

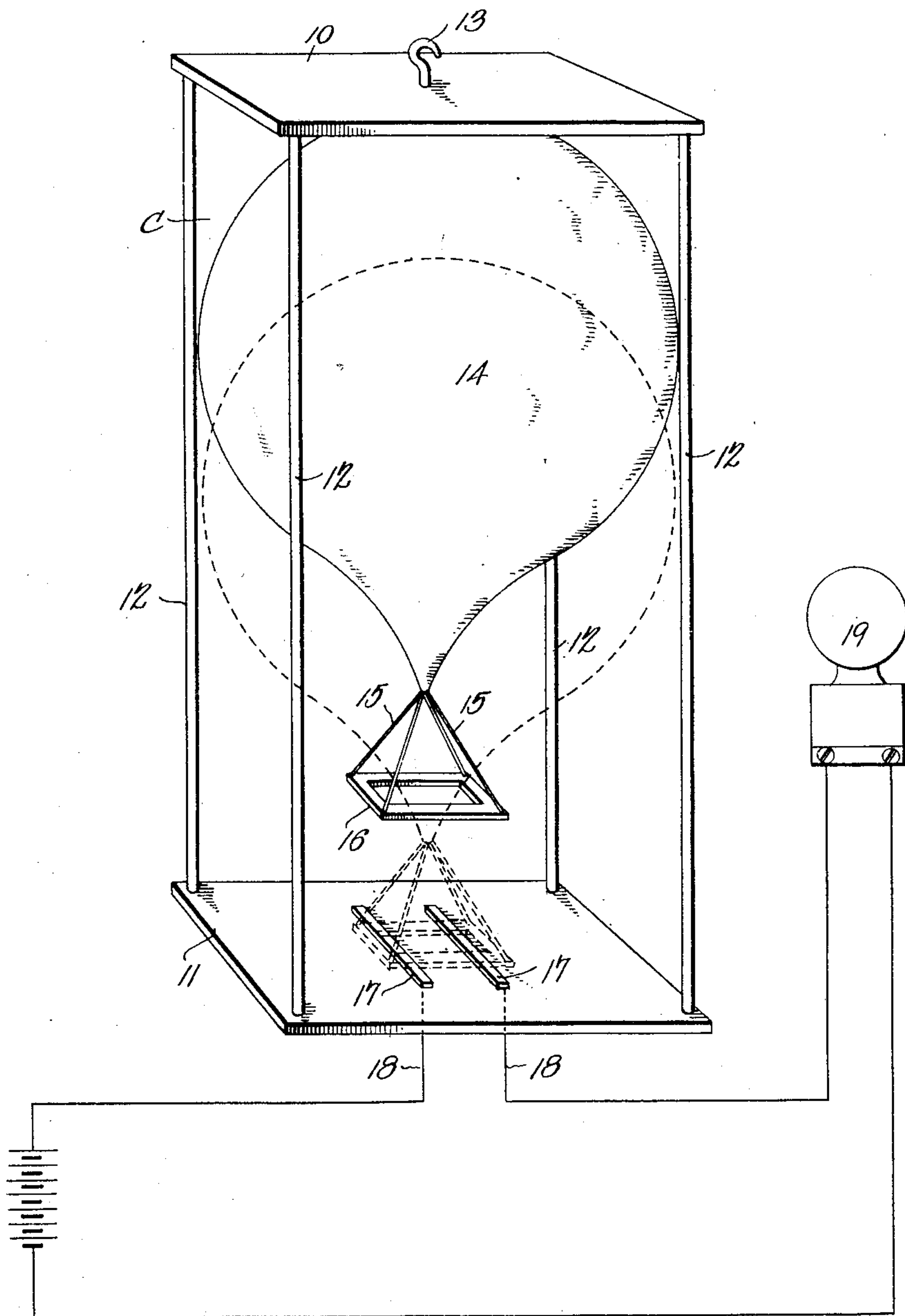
No. 754,596.

PATENTED MAR. 15, 1904.

