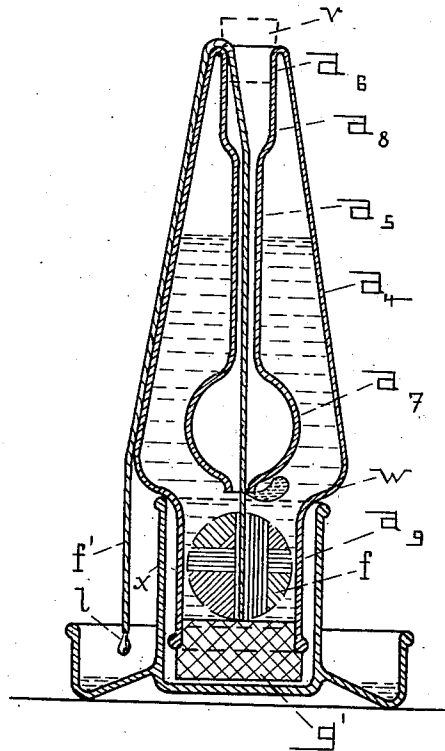


M. ARNDT.
 TESTING APPARATUS FOR AIR AND OTHER GASES.
 APPLICATION FILED OCT. 15, 1912.

1,065,652.

Patented June 24, 1913.



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UNITED STATES PATENT OFFICE.

MAX ARNDT, OF AIX-LA-CHAPÈLLE, GERMANY.

TESTING APPARATUS FOR AIR AND OTHER GASES.

1,065,652.

Specification of Letters Patent.

Patented June 24, 1913.

Original application filed September 11, 1911, Serial No. 648,634. Divided and this application filed October 15, 1912. Serial No. 725,905.

To all whom it may concern:

Be it known that I, MAX ARNDT, a subject of the German Emperor, residing at Aix-la-Chapelle, Germany, have invented certain new and useful Improvements in Testing Apparatus for Air and other Gases; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to apparatus for testing gas mixtures for the comparative content of one of the constituents, for example, for determining the content of carbonic acid gas in air, by causing the air to act on a reagent whose color changes more or less rapidly in accordance with the quantity of carbonic acid present in the air.

The present application is a division of my application Serial No. 648634, filed September 11, 1911.

The apparatus comprises a barometric vessel or Mariotte's flask for containing both the reagent and a filamentous or cord-like wick that is to absorb the reagent and act as the means for exposing small quantities of the reagent to the gas or air to be tested, so that the wick or cord will absorb the reagent directly from the flask. In such an apparatus in order to prevent reagent liquid from leaving the flask when the apparatus is taken from a cool to a warmer place thereby expanding both liquid and air above the liquid level, the air inlet tube is provided with an enlargement into which the liquid displaced by reason of such expansion will be forced.

In order that the wick may have a suitable support and yet not be free to swing to and fro, the flask is made conical, the smaller end being uppermost when in operating position.

In the accompanying drawing the Mariotte's flask or barometric vessel a^4 is conical, having a neck a^8 and a central tube a^5 extending from the smaller end of the flask, where it is enlarged, as at a^6 for the reception of a stopper v toward the neck a^8 and ending in a chamber a^7 . The stopper v is inserted during the operation to prevent the air or other gas from entering the tube a^5

and reacting on the wick and reagent in said tube. As soon as the reagent has been removed from a^5 and a^7 by capillarity of the wick, air bubbles l will ascend in a^4 to equalize the pressure.

The flask is closed at its lower end by a stopper g' in the neck a^8 and is supported neck down in the tubular central portion w of an annular vessel x . A ball f of wick f' rests on the stopper g' and the wick is drawn up through a^1 , a^3 , a^6 , and hangs over the side of the flask a^4 , the lower end depending from the larger diameter of the flask over the annular vessel x which catches the drippings from the wick f' . Air to compensate for the reagent discharged by the wick f' enters through a^6 , a^5 and a^7 , and is discharged as bubbles l from the bottom of a^7 .

The chamber a^7 serves to receive the reagent forced therein by increased pressure of the air above the level of the reagent, due to rapid temperature changes of the outside air, and prevents the level of the reagent from rising too high in a^5 .

I claim—

1. A testing apparatus comprising a conical barometric flask, a closure for the flask, a tube extending from the apex of the flask toward the closure and having an enlarged chamber at its end, and a wick extending through the tube.

2. A testing apparatus comprising a conical barometric flask having a neck at its larger lower end, a closure for the neck, a tube extending from the top to near the bottom of the flask having enlargements at both ends, a closure for the upper enlargement and a wick in said flask extending through the tube.

3. A testing apparatus comprising a conical barometric flask, a closure for the flask, a tube extending from the apex of the flask toward the closure and having an enlarged chamber at its end, a wick extending through the tube, and a holder for the flask comprising a vessel to receive the discharge from the wick.

4. A testing apparatus comprising a conical barometric flask having a neck at its larger lower end, a closure for the neck, a tube extending from the top to near the bottom of the flask having enlargements at both ends, a closure for the upper enlargement, a wick in said flask extending through

the tube, and an annular vessel having a central tubular support for the flask, said vessel of larger diameter than the flask to permit the wick to lie on the sides of the
5 flask and depend from the bottom thereof into the vessel.

In testimony that I claim the foregoing

as my invention, I have signed my name in presence of two subscribing witnesses.

MAX ARNDT.

Witnesses:

T. BECKERS,

HENRY AUSDFUG.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
