

No. 894,337.

PATENTED JULY 28, 1908.

J. A. MORRIS.
SPIROMETER.

APPLICATION FILED SEPT. 30, 1905.

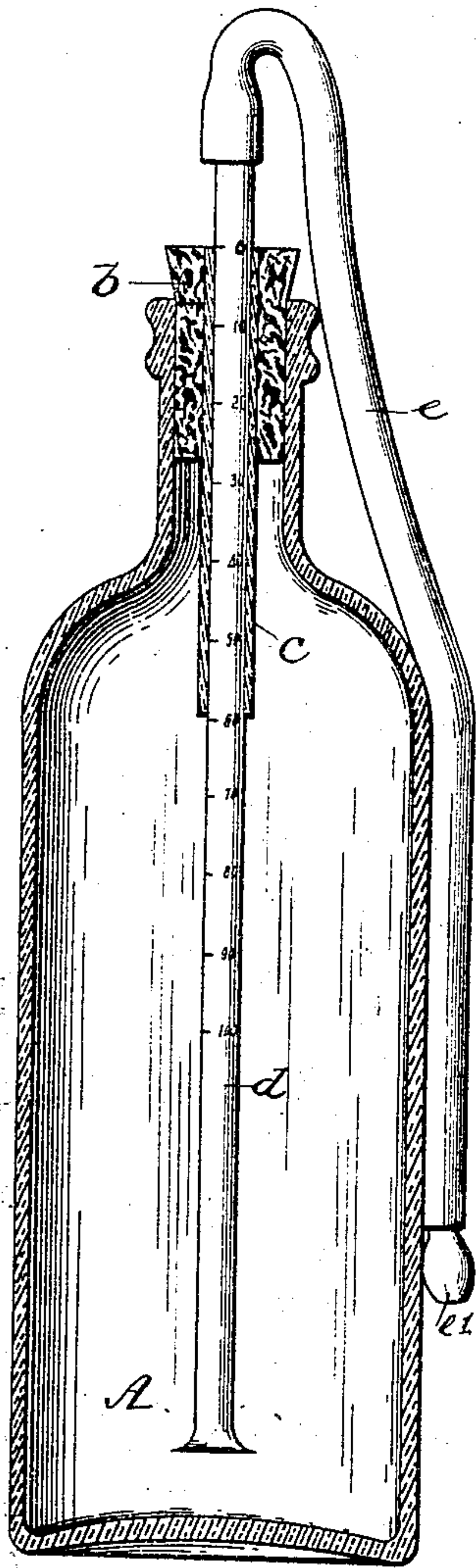


Fig. 1

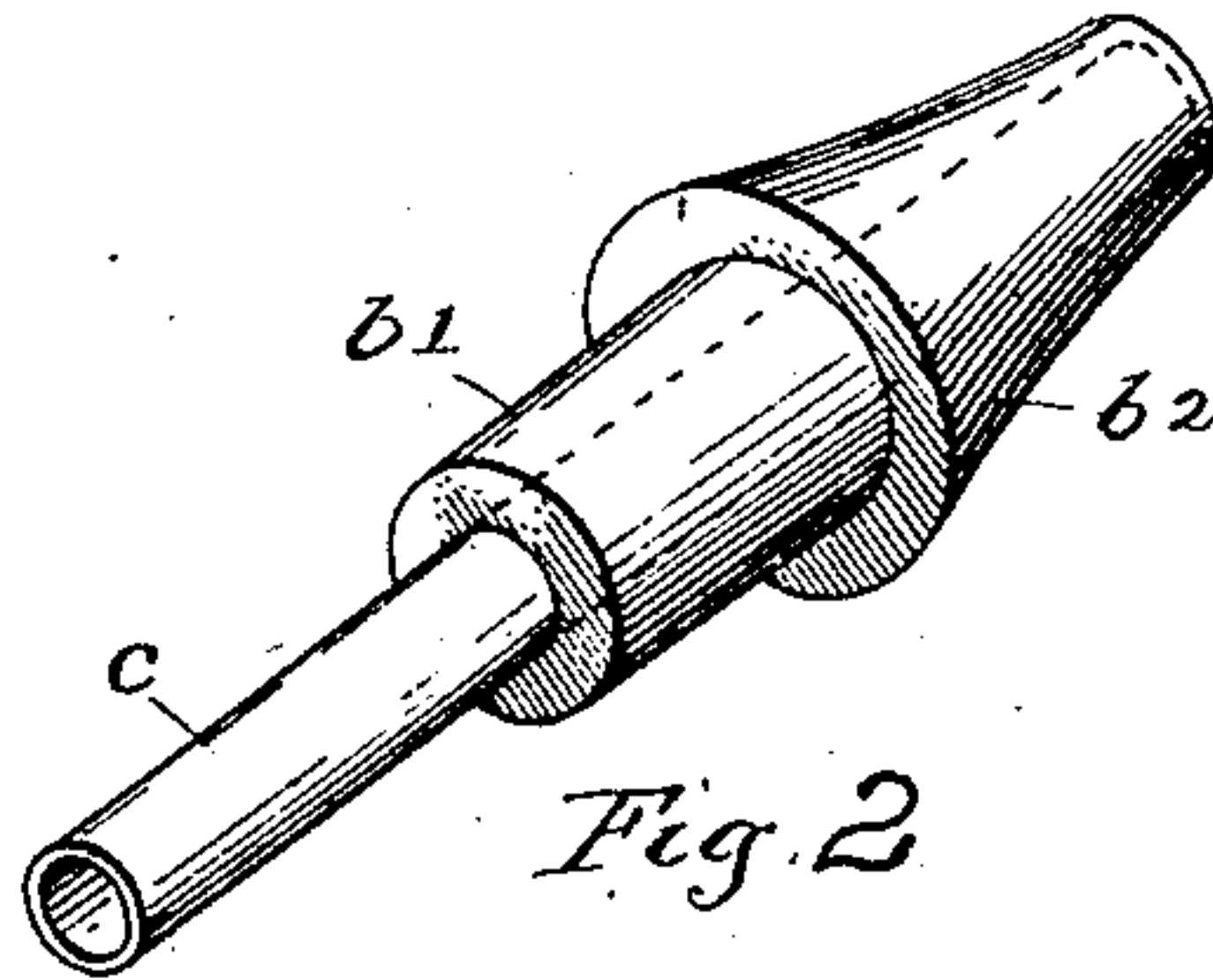


Fig. 2

Witnesses

Chas. F. Bassett

W. A. Milord

Inventor

James A. Morris.

By

Frederick Cuyam

Attorney

UNITED STATES PATENT OFFICE.

JAMES A. MORRIS, OF ATLANTA, GEORGIA.

SPIROMETER.

No. 894,337.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JAMES A. MORRIS, citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented certain new and useful Improvements in Spirometers, of which the following is a specification.

My invention relates to improvements in spirometers or devices for testing the exhal- ing ability of the users.

The improvements which form the subject matter of this application for patent are designed to provide an inexpensive device which can be placed on the market at a low cost, in which there will be nothing to get out of order or unsanitary, and one which will test the lungs and diaphragm in their exhal- ing capacity.

In the accompanying drawing which forms a part of this application I have shown a preferred adaptation of my invention and also modified forms of same embodying its essen- tial elements, in the following views:

Figure 1 is a vertical section through one form of my device; Fig. 2 is a detail of a modified form of stopper.

Referring to Fig. 1, A represents a glass bottle of ordinary form and construction, and supplied with a cork stopper *b* inserted in the neck in the usual manner. An opening ex- tends longitudinally through the stopper and through same is inserted a tube *c* which pro- jects downwardly into the body of the bottle. This tube may be made of glass, porcelain, metal, or any suitable material and serves as a bushing and support for a