

E. C. GLINES.

DROPPER.

APPLICATION FILED MAR. 23, 1908.

903,467.

Patented Nov. 10, 1908.

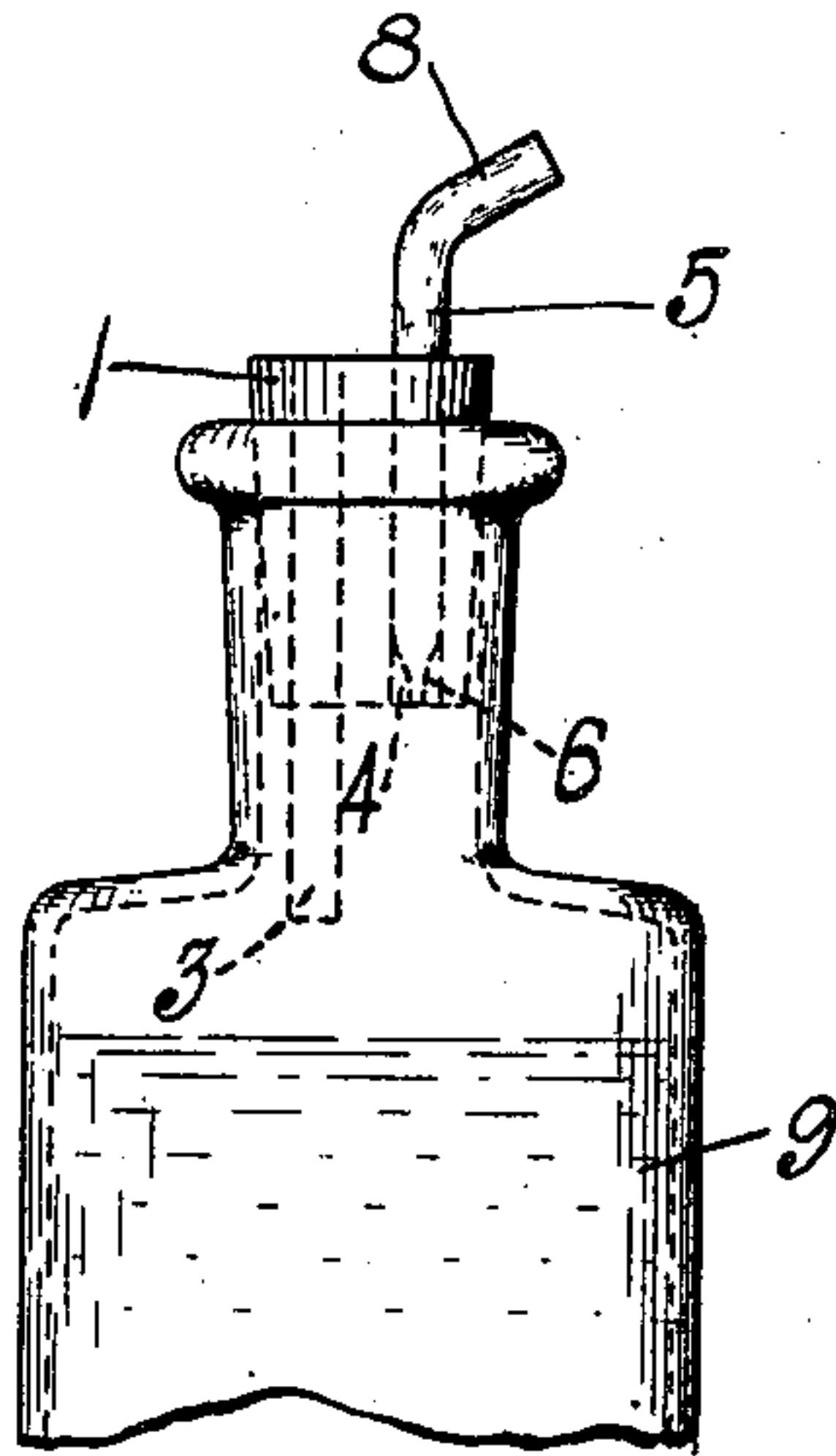


FIG. 1.