G. A. NELSON.
GAS DETECTOR.

APPLICATION FILED FEB. 10, 1903.

NO MODEL.



Witnesses
E. H. Stewart
J. V. Jochum, Jr.

George A. Nelson, Inventor.
by *C. A. Snow & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

GEORGE ADOLPH NELSON, OF PROVIDENCE, RHODE ISLAND.

GAS-DETECTOR.

SPECIFICATION forming part of Letters Patent No. 754,596, dated March 15, 1904.

Application filed February 10, 1903. Serial No. 142,737. (No model.)

To all whom it may concern:

Be it known that I, GEORGE ADOLPH NELSON, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Gas-Detector, of which the following is a specification.

My invention relates to devices for detecting the presence of such substances as illuminating and like deleterious gases, more particularly in rooms and living apartments, and for actuating an alarm to warn the occupants or others of the presence of said gas.

The object is to provide a sensitive and certain means for effecting this purpose.

The accompanying drawing shows a perspective and diagrammatic view of one embodiment of my invention.

The character C designates a suitable cage or casing, here shown as consisting of top and bottom plates 10 11, respectively, conveniently of some such material as wood, separated the proper distance by connecting-rods 12 or the like. Upon the top plate a hook 13 may be provided for suspending the casing in its operative position. Within the casing is disposed an unconnected movable body, preferably a balloon 14, formed of some such thin light envelop as rubber lined with oiled silk, or oiled silk alone may be used, if desired, which will retain a charge of the gas the presence of which is to be detected, or some similar gaseous fluid having approximately the same specific gravity thereas, but which must be different from air. This balloon will normally assume a position at the top of the casing, as is shown in full lines in the drawing. To the lower portion of this balloon is attached, conveniently by light cords or threads 15, a metallic member or circuit-changing device 16, it in the present instance acting as a circuit-closer.

Upon the upper surface of the plate 12 are mounted two contact members 17 17, which are spaced apart and located beneath the member 16, and from these lead wires 18 18 of an electrical circuit, here shown as normally open, containing some suitable alarm device, as a bell 19, which may be placed in the room

with the detector or at some central point of a system, as in the office of a hotel.

In use my device is attached at the ceiling of an apartment, and the balloon, being filled with a gas lighter than air, will rest against the top plate of the casing. If gas enters the room through a leak in the fixtures or otherwise, it will rise to the ceiling. Now, as the balloon as a whole must be heavier than its gaseous contents, as it becomes surrounded by the gas it will gradually fall, and when a sufficient amount of said gas has entered it will assume the position indicated by dotted lines in the drawing, with the member 16 resting upon the contact members 17. This will close the electrical circuit and actuate the alarm, giving a warning of the presence of free gas in the room.

It will be seen that many changes may be made in the arrangement of the alarm-circuits and other details of construction without departing from the spirit of my invention.

Having thus described my invention, I claim—

1. The combination with an alarm, of a float maintained in suspension wholly by the atmosphere, said float being freely movable and adapted to descend upon the displacement of the atmosphere by a lighter fluid, and means controlled by the descent of the float for actuating the alarm.

2. The combination with a support, of a pair of spaced contacts carried thereby, an alarm in open circuit with the contacts, a float disposed directly above the contacts and maintained in suspension wholly by the atmosphere, said float being freely movable and adapted to descend upon the displacement of the atmosphere by a lighter fluid, means for guiding the float in its descent, and means cooperating with the contacts and controlled by the descent of the float for closing the circuit.

3. The combination with a cage comprising a base and guides sustained thereby, of a pair of spaced contacts carried by the base, an alarm in open circuit with the contacts, a float disposed between the guides directly above the contacts and maintained in suspen-

sion wholly by the atmosphere, said float being freely movable and adapted to descend upon the displacement of the atmosphere by a lighter fluid, and a member carried by the
5 float and adapted upon the descent of the latter to coöperate with the contacts for closing the circuit to actuate the alarm.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE ADOLPH NELSON.

Witnesses:

PATRICK J. McELROY. [L. S.]

ABRAHAM KOZLOW. [L. S.]