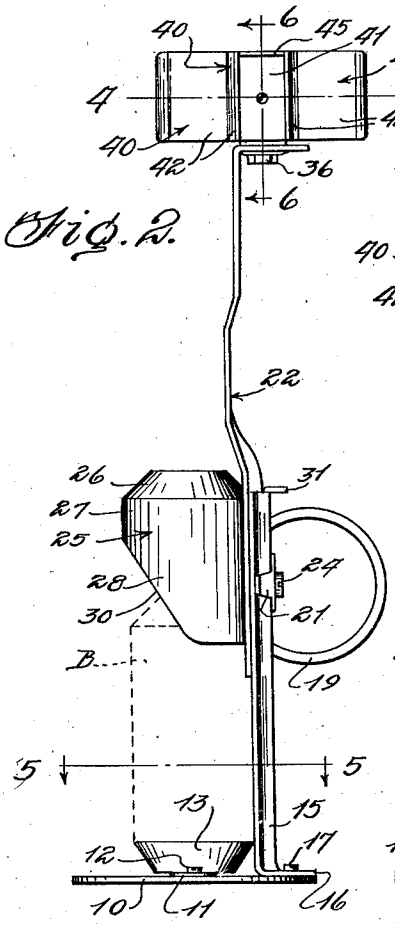


Fig. 3.

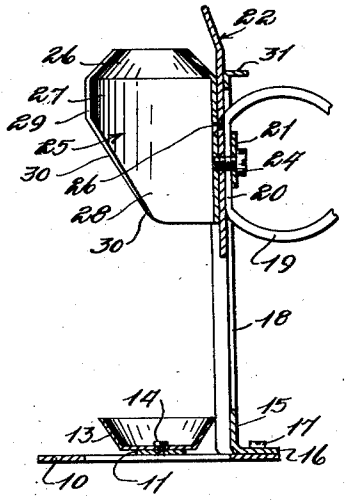


Fig. 6.

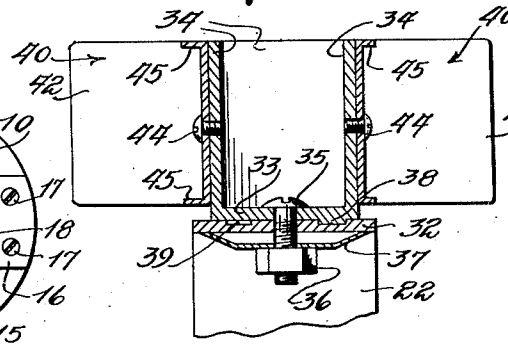


Fig. 7.

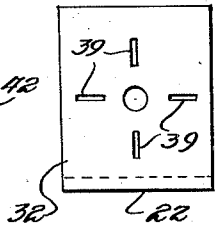
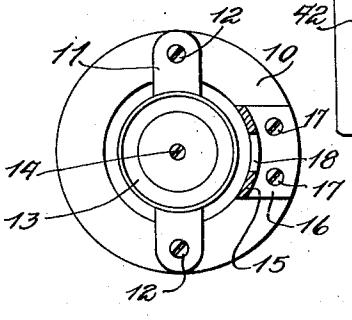


Fig. 5.



Inventor

JOHN A. O'NEILL,

By

Attorney

Sept. 26, 1939. J. A. O'NEILL 2,174,329

INSULIN BOTTLE AND SYRINGE HOLDER

Filed March 18, 1938 2 Sheets-Sheet 2

Fig. 9.

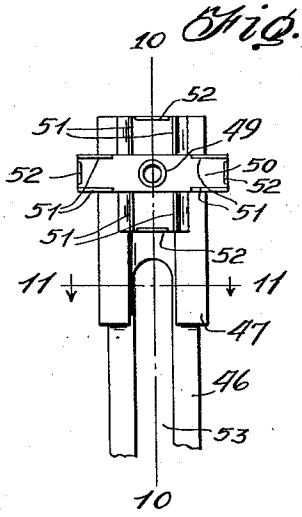



Fig. 8.

