

Feb. 10, 1925.

1,525,631

G. S. WHITE

BREATH DETECTOR

Filed Nov. 12, 1923

Fig. 1

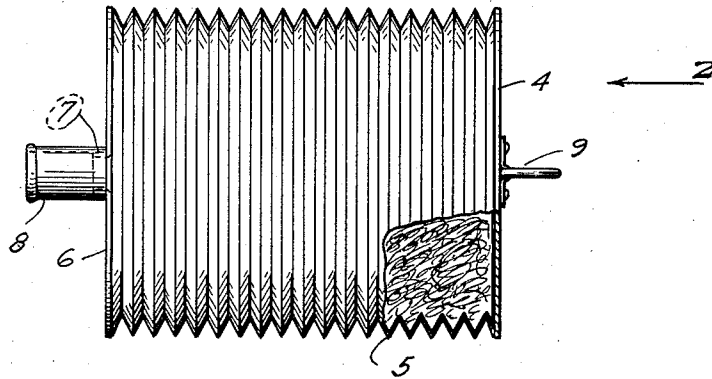


Fig. 2

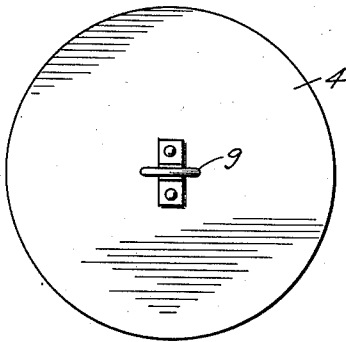
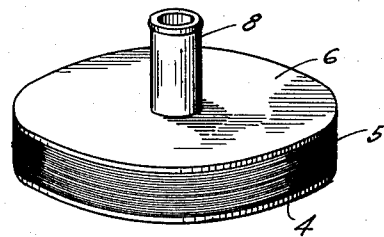


Fig. 3



INVENTOR.

George Starr White

BY *Nestall and Wallace*

ATTORNEYS

UNITED STATES PATENT OFFICE.

GEORGE STARR WHITE, OF LOS ANGELES, CALIFORNIA.

BREATH DETECTOR.

Application filed November 12, 1923. Serial No. 674,186.

To all whom it may concern:

Be it known that I, GEORGE STARR WHITE, a citizen of the United States, and resident of Los Angeles, in the county of Los Angeles, State of California, have invented new and useful Improvements in a Breath Detector, of which the following is a specification.

Bodily sensations are dependent upon the rate of change from one condition, producing the change, to another. Thus, considering the tactile sense, if the subject is touched by slowly and gradually bringing an object in contact with the subject, there is no, or only a small degree of, consciousness of the contact. However, if the object is brought to the subject so as to cause impact, the degree of consciousness is intense. Gradually changing the temperature of an object in contact with a subject does not have much of a sensory effect. A sudden change, however, has a very noticeable effect. A subject does not notice the odor of an object having a like odor to that which he has been smelling. However, a sudden change of odor is very noticeable. Thus, a subject who has been eating onions will not notice the odor of the breath of another who has also eaten onions. A subject under normal conditions does not smell his own breath. I have found upon experiment that if a subject collects his exhalations in a container and then suddenly expels them into his own face or nostrils, he will be able to smell his breath. This is due to the suddenness of the change, there being an increase in volume and impact of gas or vapor containing the odor. Upon these premises, I have constructed a device for a subject to detect the odor of his own breath.

An embodiment of my invention is illustrated in the accompanying drawing, wherein:

Fig. 1 is an elevation of a detector in expanded condition, a portion of the bellows being broken away to show the interior; Fig. 2 is an end view looking in the direction of the arrow 2 of Fig. 1; and Fig. 3 is a perspective view of the detector in collapsed condition.

Referring more particularly to the drawing, a rigid head is indicated by 4. In the form shown herein, this head is circular and may be made of metal. A suitable metal is tin, aluminum, or a tin plate. Tin and aluminum have no odor of their own nor

do they absorb other odors. Attached to the head 4 is a bellows 5 formed of some pliable material which will not retain odors or have a distinctive odor of its own such as a gelatinized paper. At the other end is a head 6 of material such as head 4 is formed of but having an opening at the center thereof conveniently formed with a nipple 7. Mounted over the nipple is a tubular mouthpiece 8 communicating with the interior of the bellows. The head 4 may be provided with a ring bail 9 for convenience in holding the detector and manipulating the same. Tube 8 should be of some material which does not have or retain odors. It may be found advantageous to partially fill the bellows with a cellulose material. The cellulose material may be cotton, cotton waste, or cotton fabric loosely placed in the bellows.

The device is operated in the following manner: It is collapsed as shown in Fig. 3. The subject then places the mouthpiece between the lips, inhales through the nose and exhales through the mouth, repeating this several times until the bellows have been expanded. The detector is thus filled with matter having the odor of the oral and nasal passages. If inhalation is through the mouth alone, only the odor of the oral passages will be detected. Thereupon, the bellows is collapsed so as to expel the gases and vapors, the mouthpiece being pointed toward the nostrils and the expulsion is effected suddenly. A subject may perfume the breath to determine whether a proper perfume for producing a desired odor is secured, and may use the detector to test the breath. In some instances it may be found desirable to have the detector impregnated with a certain odor in order to differentiate or contrast odors. Cellulose materials, if used, serve to collect the moisture of the breath in which the matter that gives the odor is suspended.

I have herein shown the chamber as collapsible, this being one form of a chamber wherein the gases or vapors taken in may be displaced. An equivalent device would be a fixed cylinder having a movable piston, or communicating chambers, air or vapors of the exhalation entering one of the chambers and displacing the air therein to the other. The expulsion being effected in the opposite directions. However, there are various equivalents of the specific form shown here-

in as will be apparent from the definition of the invention contained in the appended claims.

What I claim is:

- 5 1. A breath detector comprising a displacement chamber of expansion type having walls of material substantially non-retentive of extraneous odors, and a tubular member freely communicating therewith serving as a mouthpiece for admission of exhalation gases or vapors and a nozzle for the expulsion of said gases or vapors.
- 10 2. A breath detector comprising a displacement chamber of collapsible form having walls of material substantially non-retentive of extraneous odors, and a tubular member freely communicating therewith serving as a mouthpiece for admission of exhalation gases or vapors and a nozzle for the expulsion of said gases or vapors.
- 15 3. A breath detector comprising a displacement chamber having walls of material substantially non-retentive of extraneous odors, said displacement chamber being formed with a bellows and a tubular member freely communicating therewith serving as a mouthpiece for admission of exhalation gases or vapors and a nozzle for the expulsion of said gases or vapors.
- 20 4. A breath detector comprising a displacement chamber having walls of material substantially non-retentive of extraneous odors, cellulose material loosely placed therein, and a tubular member freely communicating therewith serving as a mouthpiece for admission of exhalation gases or vapors and a nozzle for the expulsion of said gases or vapors.

In witness that I claim the foregoing I have hereunto subscribed my name this 31st day of October, 1923.

GEORGE STARR WHITE.