N. K. GARHART.

BOTTLE OR JAR FOR DISPENSING DENTAL LIQUIDS AND THE LIKE.

APPLICATION FILED AUG. 15, 1918.

1,304,304. Patented May 20, 1919.

Fig. 1.

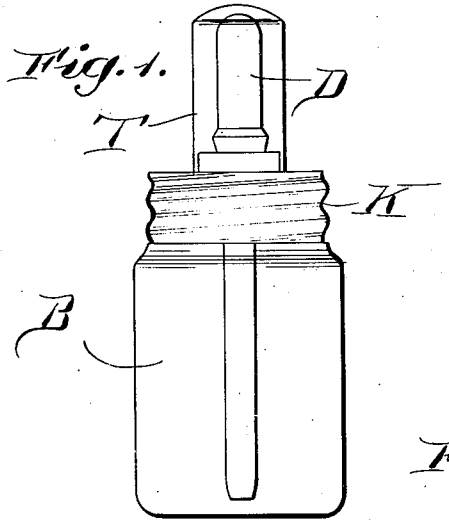


Fig. 2.

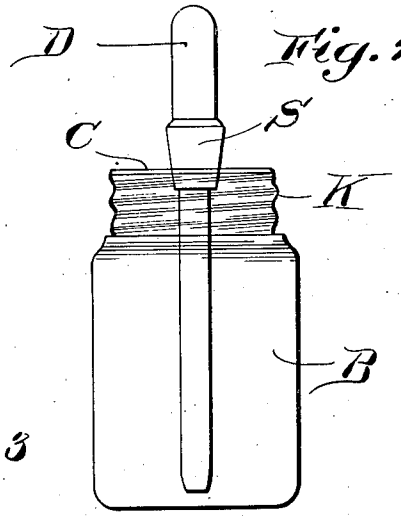


Fig. 3

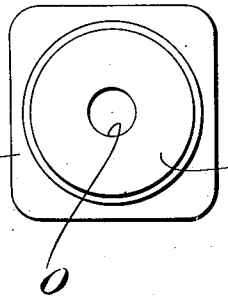


Fig. 4.

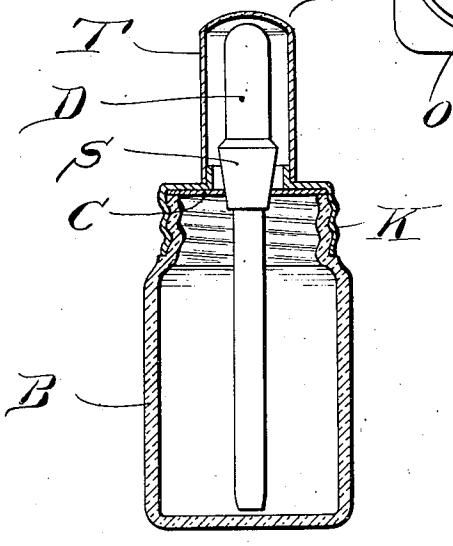
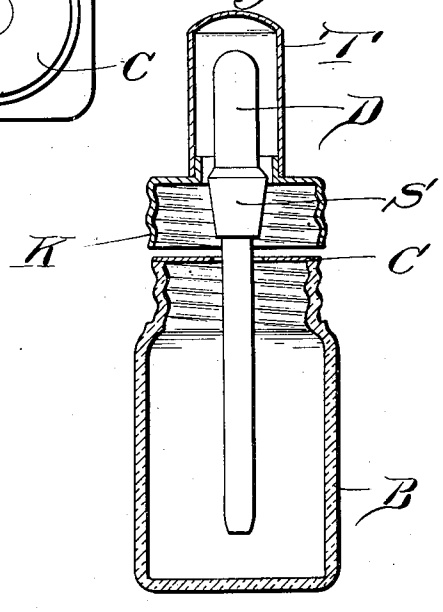


Fig. 5



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BOTTLE OR JAR FOR DISPENSING DENTAL LIQUIDS AND THE LIKE.

