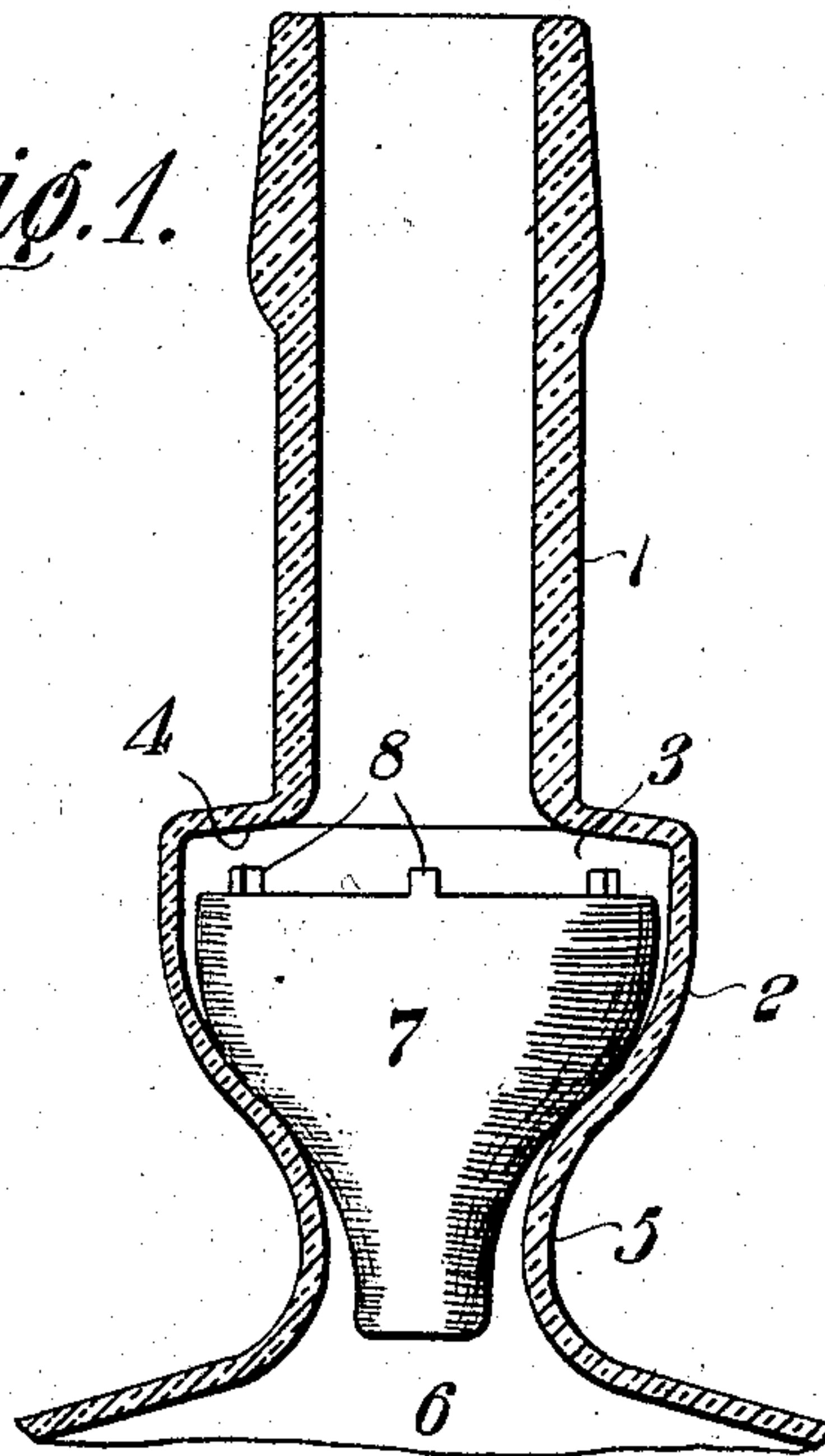


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