

R. F. VENNER & A. W. BROWN.

ATOMIZER.

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931,240.

Patented Aug. 17, 1909.

Fig. 1.

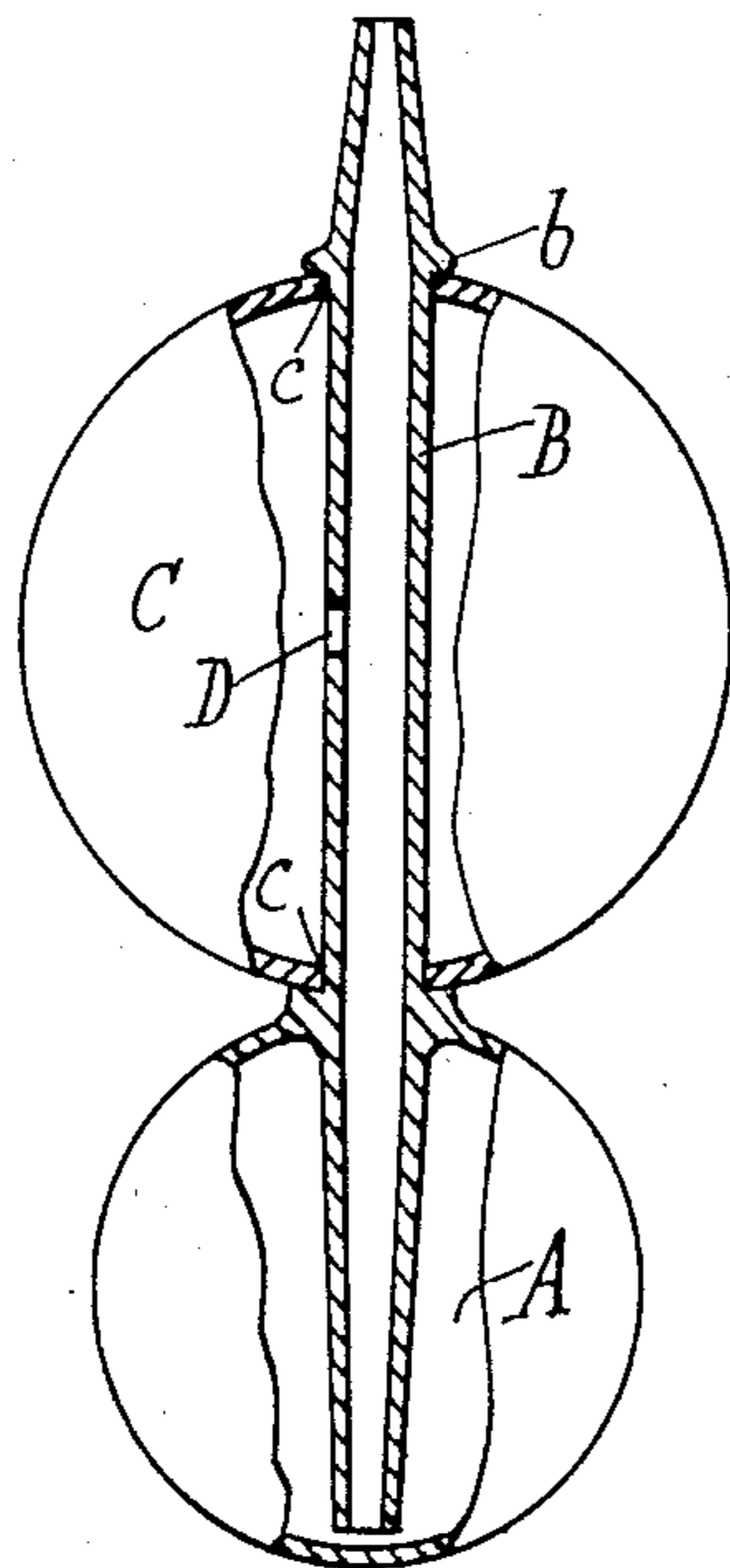
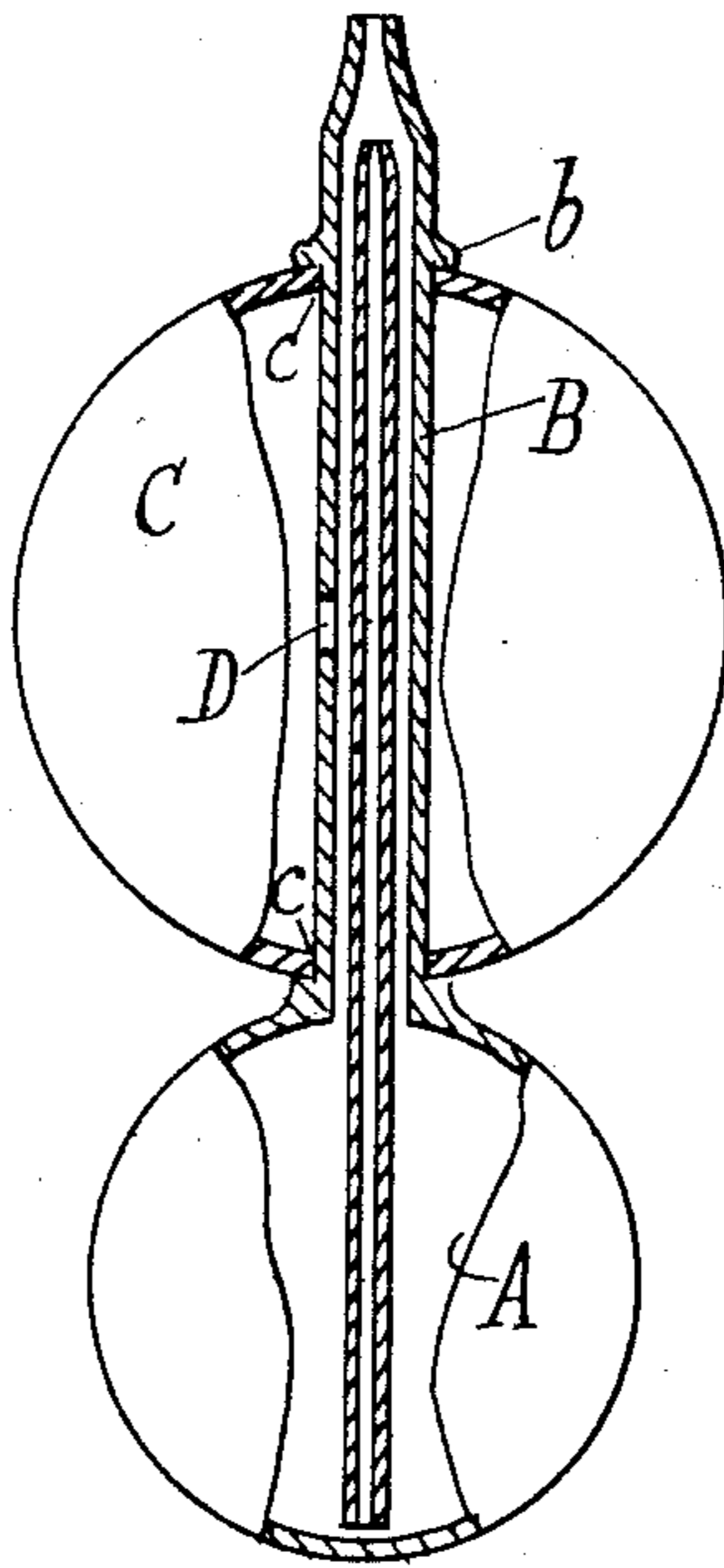