1,304,304. Specification of Letters Patent. Patented May 20, 1919.

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To all whom it may concern:

Be it known that I, NATHAN K. GARHART, citizen of the United States, and resident of Watertown, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Bottles or Jars for Dispensing Dental Liquids and the like, of which the following is a specification.

This invention relates to bottles or jars and more particularly to bottles for dispensing dental liquids and the like.

In preparing porcelain and other materials for use in filling teeth it is customary to keep a part of the ingredients in powder form in one bottle and a part of the ingredients in liquid form in another container and not to mix the liquid and powder until immediately before using. In mixing the ingredients the liquid is removed from the liquid bottle and gradually added to the powder by means of a dropper.

The principal objects of the present invention are to provide a bottle or jar which is particularly adapted to contain dental liquid for the aforesaid purpose, which is provided with a dropper or with space for a dropper, which has a cap constituting a combined covering for the bottle and housing for the dropper, which has a cover for permanently covering the bottle while at the same time permitting the dropper to be inserted into the bottle through an opening therein, which has a dropper provided with a stopper adapted to seat in aforesaid opening, in which the aforesaid permanent cover is thin and flexible, and in which the housing for the outer portion of the dropper is thin, tough and flexible and also preferably transparent, for purposes which will appear hereinafter.

For the purpose of illustration I have shown the preferred embodiment of my invention in the accompanying drawings, in which,—

Figure 1 is a side elevation of the bottle with the dropper and cap in place;

Fig. 2 is a similar view with the cap removed;

Fig. 3 is a top view of the bottle with both the cap and dropper removed;

Fig. 4 is a vertical central section of the bottle with the dropper and cap in place; and

Fig. 5 is a view similar to Fig. 4 showing the parts slightly separated.

The preferred embodiment of my invention illustrated in the drawings comprises a bottle B, a cover C, a dropper D and a cap K, the dropper D having a stopper S adapted to seat in an opening O in the cover C. The cover C is fast to the mouth of the bottle and forms a permanent closure therefor. The cap K is adapted to be threaded on the neck of the bottle although it will be understood that it might otherwise be arranged to be detachably secured to the bottle. The upper portion T of the cap K is constructed differently from the lower portion as will be described hereinafter.

The cover C is made sufficiently stiff and rigid to maintain its position and to provide a seat for the stopper but on the other hand it is made sufficiently flexible to permit a certain amount of flexing. Thus if the dropper is carelessly inserted too far or too hard or if the dropper is removed too violently the elasticity of the cover will prevent the cover from being broken. Moreover, the flexibility of the cover permits the dropper to be swung laterally to reach the corners of the bottle and if the dropper is so swung either intentionally or accidentally the cover will not crack or break but will return to its normal position. The best material with which to produce a cover of the character described is celluloid. When the cover C is made of celluloid it is secured to the mouth of the bottle with an adhesive material which is insoluble in the contents of the bottle, *e. g.*, varnish.

With the cover C fast around its periphery to the mouth of the bottle and with only a small opening in the center of the cover the content of the bottle is protected from spilling in the event the bottle is tipped over and is also protected from evaporation. Certain of the advantages of the cover C could be secured by forming the cover as an integral part of the bottle but it would be impracticable to blow small bottles of this character with the cover C thus formed.

The stopper S is preferably formed inte-

grally with the forward end of the rubber portion of the dropper D and is preferably tapered so as to be more readily seated in the opening O of the cover C. With the tapered stopper formed of medium soft rubber the stopper forms a very tight fit with the thin cover inasmuch as the thin cover depresses the stopper to a considerable depth. Moreover, the stopper can be more readily inserted and removed inasmuch as it engages the cover throughout only a very small area; indeed the stopper may be removed by the thumb and finger while holding the bottle down with another finger on the same hand thereby rendering it unnecessary to use both hands in removing the dropper.

