

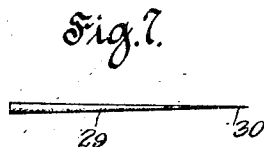
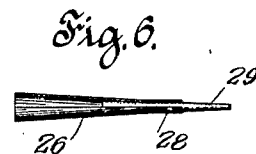
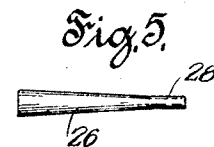
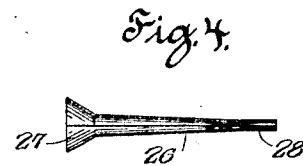
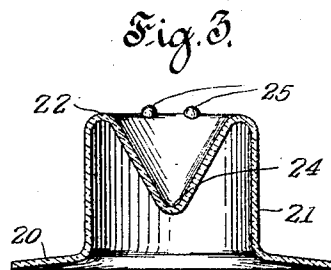
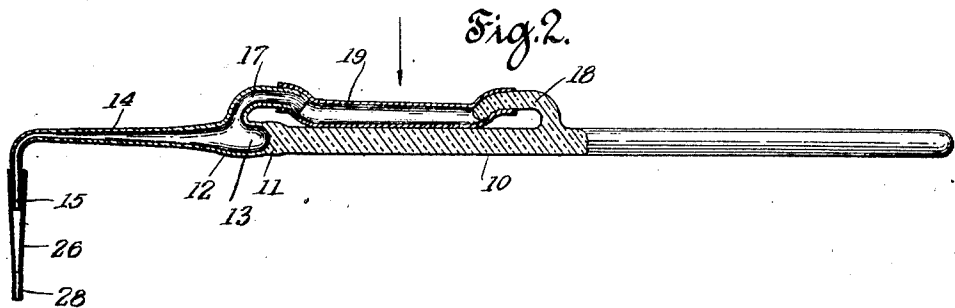
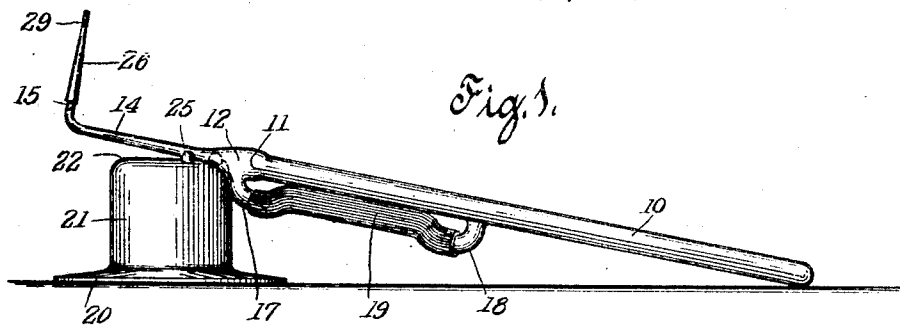
Feb. 16, 1926.

1,573,224

P. N. CONDIT

LIQUID APPLICATOR

Filed March 31, 1924



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UNITED STATES PATENT OFFICE.

PARK N. CONDIT, OF BOSTON, MASSACHUSETTS.

LIQUID APPLICATOR.

Application filed March 31, 1924. Serial No. 703,182.

To all whom it may concern:

Be it known that I, PARK N. CONDIT, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Liquid Applicators, of which the following is a specification.

This invention relates to improvements in devices used in dispensing and applying minute quantities of liquid in an accurate and positive manner.

One of the objects of the invention is to provide an instrument capable of being easily manipulated to cause it to become filled or charged with liquid to any desired extent, up to capacity, or dispensed in accordance with requirements, the discharge being under complete control of the operator.

Another purpose is to produce an apparatus essentially simple in design and construction, readily amenable to cleansing and sterilization and having associated with it applicator points having the qualities of transparency and flexibility, permitting distribution of the liquid into cavities difficult of access and without danger of damage to the transparent but rigid portion of the apparatus or the parts to which it is applied.

A further aim is in the provision of means, including a needle-like brush, for making the most delicate applications of minute quantities of liquid with precision to parts requiring such applications.

A still further object is to provide a receptacle, particularly designed to contain a small quantity of the liquid to be used, into which the point of the applicator may be inserted, thus avoiding waste of material, said receptacle having on its edge, means for supporting the instrument during intermission of operation.

These and other analogous aims and objects are accomplished by the novel design, construction and combination of parts hereinafter described and shown in the accompanying drawing, forming a material part of this disclosure, and in which:—

Figure 1 is a side elevational view of an embodiment of the invention, shown in position of rest.

Figure 2 is a partial longitudinal sectional view of the same, drawn to an enlarged scale.

Figure 3 is a sectional view of the com-

bined liquid container and instrument support in detail.

Figure 4 is a partial side, partial sectional view of one of the flexible applicator point elements before trimming.

Figure 5 is a side view of the same as trimmed ready to attach to the nozzle of the instrument.

Figure 6 is a partial side, partial sectional view of the same, showing the brush element engaged therein.

Figure 7 is a side view of the needle brush in detail.