Fig. 2.



Witnesses:

W. Chaston
H. F. Littell

Inventors:

R. F. Venner,
A. W. Brown
by J. H. Schaefer

UNITED STATES PATENT OFFICE.

ROBERT FRANCIS VENNER AND ARTHUR WILLIAM BROWN, OF LONDON, ENGLAND.

ATOMIZER.

No. 931,240.

Specification of Letters Patent.

Patented Aug. 17, 1909.

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To all whom it may concern:

Be it known that we, ROBERT FRANCIS VENNER and ARTHUR WILLIAM BROWN, subjects of the King of England, and both residing at London, in the Kingdom of England, have invented new and useful Improvements in Atomizers, of which the following is a specification.

Our invention relates to spray producers or atomizers of that class in which the reservoir for the liquid is formed with a spraying tube and in which air is compressed by means of an air bulb adapted to eject the spray under pressure of the air.

It is our object to provide a simple and cheap apparatus of this kind by forming the reservoir in one with a spraying and nozzle tube and fitting such tube with a valveless spherical bulb seated direct against the reservoir arranged to force air through a suitable inlet into said reservoir while dispensing with any check valve or an internal air-hole for the bulb as well as with fittings or other connections for the spraying tube.

Our invention is embodied in the constructional forms of apparatus illustrated in the annexed drawings.

Figure 1 is a vertical section of one form; and Fig. 2 is a vertical section of a modified form of the syringe.

The reservoir A adapted to contain liquid, is made in a single piece with a projecting spraying tube B, and the latter has a collar *b* near its nozzle end. A valveless spherical bulb C, is pierced axially with two holes *c c* of about the diameter or slightly smaller than that of said spraying tube and is then placed over the latter intermediate between the collar *b* and reservoir A. The spraying tube shown in Fig. 1 has a lateral air inlet aperture D through which the air is forced into the reservoir. The spraying tube is either continued downward into the reservoir as in Fig. 1 or it has a downwardly extending liquid tube as shown in Fig. 2.

The action is as follows:—In compressing the pneumatic bulb C its lips are forced against the collar of the spray-tube B and the reservoir A, and so practically prevent the internal air escaping to the exterior, but forcing same through the air-inlet D into the reservoir containing the liquid. When releasing the bulb, atmospheric air quickly refills the ball by forcing a passage through the edges of the bulb around the spraying tube and also partly back through the nozzle. Obviously at the beginning of compressing the bulb, the internal and external air-pressure is the same and aided by the outward pressure of the lips of the ball against the collar and the reservoir respectively, sufficient tight joints are insured, while, yet, subsequently by reason of the reduced internal pressure the same joints permit the ingress of air, so that neither a manually controlled air-hole nor a non-return valve is required.

What we claim is—

1. An atomizer formed of a liquid reservoir integral with its projecting perforated spraying tube, a collar molded on said tube, a tapering nozzle extending from said collar, and a pneumatic bulb fitted on the spraying tube direct against the body of the reservoir and pressing against said collar, as and for the purpose set forth.

2. In an atomizer for spraying liquids, a reservoir, a projecting perforated spraying tube made integral therewith, a pneumatic bulb fitted on said tube direct against the body of the reservoir, and an inwardly extending liquid tube, as set forth.

ROBERT FRANCIS VENNER.
ARTHUR WILLIAM BROWN.

Witnesses:

RICHD. WESTACOTT,
F. L. RANDS.