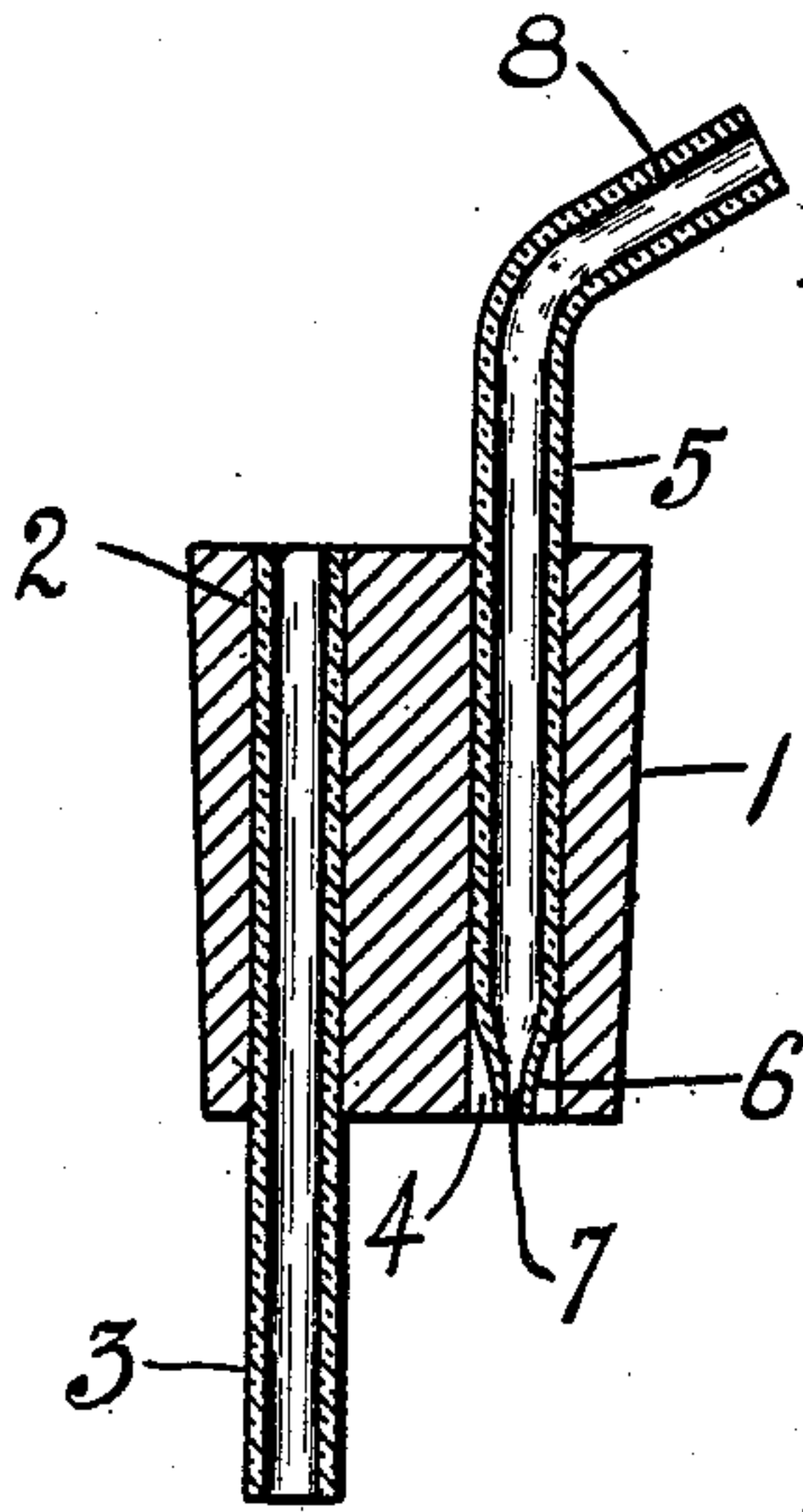


FIG. 2.