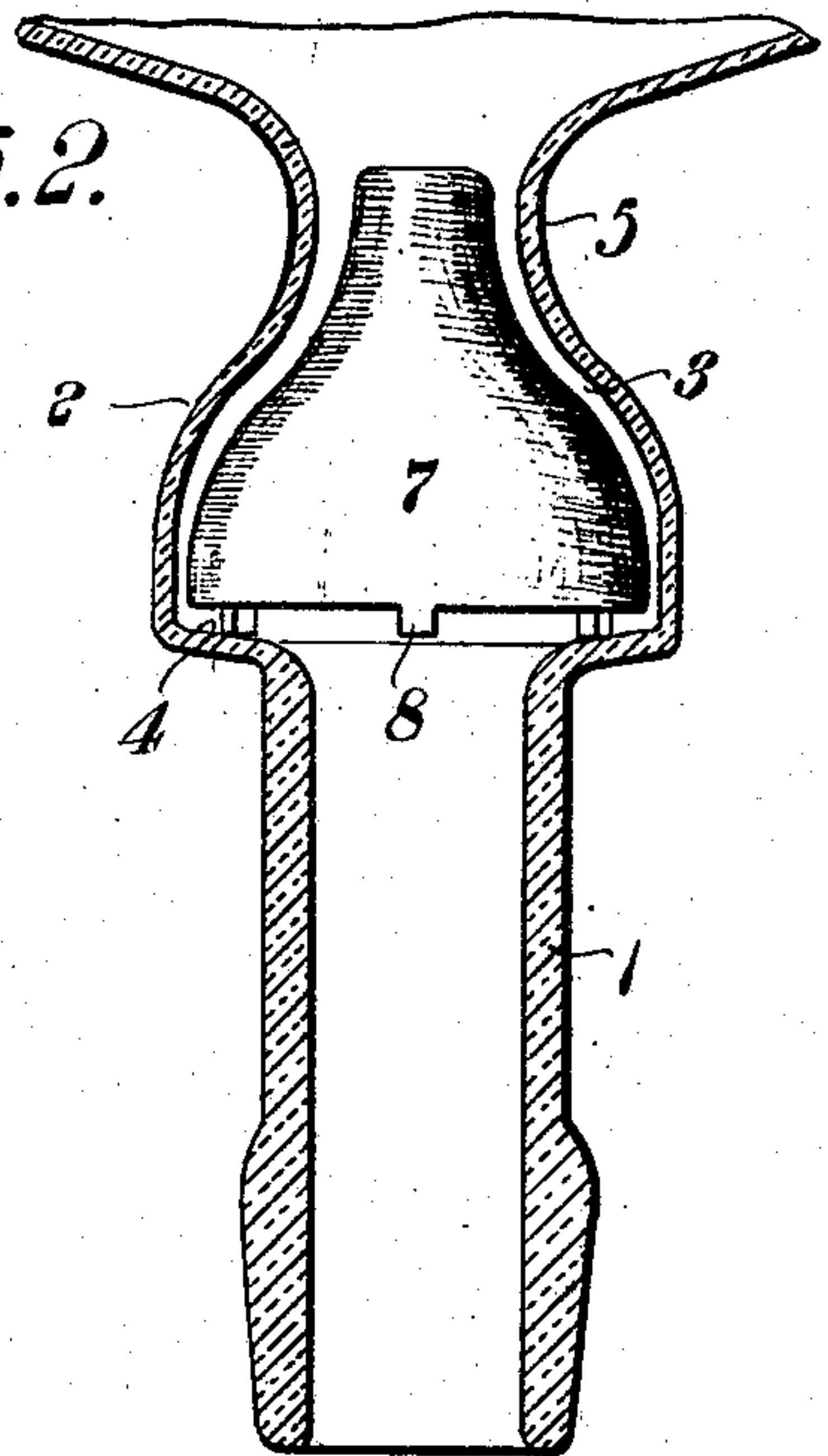
PATENTED APR. 21, 1908.