According to the present invention the lower portion of the cap is made slightly elastic so that it will adapt itself to slight irregularities in the neck of the bottle but is made relatively heavy so as to maintain its shape and withstand the stress and wear incident to threading it on and off the bottle. The material which I believe to be superior for making the lower portion of the cap is heavy opaque celluloid, the cap being formed from this material by stamping and pressing operations.

A cardinal feature of the present invention resides in the construction of the upper portion T of the cap K. My improved bottles are intended to be shipped from the factory or distributing house with the dental or other liquid contained therein and I have found that they frequently receive rough treatment in transit. Owing to the fact that the small top T of the cap projects from the bottle in an exposed position there is danger of its being struck or pressed to one side even when well packed. I therefore propose to form the top T of such material that if subjected to a blow or pressure it will not break but will yield and at the worst merely be deformed. I have discovered that thin tough transparent celluloid similar to the thin trough transparent gelatinous material used in medicine capsules possesses characteristics which render it peculiarly adapted to the purpose. The top T is formed by dipping a mold into liquid celluloid and causing the coating of celluloid adhering to the mold to harden after which the mold is withdrawn from the top. The top may be secured to the base of the cap in any suitable manner but I prefer to strike up a flange from the base and glue the top to the flange.

With a cap formed as above described I have found that there is little danger of the cap being opened in transit so as to spill the liquid contained in the bottle. If the top T receives only a light blow or slight pressure it will afterward spring back to its original shape and position due to its elasticity. If it receives a heavy blow or pressure it will be permanently deformed but it will seldom break; indeed even if pressed almost flat or crushed far down it will ordinarily not crack. If the entire cap were made of the thin celluloid it could not be tightly secured to the mouth of the bottle and would be liable to crack and split at the bottom. If the entire cap were made of the heavy celluloid required for the base the top would crack or break when subjected to an undue blow or pressure. However, by forming the cap in the unique way herein disclosed it proves satisfactory in every respect.

Moreover, my improved cap affords the advantage, together with the aforesaid and other advantages, that it can be seen whether the dropper is in place without removing the cap.

I claim:—

1. In an article of the character described for dispensing dental liquids and the like, the combination of a bottle, a flexible disk cemented over the mouth of the bottle, the disk having an opening therein through which a dropper may be inserted into the bottle, and a dropper having a stopper adapted to seat in said opening when the dropper is inserted into said bottle.

2. In an article of the character described for dispensing dental liquids and the like, the combination of a bottle, a celluloid disk glued over the mouth of the bottle, said disk having an opening therein, and a dropper having a stopper seating in said opening.

3. In an article of the character described for dispensing dental liquids and the like, the combination of a bottle, a disk covering the mouth of the bottle, the disk having an opening therethrough, a dropper having a stopper near the rear end thereof adapted to close said opening when the dropper is inserted into said bottle, and a cap for said bottle, the cap having a relatively thick stiff base adapted to connect with the bottle and having a relatively thin flexible top surrounding that portion of the dropper which projects from the mouth of the bottle, whereby the top will yield under blows or pressures and will not readily break.

4. In an article of the character described for dispensing dental liquids and the like, the combination of a bottle, a stiff flexible disk covering the mouth of the bottle, the disk having an opening therein through which a dropper may be inserted into the bottle, a dropper having a stopper adapted to seat in said opening when the dropper is inserted into said bottle, and a cap for said bottle, the cap having a base of relatively heavy celluloid adapted to connect

with the bottle and having a top of thin transparent celluloid surrounding a portion of the dropper which projects from the mouth of the bottle.

5. In an article of the character described for dispensing dental liquids and the like, the combination of a bottle, a dropper adapted to seat in the mouth of the bottle, and a cap for said bottle, the cap having a relatively stiff base adapted to connect with the bottle and having a thin tough flexible top surrounding that portion of the dropper which projects from the mouth of the bottle.

Signed by me at Boston, Massachusetts, this twelfth day of August 1918.

NATHAN K. GARHART.