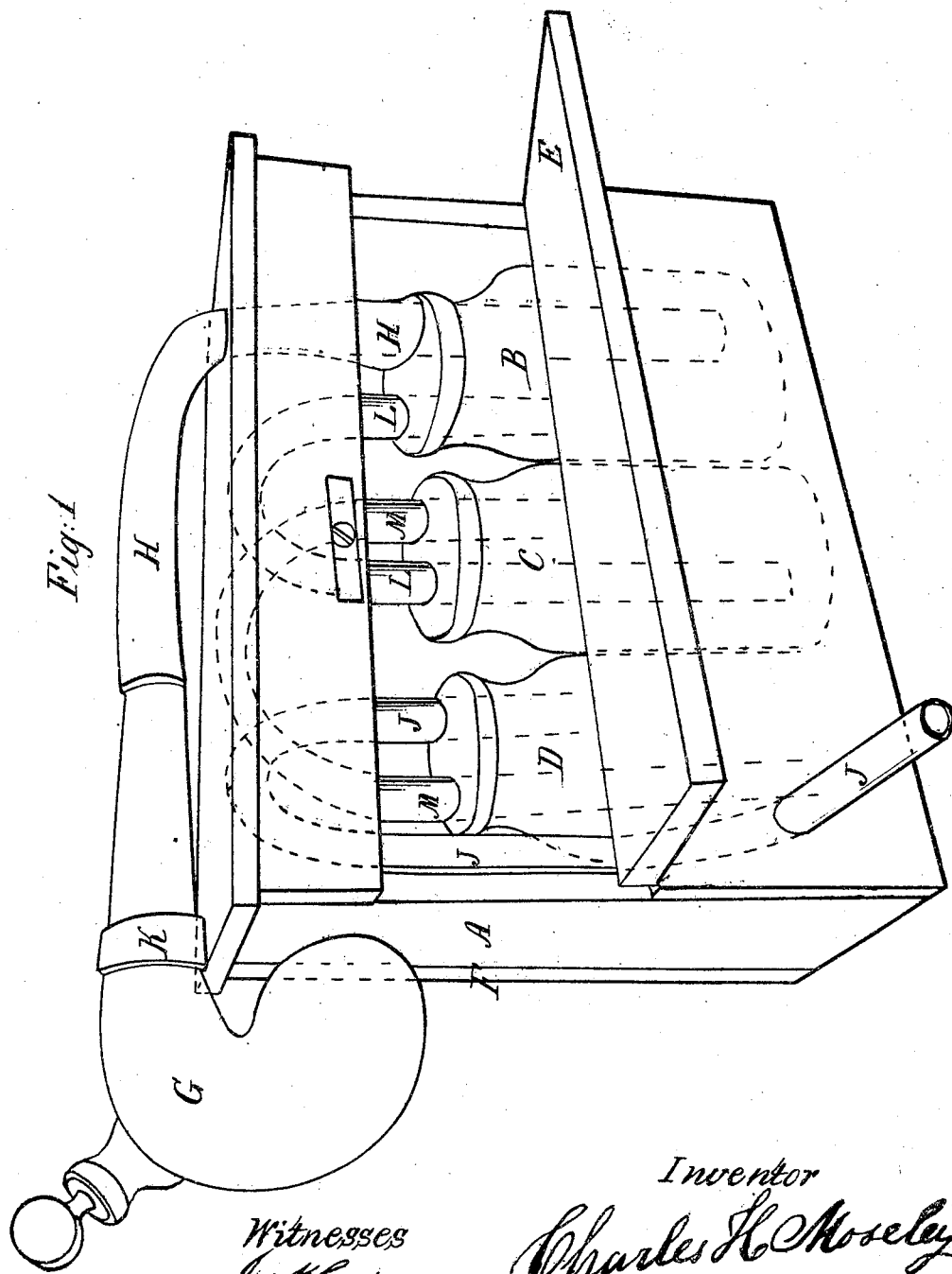


C.H. Moseley.

App<sup>s</sup>. Preparing Nitrous Oxide Gas.

No 54,389.

Patented May 1866.



Witnesses  
Jas Henderson  
Charles L. Hamill

Inventor  
Charles H. Moseley

# UNITED STATES PATENT OFFICE.

CHARLES H. MOSELEY, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN APPARATUS FOR PREPARING NITROUS-OXIDE GAS.

Specification forming part of Letters Patent No. 54,389, dated May 1, 1866.