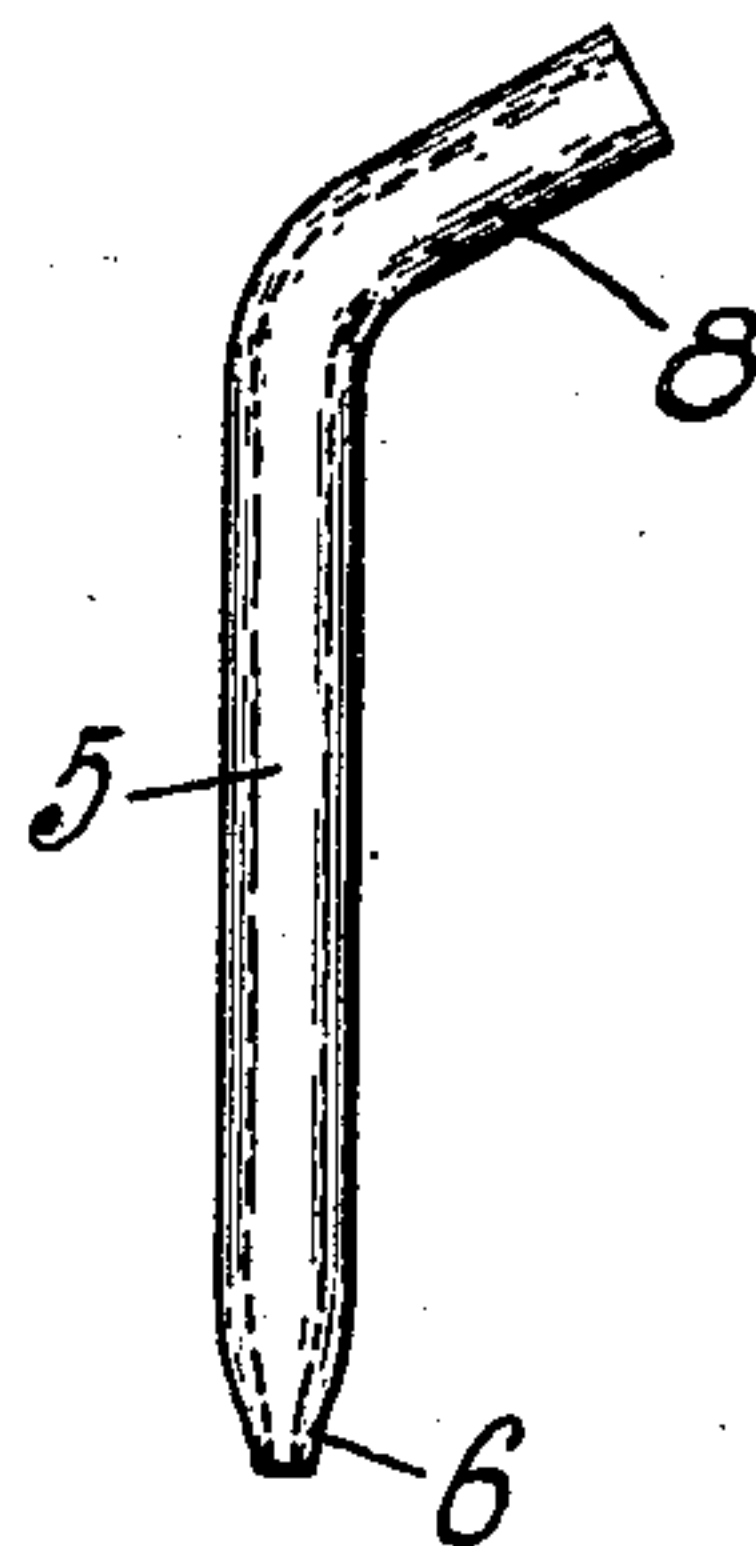


FIG. 3.

WITNESSES.

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DROPPER.

No. 903,467.

Specification of Letters Patent.

Patented Nov. 10, 1908.

Application filed March 23, 1908. Serial No. 422,639.

To all whom it may concern:

Be it known that I, EARL C. GLINES, of the city and county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Droppers; and I do hereby declare the following specification, taken in connection with the accompanying drawings, forming a part of the same, to be a full, clear, and exact description thereof.

The invention relates to an improved dropper of the general character shown and described in Letters Patent to Burton W. Phelps and myself, No. 878,668, dated February 11, 1908, and has for its object to provide a dropper of this character which is more simple in construction and more efficient in its operation than said previous dropper.