L. C. FURCOLO.  
NON-REFILLABLE BOTTLE.  
APPLICATION FILED FEB. 5, 1907.

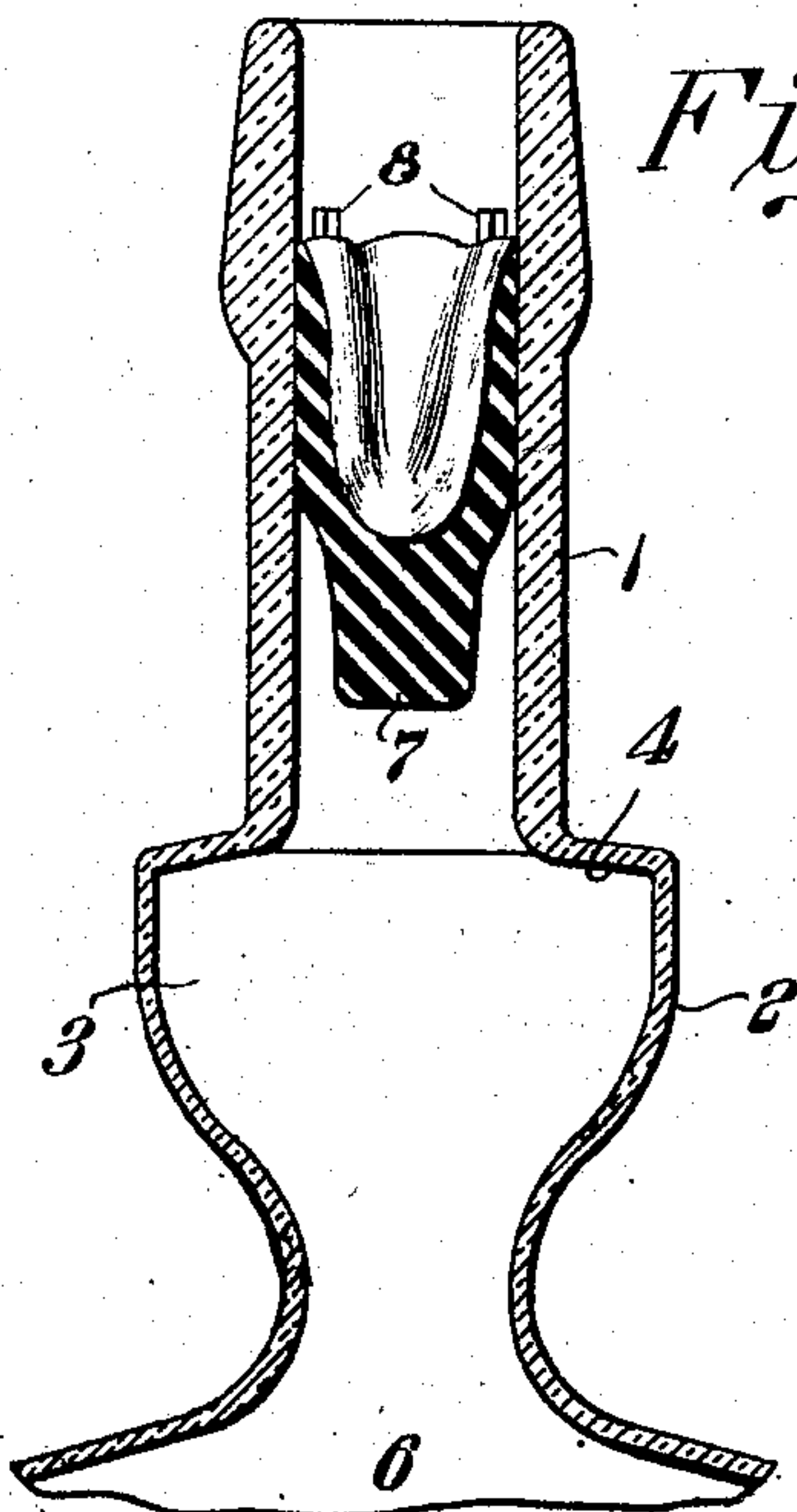
*Fig. 1.*



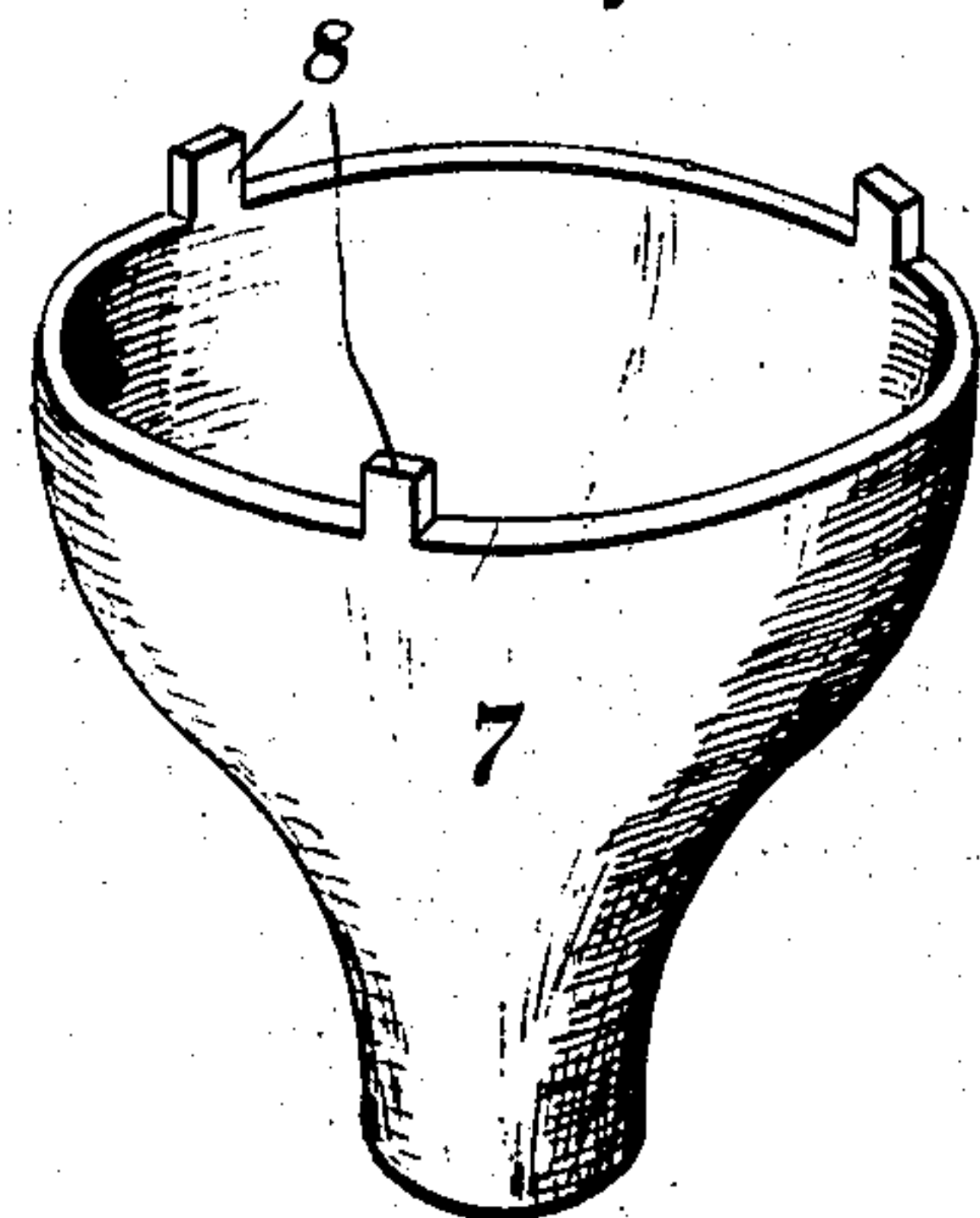
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



WITNESSES:

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INVENTOR

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# UNITED STATES PATENT OFFICE.

LORENZO C. FURCOLO, OF NEW HAVEN, CONNECTICUT.

## NON-REFILLABLE BOTTLE.

No. 885,035.

Specification of Letters Patent.

Patented April 21, 1908.

Application filed February 5, 1907. Serial No. 355,882.

*To all whom it may concern:*

Be it known that I, LORENZO C. FURCOLO, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Non-Refillable Bottle, of which the following is a specification.

This invention relates to a non-refillable bottle of that type in which the neck is provided with an enlargement for receiving an expansible stopper that is thrust into the neck after the bottle is filled so as to thereafter permit the contents to be emptied, when desired, and prevent refilling of the bottle.

The invention has for one of its objects to improve and simplify the construction of devices of this character, so as to be comparatively easy and inexpensive to manufacture, and thoroughly reliable and efficient in use.