*To all whom it may concern:*

Be it known that I, CHARLES H. MOSELEY, of Brooklyn, Kings county, State of New York, have invented certain new and useful Improvements in Portable Apparatus for Preparing Nitrous-Oxide Gas; and I do hereby declare that the following is a full description of the same.

Since the discovery of the anæsthetic properties of nitrous-oxide gas and its application to dental purposes it has been a source of great inconvenience to the dental profession, as well as a great expense to them, to prepare the gas in such quantities as to have it always on hand to administer to patients as they came into the office. By the ordinary method of preparing it a large gasometer and other apparatus was required, which necessitated the making of a large quantity of the gas at a time, and if not immediately used was in a short time so deteriorated in quality as to be worthless or lost by leakage, and thereby entail a serious loss on the operator.

The object of my invention is to obviate these objections, and at the same time so cheapen and simplify the apparatus for preparing the gas as to enable the dentist to prepare the gas at a few minutes' notice, and in such quantities only as can be used up at a sitting of the patient, and consequently always fresh and of the requisite quality to produce the happiest results; and the nature of my invention consists, first, in the construction of a portable box in which are arranged three or more jars (on the principle of Wolfe's apparatus) charged with purifying-agents, for the purpose of purifying the nitrous-oxide gas after being generated in the retort, and before being collected in the bag from which it is given to the patient; second, in the method of suspending the retort by a flexible india-rubber tube from the top of the box and protecting the beak of the retort from fracture by means of a collar of elastic india-rubber tubing at the point where it rests upon the edge of the box, so as to interpose an elastic non-conducting substance between the heated glass and wood, and thereby prevent the tendency of the beak of the retort to break off at that point, as would be the case if resting directly on the edge of the box; but to describe my invention more particularly, I will refer to the accompanying drawings, forming a part of this specification, the same letters of

reference, whenever they occur, referring to like parts.

Figure 1 is a perspective view of the apparatus.

Letter A is a wooden box, made of suitable size to hold three or more jars, B, C, and D, in an upright position in it, and having at each side doors E and F, for the purpose of inspecting and arranging the jars. These jars are connected together by means of bent tubing, on the principle of Wolfe's apparatus, and with the retort G by means of a flexible india-rubber tube, H, passing up through an opening in the top of the box, and with the receiving-bag (not shown in the drawing) by means of the flexible india-rubber tube J, passing out through a hole in the side of the box. The object of the flexible tube H is to permit the retort to hang loosely over the end of the box, and thus dispense with the use of a stand while the heat is being applied to it to generate the gas.

To prevent the weight of the retort and the expanding and contracting forces of the heat from breaking off the beak of the retort when it rests in contact with the edge of the box, a collar, K, of india-rubber, is secured on the beak. By this means a perfect protection against breakage is insured with anything like reasonable usage.

The operation of the apparatus is first to prepare the purifying-agents. In the jar B is put a saturated solution protosulphate of iron, so as to fill the jar about two-thirds full. In the jar C about the same quantity of a saturated solution of potash, and in the jar D about the same quantity of pure water. I next make the proper connections by the tubes, as before described, and then put about one-fourth pound of fused nitrate of ammonia in the retort, and by means of any jet of flame decompose it to obtain the gas. As the gas first escapes from the retort it passes into the jar B, containing the solution of iron; thence through the tube L into the jar C, containing the solution of potash; thence through the tube M into the jar D, containing the pure water, and thence by the tube J to the receiving gas-bag, the operation giving a product of about six gallons of nitrous-oxide gas. As this operation can be performed in about fifteen minutes, and the arrangement of the apparatus adapts it for use in almost any situation, and may be

carried about with the greatest safety, its utility and importance to the dental profession must be apparent, and at the same time confer a great benefit upon the public by placing within the reach of every dentist and surgeon in the country a portable apparatus ready for use at a few minutes' notice to alleviate the afflicted by administering an anæsthetic agent.

Having now described my invention, I will proceed to set forth what I claim and desire to secure by Letters Patent—

1. The combination of the portable box A with a set of nitrous-oxide-gas-purifier jars, arranged and operating as hereinbefore set forth.

2. In combination with the beak of the generating-retort, an elastic india-rubber or other non-conducting collar, K, for the purposes hereinbefore set forth.

3. The method of suspending the retort by means of an elastic tube attached to the end of the beak of the retort, whereby I am enabled to dispense with the use of a retort-stand, as hereinbefore set forth

CHARLES H. MOSELEY.

Witnesses:

JAS. HENDERSON,  
CHARLES L. BARRITT.