As shown in the drawing, the instrument is composed of a small cylindrical solid glass rod 10 having a smoothly rounded outer end, its inner end 11 being slightly enlarged and fused to a tube 12 presenting a chamber 13.

Said tube is drawn straight outward to form a conical element 14 and preferably bent at a right angle which constitutes a nozzle 15, there being a fine opening extending throughout from the chamber 13.

A tubular extension 17 also communicates with the chamber 13, said extension leading rearwardly being spaced adjacent the body 10.

Fused with the body 10 is a solid projection 18, bent to extend forward, in register with the tube extension 17, with which it agrees in outer diameter.

A flexible tube 19, as of rubber, has its ends forcibly engaged over the adjacent ends of the tube 17 and projection 18 respectively.

It will now be apparent that if the wall of the flexible tube be compressed, as by placing the finger of an operator's hand upon it, and pressing the tube against the glass rod 11, with which it is parallel and normally in contact, the air in the tube will be forced out and expel any liquid which may be contained in the chamber 13 or conical tube leading therefrom.

Conversely, upon allowing the tube 19 to assume its normal cylindrical condition, and having the end of the nozzle 15 disposed in a liquid, the liquid will be drawn into the tube and chamber, in accordance with the partial vacuum produced by expansion of the tube 19.

In order to provide a particularly effective container for supplying liquid to the nozzle the device shown in Figures 1 and 3 is used.

This container is composed of a flanged base 20 from which rise cylindrical walls 21, curved at their upper portion 22 and then brought convergingly inward to the inverted apex 24, the same being suited to hold even a single drop of liquid so that it can be received in the nozzle 15 without loss.

In addition, the upper rounded edge 22 is provided with a pair of spaced upstanding rounded projections or knobs 25 adapted to receive between them the coned portion of the instrument, as seen in Figure 1.

These containers may be made transparent or in colors, each color signifying the particular variety of liquid to be used therein and acting to readily identify same.

The applicator points, shown in detail in Figures 4 and 5, consist of hollow conical bodies 26 having, in their original shape, a widely coned head 27 and a straight cylindrical opposite end portion 28, this body having a trumpet shape.

These applicator points are preferably made of material having the properties of translucency and flexibility, as celluloid and are trimmed at their ends, as in Figure 5, to be readily applied over the nozzle 15 and adhere until forcibly removed, the extending portion of the applicator points being conformable to requirements.

The needle brush element 29 shown in detail in Figure 7, is a finely tapered cone of highly absorbent fibers or filaments, suited to enter the applicator points, the point 30 of the brush being trimmed back if desired to present a soft pliable contact, and convey liquid as required, the liquid being acted upon by capillary attraction, or forced by compression of the tube 19.

It will be apparent that the needle brushes and applicator points are intended for use once only and then replaced or substituted by others, their cost being negligible.

In order to sterilize the instrument, the tube 19 may be removed and the glass body subjected to such treatment as may be preferred.

Although I have described my improvements with considerable detail and with respect to certain particular forms of my invention, I do not desire to be limited to such details since many changes and modifications may well be made without departing from the spirit and scope of my invention, in its broadest aspect.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A liquid applicator comprising a solid rod having a chamber at one end, a contracted conical tube leading therefrom, said tube being bent at an angle near its end, a rearwardly turned tube communicating

with the mentioned chamber disposed adjacent said rod, a forwardly turned projection on said rod in register with the last named tube, and a flexible tube connected at its ends with the last named tube and said projection respectively, said flexible tube being substantially parallel with and in contact with said rod.

2. A liquid applicator comprising a solid rod having a chamber at one end, a transparent conical tube communicating with the chamber and extending in register with said rod, a cylindrical tube communicating with the chamber and bent to extend rearward adjacent the rod, a flexible tube engaging the open end of said cylindrical tube, means for plugging and supporting the opposite end of said tube, and a nozzle on the end of said conical tube bent to extend at an angle relative to the tube.

3. A liquid applicator comprising a glass bar having a chamber at one end and a conical tube leading therefrom, said bar extending oppositely to constitute a handle; means carried on said rod at the side thereof for expelling or drawing liquid relative to the chamber, and a bent nozzle on the end of said conical tube.

4. A liquid applicator comprising a solid glass rod having a chamber at one end and a conical tube leading therefrom, means carried on said rod parallel therewith for entering or expelling liquid relative to the chamber, a nozzle disposed at an angle on said conical tube, and a hollow flexible transparent applicator point removably engaged on said nozzle.

5. A liquid applicator comprising a glass rod having a chamber at one end and a conical tube leading therefrom, means carried at the side of said rod for entering or expelling liquid relative to the chamber, and a flexible applicator point removably engaged on the end of said conical tube.

6. A liquid applicator comprising a glass rod having a chamber at one end and a conical tube leading therefrom, means carried on said rod for entering or expelling liquid relative to the chamber, a hollow flexible and transparent applicator point engageable over the end of said conical tube, and a highly flexible foraminous brush engaged within said applicator point to extend therefrom.

7. In combination with an applicator of the class described, of a transparent conical tube adapted to engage over the discharge end of the applicator, and a needle pointed fibrous brush adapted to enter and extend through said tube.

In testimony whereof I have signed my name to this application.

PARK N. CONDIT.