It has been found that the use of the plug in the outlet tube of the dropper in the patent above referred to is objectionable, not only because said plug forms an obstruction to the free flow of the liquid into said tube and interferes with the cleaning of said tube after using, but also because it is necessary to employ a cement or similar material to hold the plug in place in the tube, which cement is affected by, or affects, certain medicines. Furthermore, there is a tendency for the plug to break the glass tube when it is forced into the end thereof, and, as the hole through said tube is not always uniform in size and contour, it is often difficult, and sometimes impossible, to make the plug fit the tube.

It is the object of the present invention to obviate the above objections by eliminating the plug altogether, and forming and arranging the end of the outlet tube in such a manner as to control the flow of the liquid into said tube.

To this end the invention consists of the novel construction of dropper hereinafter described and claimed, reference being made to the accompanying drawings in which

Figure 1 is a side elevation of the upper portion of a bottle provided with my improved form of dropper. Fig. 2 is a central vertical section on an enlarged scale of the dropper detached. Fig. 3 is an enlarged detail view of the outlet tube detached.

Referring to the drawings 1 represents an ordinary bottle stopper which may be made of cork, rubber, or any other suitable mate-

rial, and may be of any desired shape or size to correspond with the mouth of the bottle in which it is to be used. Extending vertically through the stopper 1 is a hole 2 in which is mounted an air tube 3, which is preferably made of glass and extends below the inner end of the stopper 1. Extending vertically through the stopper 1 is a second hole 4 in which is mounted an outlet tube 5, which is also preferably made of glass. The tubes 3 and 5 may be held in place in the holes 2 and 4 in any convenient manner, but are preferably held therein by friction.

The inner end 6 of the outlet tube 5 is drawn down to a taper to form the small inlet opening 7, which opening is located at or near the inner end of the stopper 1, and the outer end 8 of said outlet tube extends beyond the outer end of said stopper and is preferably bent at an angle to the body portion of said tube.

The operation of the device is as follows: If it is desired to remove a portion of the contents of the bottle drop by drop, the usual stopper is removed from said bottle and my improved dropper is inserted, the stopper 1 being pressed tightly into the mouth and neck of the bottle, as shown in Fig. 1, so as to form a tight closure therefor. With the stopper thus in place, if the bottle 9 is inverted, the liquid will first enter the inner end of the hole 4 and surround the tapered end 6 of the outlet tube 5, until it reaches a point where it will flow through the small opening 7, gradually filling the tube 5 as the air enters the bottle through the air tube 3 and finally passing out of the outer end 8 a drop at a time.

It will be seen that the drawing of the end 6 of the outlet tube 5 down to a taper greatly reduces the thickness of the wall of said tube at the inlet end and that there is no obstruction to the free flow of the liquid into said tube. After the desired amount of liquid has been removed from the bottle and said bottle is brought to upright position, the liquid remaining in the tube 5 will flow back into said bottle and the dropper may then be removed until again required for use.

With the above construction, it will be seen that the dropper is composed entirely of cork and glass and that there is no foreign substance used which might affect, or

be affected by, the medicine, or other contents of the bottle. It will also be seen that there is nothing tending to obstruct the flow of the liquid into, or out of, the inner end of the outlet tube, and that said outlet tube can be easily and readily cleaned at any time.

What I claim as my invention and desire to secure by Letters Patent is:

1. An article of the character described, comprising a stopper, an air-tube mounted in said stopper, and an outlet-tube mounted in said stopper and extending beyond the outer end thereof, the wall of said outlet-tube being contracted at its inner end so as to reduce the size of the inlet of said tube.

2. An article of the character described, comprising a stopper, an air-tube mounted

in said stopper, and an outlet-tube mounted in said stopper and extending beyond the outer end thereof, the wall of said outlet-tube being drawn down to a taper at its inner end so as to reduce the size of the inlet of said tube.

3. An article of the character described, comprising a stopper, an air-tube mounted in said stopper and an outlet-tube mounted in said stopper and extending beyond the outer end thereof, the inner end of said outlet-tube being smaller than the hole in the stopper in which it is mounted.

EARL C. GLINES.

Witnesses:

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