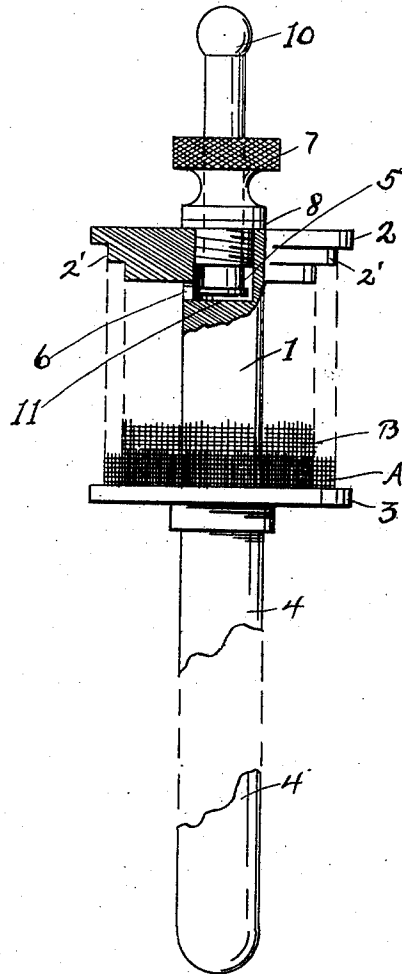


J. E. CARNEY.
GAS TESTER.
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986,685.

Patented Mar. 14, 1911.



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UNITED STATES PATENT OFFICE.

JOHN E. CARNEY, OF MONTGOMERY, ALABAMA.

GAS-TESTER.

986,685.

Specification of Letters Patent.

Patented Mar. 14, 1911.

Application filed February 3, 1910. Serial No. 541,709.

To all whom it may concern:

Be it known that I, JOHN E. CARNEY, a citizen of the United States, and a resident of the city and county of Montgomery, State of Alabama, with post-office address at 430 South Court street, in said city, have invented certain new and useful Improvements in Gas-Testers, of which the following is a specification, reference being had to the accompanying drawing.

The invention relates to that class of apparatus employed for testing gaseous mixtures, mixtures of dust and air and the like, in which a test sample, suitably protected within a safety chamber, is subjected to ignition conditions, an explosion taking place if the mixture is explosive by ignition.

The object of the present invention is to provide a thoroughly practical, simple and novel device of this character and one capable of efficient operation by comparatively unskilled hands. This object is fully attained by the apparatus to be described.

The drawing shows the invention reduced to practice, the view being a side elevation, some of the parts being shown partly broken away and some partly in section.

The explosion chamber is formed, as in similar devices for this purpose, of a spool-shaped frame or casting having an axial portion 1 and end flanges 2 and 3, the former shown as provided with terraces or steps 2' (those of the latter being hidden) upon which are held the wire gauze or perforate metal walls necessary in a test chamber of this character. The upper flange member is partly shown in section, as also a part of the axial portion 1.

A and B are parts of a two part gauze protection, the broken lines showing the position of the cylindrical gauze or perforate metal walls.

To the lower flange member is fixed a handle 4, of any desired length. Within the upper end of member 1 is a hole 5, suitably threaded to receive a plug or bushing 7 (provided with a washer or packing 8) and having sufficient head to be readily operated

by hand. At the lower end of the hole 5 there is a side outlet 6 opening into the explosion chamber, and at 11 is a shelf or anvil whereon may be placed a percussion cap, preferably one of the small paper covered articles used with toy pistols and the like, although the particular style of cap is immaterial. Sliding within the plug 7 is a rod 9, having a suitable enlargement at its upper end 10, and its lower end forming a cap exploder or hammer.

In testing for explosive dust or gas mixtures the operation is extremely simple. Plug 7 is removed and a cap inserted so as to rest at 11. The plug is then inserted and screwed home. The test chamber is then, by means of the handle, waved around a few times in the atmosphere to be tested so as to insure a fair sample being obtained within the gauze or perforate metal protecting screens, when the mixture may be ignited (if capable of ignition) by forcibly striking the rod 9 (rather, its upper end 10) against the roof or wall of the mine chamber, room, or other inclosed place where the test is being made.

As the device is primarily intended for the detection of explosive mixtures of air with mine gases, carbon monoxid, marsh gas, and the like light gases, which accumulate at or near the top of mine chambers and the like, I have provided the hammer rod 9 as shown, so that a simple thrusting upward against the roof will be sufficient to explode the sample.

The device, of course, may be variously modified without departure from its essential elements, but in the form shown is a thoroughly efficient mine gas tester. No difficulty will be experienced in differentiating between the slight explosion of the percussion cap and the entirely distinct setting off of whatever explosive mixture happens to be within the test chamber when the cap is fired.

Having described my invention, what I claim is:—

1. In apparatus of the class described, a

test chamber provided with perforate metal walls pervious to gas, an anvil within said chamber, and a hammer controllable from without said test chamber in operative relation with said anvil.

5 2. A portable tester for explosive mixtures, consisting of a gauze protected test chamber, an anvil and a firing pin within said chamber, and means operatively connected

with said firing pin and extending without said chamber. 10

Witness my hand this 19th day of January, 1910.

JOHN E. CARNEY.

In the presence of—

JAMES S. MANCILL,
LESLIE B. THOMPSON.

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