graduated regis- tering tube *d* which is slidably mounted in the tube *c*, and is of sufficient length to ex- tend above the stopper and nearly to the bottom of the bottle. This tube *d* is open at both ends and to its upper end is attached a section of flexible tubing *e* which has applied

to its free end a mouth piece *e*¹. The lower end of the registering tube is shown as flaring but this is not essential but merely useful as indicating which end of the tube is to be in the bottle should the parts be disassembled.

In Fig. 2 I have shown a preferred form of stopper *b*¹ in which the bushing tube *c* is ar- ranged. This stopper is not made of cork, but of rubber or wood and the cap *b*² extends over the lips of the neck of the bottle effecting a better closure. If desired, the cap may be used for advertising purposes by displaying matter on its sides, and it may be made of metal or other suitable material.

In the operation of the device shown in Fig. 1, the breath of the user will raise the graduated tube and such portion of the weight of the flexible tube as it supports the latter tube being partly supported by the hand of the user.

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

1. In a spirometer, a bottle or like con- tainer, a perforated stopper for the same, a graduated tube slidably mounted in said stopper and a flexible pipe communicating with said tube for the purpose set forth.

2. In a spirometer, a container, a perfo- rated stopper for said container, an elongated bushing arranged in said stopper and extend- ing downwardly into the container, a gradu- ated tube slidably arranged in said bushing, and means for conducting the breath of the user to said graduated tube.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES A. MORRIS.

Witnesses:

F. J. SUMMERS,
J. B. WHEAT.