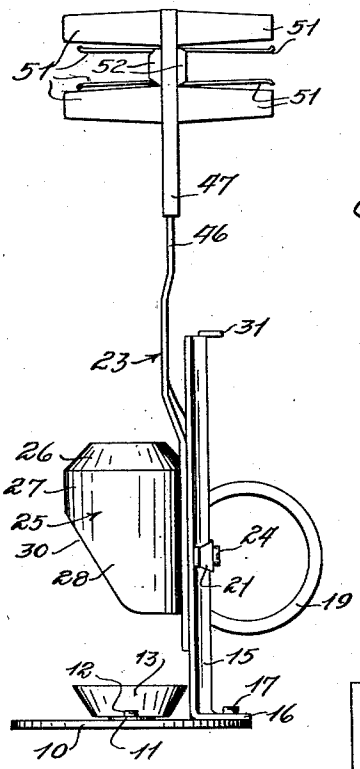



Fig. 11.

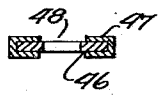



Fig. 10.

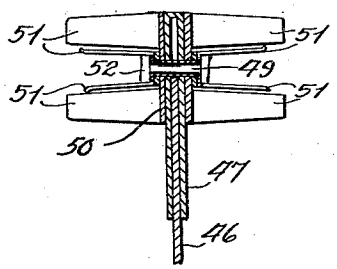



Fig. 12.

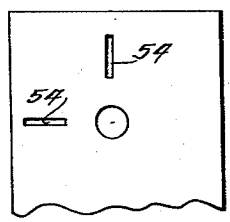
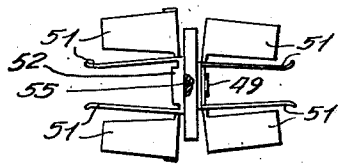



Fig. 13.




Inventor

JOHN A. O'NEILL,

By J. Clanton

Attorney

Patented Sept. 26, 1939

2,174,329

# UNITED STATES PATENT OFFICE

2,174,329

## INSULIN BOTTLE AND SYRINGE HOLDER

John A. O'Neill, Florence, Ala.

Application March 18, 1938, Serial No. 196,769

15 Claims. (Cl. 226—129)

This invention relates to medical appliances and has special reference to a combined vial and syringe support particularly adapted to hold vials of insulin and the like and to carry hypodermic syringes.

One important object of the invention is to provide an improved device of this character constructed for adjustability to receive a wide variety of sizes and shapes of bottles, ampules and other containers of liquid medicament.

A second important object of the invention is to provide a device of this character capable of holding hypodermic syringes of different diameters and lengths.

A third important object of the invention is to provide a novel device of this character arranged to support a container of liquid medicament and a plurality of hypodermic syringes, the support for the syringes being adjustable to bring any desired syringe selectively into cooperative relation with the container.

A fourth important object of the invention is to provide a novel device of this character having a rotatable carrier for a plurality of syringes any one of which is rotatably movable into and out of alignment with a medicament container.

With the above and other objects in view as will be hereinafter apparent, the invention consists in general of certain novel details of construction and combinations of parts hereinafter fully described, illustrated in the accompanying drawings and specifically claimed.

In the accompanying drawings like characters of reference indicate like parts in the several views, and:

Figure 1 is a front elevation of one form of the invention showing a bottle held therein and having a syringe shown in dotted lines as mounted in the syringe holder.

Figure 2 is a side elevation of this form of the device in position of adjustment for inserting a bottle or the like.

Figure 3 is a vertical median section through the lower part of the invention showing the arrangement for adjusting the bottle holder.

Figure 4 is a detail section on the line 4—4 of Figure 2.

Figure 5 is a section on the line 5—5 of Figure 2.

Figure 6 is an enlarged detail section on the line 6—6 of Figure 2.

Figure 7 is a detail plan view showing the top of a certain standard used in this form of the invention.

Figure 8 is a front elevation showing a second form of the invention.

Figure 9 is a side elevation showing the upper part of this form.

Figure 10 is a fragmentary section on the line 10—10 of Figure 9.

Figure 11 is a detail section on the line 11—11 of Figure 9.

Figure 12 is a fragmentary elevation of the upper part of a removable standard section used in this form.

Figure 13 is a fragmentary plan view of the syringe holder used in this form.

In each of the forms herein disclosed there is provided a base 10 in the form of a flat annulus. A bar 11 extends diametrically across this base and has its ends secured to the base by suitable means such as the screws 12. Mounted centrally on the bar 11 is a frusto-conical bottle bottom receiving and centering cup 13 which is fixed to the bar by suitable means such as the screw 14.