A further object of the invention is the provision of a bottle having a portion of its neck enlarged and provided with a stopper made of elastic material so that the same can be thrust into the neck and automatically expand upon reaching the enlarged portion thereof so as to form a seal against the entrance of liquid into the bottle but not preventing the bottle from being initially emptied.

Another object of the invention is the employment of a simple and novel form of stopper made of suitable material, such as rubber, that snugly fits in the neck of the bottle when the latter is in filling position and automatically unseats when the bottle is tilted to pour out the contents thereof.

With these objects in view, and others, as will appear as the nature of the invention is better understood, the invention comprises the various novel features of construction and arrangement of parts, as will be more fully described hereinafter, and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates one of the embodiments of the invention, Figure 1 is a longitudinal section of the neck of a bottle with the stopper in normal position therein. Fig. 2 is a similar view showing the bottle inverted and the stopper in unseated position. Fig. 3 is a sectional view of the bottle neck with the stopper partially inserted to illustrate the method of placing the stopper. Fig. 4 is a perspective view of the stopper.

Corresponding parts in the several figures

are indicated throughout by similar characters of reference.

Referring to the drawing, 1 designates the neck of a bottle that is provided with an enlargement 2 forming a stopper receiving chamber 3. This enlargement expands abruptly at the top so as to produce a shoulder 4, and from this shoulder the enlargement 3 contracts downwardly into a secondary neck 5 that connects with the body 6 of the bottle. The stopper 7 preferably comprises a body of compressible and expansible material, such, for instance, as rubber, and it is shaped to approximately conform to the shape of the chamber 3 in the neck of the bottle. That is to say, the upper end of the stopper is considerably larger than the lower end and so proportioned that after having once been inserted into the chamber 3 it cannot be readily withdrawn. The enlarged end of the stopper is uppermost and presented to the shoulder 4, while the narrow lower end extends into the secondary neck 5.

When the stopper is in the position shown in Fig. 1, a perfect seal is formed so that liquid cannot be poured into the body of the bottle. When the bottle is inverted, the stopper is unseated so that the liquid can pass between the stopper on the interior wall of the chamber 3. To hold the stopper off the shoulder 4 so that liquid can pass out through the neck 1, a plurality of spaced lugs 8 are formed on the enlarged ends 9 of the stopper. It will thus be seen that the outward flow of the contents of the bottle is practically unrestricted when the bottle is inverted, but the filling of the bottle is positively prevented when the bottle is in its normal position.

In order to facilitate the insertion of the stopper, the upper enlarged portion thereof is hollowed out so that the comparatively thin remaining portion can be crumpled, as shown in Fig. 3, as the stopper is thrust through the cylindrical neck portion 1. When the stopper reaches the enlargement 2, the stopper automatically expands so that its enlarged upper end will extend outwardly under the shoulder 4 of the enlargement 2. As a further result of making the stopper hollow, the hollowed out part serves as a basin for collecting liquid that is poured into the neck of the bottle in an endeavor to refill the latter. The pressure of the liquid collected in the stopper and of that superimposed in the neck causes the relatively thin part of the stopper to be forced outwardly into intimate con-



tact with the internal wall of the chamber 3, so that a perfect seal is formed.

From the foregoing description, taken in connection with the accompanying drawing, the advantages of the construction and of the method of operation will be readily appreciated by those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and that such changes may be made as are within the scope of the claims.

What is claimed is:—

1. A containing vessel having a neck the exterior walls of which are bulged laterally to produce an enlargement defining an annular interior stop shoulder disposed at substantially right angles to the longitudinal plane of the neck, the side walls of the neck at said enlargement being curved downwardly and inwardly to produce a contracted portion at the juncture of the neck with the body of the

vessel, and an expansible inverted frusto conical stopper having smooth continuous side walls curved to conform to the curvature of the interior walls of the enlargement, said stopper having one end thereof provided with a reduced portion the terminal of which extends within the contracted portion of the neck of the vessel and is spaced from the adjacent interior walls thereof, the opposite end of the stopper being formed with a cavity opening through the top of said stopper and having a plurality of spaced lugs extending vertically from the upper end thereof and disposed flush with the interior and exterior walls of the stopper at said cavity for engagement with the stop shoulder when the bottle is inverted.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

LORENZO C. FURCOLO.

Witnesses:

FRAMESIO FUNARO,  
DOMENICO MONTUORI.