Extending upwardly from the base 10 is a standard having a vertical portion 15 from the lower end of which a foot portion 16 extends outwardly at right angles and is secured to the base as by the screws 17. The vertical portion 15 is curved in horizontal cross-section as shown in Figure 5 to provide a concave face concentric to the vertical axis of the cup 13. Also the portion 15 is provided with a vertically extending slot 18. A handle loop 19 is provided with a flat portion 20 which is of such width as to fit in the slot 13 with a sliding fit. A spring clip and friction member 21 extend through the loop 19 to span the portion 20 and have its ends rest on the outer face of the standard 15 at each side of the slot 18 on the outer or convex side thereof. Resting against the inner or concave side of the fixed standard 15 is the lower end of an upright movable standard member or section indicated in general in the form shown in Figure 1 at 22 and in the form shown in Figure 8 at 23. A screw 24 passes through the spring clip 21 and through the flat portion 20 of the handle loop 19 to be screwed into the lower part of the standard section 22 or 23 as the case may be. Thus the standards 22 and 23 are supported to slide up and down on the standards 15.

Secured to the inner face of each of the standards 22 and 23 is a movable bottle holder 25 arranged to engage the upper part of a bottle and cooperate with the cup 13 to hold a bottle, ampoule or the like in position ready for use. This bottle holder is of generally segmental form in horizontal section and is secured as at 26 to the

lower end of the sliding standard section. This movable holder comprises an upper segmental frusto-conical portion 26, an intermediate segmento-cylindrical portion 27 of uniform arcuate extent throughout its height and a lower segmento-cylindrical portion 28 which decreases in arcuate extent from its upper end downwardly. By this arrangement there is provided for the holder 25 a front slot 29 having diverging lower edge portions 30. The purpose of these diverging edges is to provide for the ready insertion and removal of a bottle or other container. It is to be noted that the upper or movable bottle holder 25 is coaxial with the lower or fixed bottle holder 13 and the upper holder 25 is movable with the handle loop vertically toward and from the lower holder. At the upper end of the standard 15 there is provided a thumb piece 31 on which the thumb of the user may rest when the first finger is extended through the loop 19 for transporting the device and for assisting in moving the upper holder upwardly as in Figure 2 to free the bottle indicated at B. From an inspection of Figure 2 it will be plain that, with the upper holder 25 raised, the bottle may be lifted to clear the lower holder 13, its lower end tilted forwardly and the bottle then moved downwardly and forwardly for complete removal.

In the form shown in Figures 1 to 7 inclusive the standard 22 is provided at its upper end with a laterally and outwardly extending horizontal flange 32. On top of this flange rests a prismatic syringe carrier center or head having a rectangular base 33 and upstanding vertical walls 34. The flange 32 and base 33 are provided with aligned pivot holes through which passes a suitable pivot means here shown as a screw 35 having on its lower end a nut 36. Between the nut 36 and the under side of the flange 32 is a spring washer 37. On the under side of the base 33 is a radial lug or tooth 38 adapted to selectively engage in the radial grooves 39 formed in the upper face of the flange 32. The lug 38 is permitted to rise from engagement with the grooves 39 by the yielding of the spring washer 37 so that the center structure may be selectively positioned at different positions on the flange and there held. Secured to each side wall 34 is a syringe clip 40. Each of these clips is of vertical channel form having a base or web portion 41 and a pair of side flanges 42 which converge from the base outwardly and are provided with flaring lips 43. These clips may be of different widths as shown in Figure 4 to accommodate syringes S of different diameters. Obviously, removal of the screw 35 will permit the substitution of one set of syringe clips for another so that a wide variety of syringe sizes may be permitted. These clips are held to the center structure by suitable means such as the screws 44 and at the upper and lower ends of the clips are narrow flanges 45 which serve to position the syringes S so that each of their needles N will be axially aligned with the bottle holder means 13 and 25 upon the syringe holder being revolved to bring a selected syringe in position for use.

In the form shown in Figures 8 to 13 inclusive the movable standard section 23 is provided with a straight upper end 46 and on this is slidably and removably fitted a head 47 of flattened tubular form and having oppositely disposed slots 48 at its bottom portion.

Through the upper part of the head 47 extends a horizontal revoluble member here shown as a hollow or tubular rivet 49. Fixed on each end of this pivot is a pair of syringe clips, the clips of each pair being disposed at right angles to each other. Each clip consists of a base plate 50 having at each end a pair of converging flanges 51 and a short transverse positioning flange 52.

Each of the standard sections 22 and 23 is provided with a vertical slot 53 to prevent contact of the needles N with the standard in placing the syringes in the clips and in removing them.

It will be noted that each of those constructions has a syringe holder which permits a syringe to be revolved into and out of cooperation with the bottle.

In the form just described two syringes at a time may be held in the syringe support or carrier and may be selectively positioned over the bottle by removing the head. Notches 54 and a lug 55 serve to releasably hold the clips in desired positions.

The syringes are charged by placing them in the clips in such position that their needles will lie above the top of a bottle placed in the bottle holder. A selected syringe is alined vertically above the bottle holder by turning the head and this syringe is there slid downwardly in the clip until the needle enters the bottle. Then the syringe plunger is manipulated in the usual manner to fill the syringe.

There has thus been provided a simple and efficient device of the kind described and for the purpose specified.

It is obvious that minor changes may be made in the form and construction of the invention without departing from the material spirit thereof. It is not, therefore, desired to confine the invention to the exact form herein shown and described, but it is desired to include all such as properly come within the scope claimed.

Having thus described the invention, what is claimed as new, is:

1. In a bottle and syringe support, a base, bottle holding means associated therewith, standard means extending up from said base, a head shiftably mounted on said standard, and a plurality of syringe clips carried by said head and arranged for revolution about a common center for movement into and out of vertical alignment with said bottle holding means.

2. In a bottle and syringe support, a base, bottle holding means associated therewith, standard means extending up from said base, a head shiftably mounted on said standard, a plurality of syringe clips carried by said head and arranged for revolution about a common center for movement into and out of vertical alignment with said bottle holding means, and means for releasably retaining the selected clips in aligned positions.

3. In a bottle and syringe support having a bottle positioning means and a base with which said positioning means is associated, a standard supported from said base to extend upwardly therefrom, a head mounted on the upper end of said standard to revolve on a vertical axis, and a series of syringe clips extending radially from said head, said clips being constructed and arranged to position the syringes held therein successively in vertical alignment with a bottle held in said positioning means upon rotation of the head.

4. In a bottle and syringe support having a bottle positioning means and a base with which said positioning means is associated, a standard supported from said base to extend upwardly therefrom, a head mounted on the upper end of

said standard to revolve on a vertical axis, a series of syringe clips extending radially from said head, said clips being constructed and arranged to position the syringes held therein successively in vertical alignment with a bottle held in said positioning means upon rotation of the head, and latching means releasably holding each selected clip in such syringe aligning position.

5. In a bottle and syringe support having a base and a bottle positioning means, a standard extending upwardly from said base and provided with a laterally extending flange, a vertical pivot carried by said flange, a prismatic head axially mounted on said pivot, and a series of vertically extending spring clips fixed to the sides of said head and rotatable therewith for selective vertical alignment with the bottle positioning means.

6. In a bottle and syringe support having a base and a bottle positioning means, a standard extending upwardly from said base and provided with a laterally extending flange, a vertical pivot carried by said flange, a prismatic head axially mounted on said pivot, a series of vertically extending spring clips fixed to the sides of said head and rotatable therewith for selective vertical alignment with the bottle positioning means, and latching means releasably holding the clips in aligned positions.

7. In a bottle and syringe support having a base and a bottle positioning means, a standard extending upwardly from said base and provided with a laterally extending flange, a vertical pivot carried by said flange, a prismatic head axially mounted on said pivot, and a series of vertically extending spring clips fixed to the sides of said head and rotatable therewith for selective alignment with the bottle positioning means, each of said clips being of channel-like form and having a base by which it is secured to the head and a pair of spring flanges converging from said base outwardly, each of said clips further having syringe engaging means at the upper and lower ends of the base.

8. In a bottle and syringe support having a base and a bottle positioning means, a standard extending upwardly from said base and provided with a laterally extending flange, a vertical pivot carried by said flange, a prismatic head axially mounted on said pivot, and a series of vertically extending spring clips fixed to the sides of said head and rotatable therewith for selective alignment with the bottle positioning means, each of said clips being of channel-like form and having a base by which it is secured to the head and a pair of spring flanges converging from said base outwardly, each of said clips further having syringe engaging means at the upper and lower ends of the base, and latching means releasably holding the clips in aligned positions.

9. In a bottle and syringe support having a base and a bottle positioning means, a standard extending upwardly from said base and provided with a laterally extending flange, a vertical pivot carried by said flange, a prismatic head axially mounted on said pivot, a series of vertically extending spring clips fixed to the sides of said head and rotatable therewith for selective alignment with the bottle positioning means, each of said clips being of channel-like form and having a base by which it is secured to the head and a pair of spring flanges converging from said base outwardly, each of said clips further having syringe engaging means at the upper and lower ends of the base, said flange having a circular series of notches in its upper face, a lug on the under side of said head for engagement in selected notches, and spring means urging said head and flange together.

10. In a bottle and syringe support having a base and a bottle positioning means, a standard extending upwardly from said base, a head vertically socketed on the upper end of said standard for engagement thereon in a plurality of selectable positions, a pivot member extending horizontally and revolubly through said head, and syringe clips carried by the opposite ends of the pivot member for selective positioning over the bottle positioning means and revoluble into and out of alignment therewith when positioned thereover.

11. In a bottle and syringe support having a base and a bottle positioning means, a standard extending upwardly from said base, a head vertically socketed on the upper end of said standard for engagement thereon in a plurality of selectable positions, a pivot member extending horizontally and revolubly through said head, syringe clips carried by the opposite ends of the pivot member for selective positioning over the bottle positioning means and revoluble into and out of alignment therewith when positioned thereover, and latching means releasably holding the clips in aligned positions.

12. In a bottle and syringe support having a base and a bottle positioning means, a standard extending upwardly from said base, a head vertically socketed on the upper end of said standard for engagement thereon in a plurality of selectable positions, a pivot member extending horizontally and revolubly through said head, and syringe clips carried by the opposite ends of the pivot member for selective positioning over the bottle positioning means and revoluble into and out of alignment therewith when positioned thereover, each of said clips consisting of an elongated base portion fixed to the pivot member and provided at each end with a pair of outwardly converging spring fingers and a syringe barrel engaging and positioning flange.

13. In a bottle and syringe support having a base and a bottle positioning means, a standard extending upwardly from said base, a head vertically socketed on the upper end of said standard for engagement thereon in a plurality of selectable positions, a pivot member extending horizontally and revolubly through said head, syringe clips carried by the opposite ends of the pivot member for selective positioning over the bottle positioning means and revoluble into and out of alignment therewith when positioned thereover, each of said clips consisting of an elongated base portion fixed to the pivot member and provided at each end with a pair of outwardly converging spring fingers and a syringe barrel engaging and positioning flange, and latching means releasably holding the clips in aligned positions.

14. In a bottle and syringe support having a base and a bottle positioning means, a standard extending upwardly from said base, a head vertically socketed on the upper end of said standard for engagement thereon in a plurality of selectable positions, a pivot member extending horizontally and revolubly through said head, and syringe clips carried by the opposite ends of the pivot member for selective positioning over the bottle positioning means and revoluble into and out of alignment therewith when positioned thereover, each of said clips consisting of an

elongated base portion fixed to the pivot member and provided at each end with a pair of outwardly converging spring fingers and a syringe barrel engaging and positioning flange, there being a pair of spring clips at each end of said pivot with the clips of each pair disposed in right angular relation.

15. In a bottle and syringe support having a base and a bottle positioning means, a standard extending upwardly from said base, a head vertically socketed on the upper end of said standard for engagement thereon in a plurality of selectable positions, a pivot member extending horizontally and revolubly through said head, and syringe clips carried by the opposite ends of the pivot member for selective positioning over the bottle positioning means and revoluble into and out of alignment therewith when positioned thereover, each of said clips consisting of an elongated base portion fixed to the pivot member and provided at each end with a pair of outwardly converging spring fingers and a syringe barrel engaging and positioning flange, there being a pair of spring clips at each end of said pivot with the clips of each pair disposed in right angular relation, and latching means releasably holding the clips in aligned positions.

JOHN A. O'NEILL.