No. 765,547. PATENTED JULY 19, 1904.

F. T. BRENNER.

APPARATUS FOR HEATING AIR.

APPLICATION FILED AUG. 8, 1903. RENEWED MAY 31, 1904.

NO MODEL.

Fig. 1.

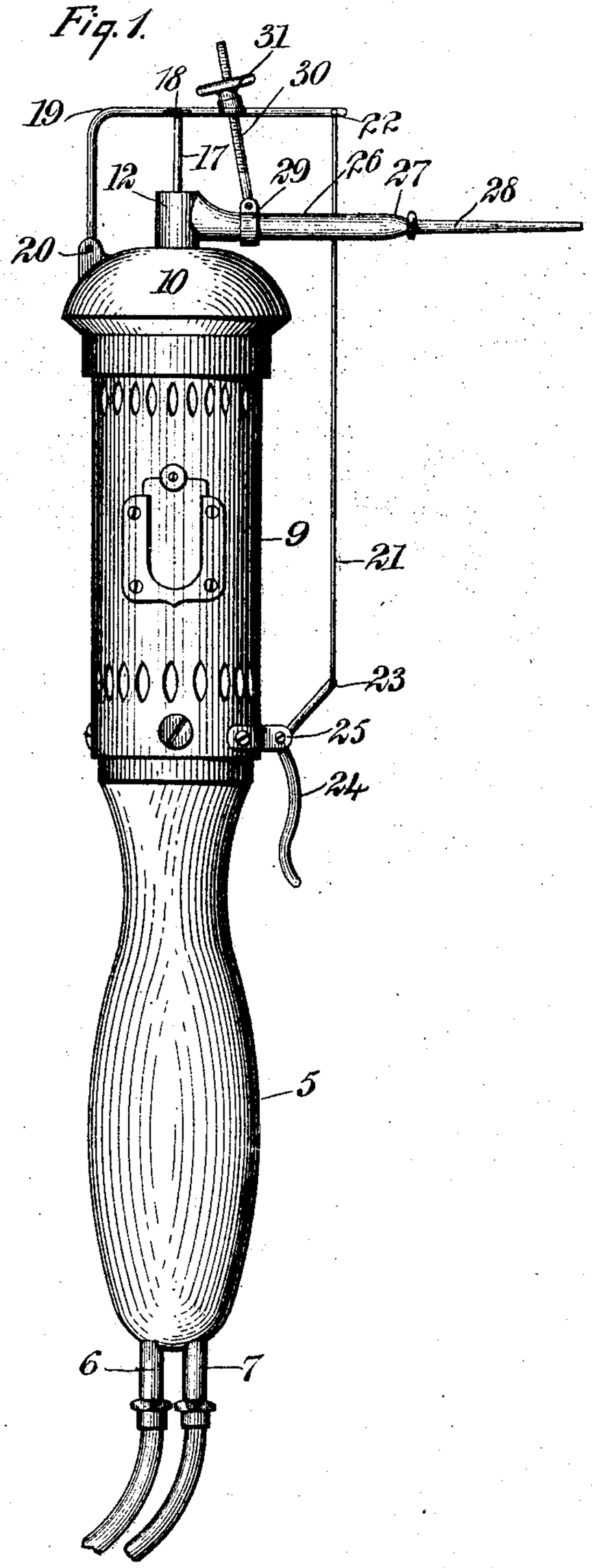
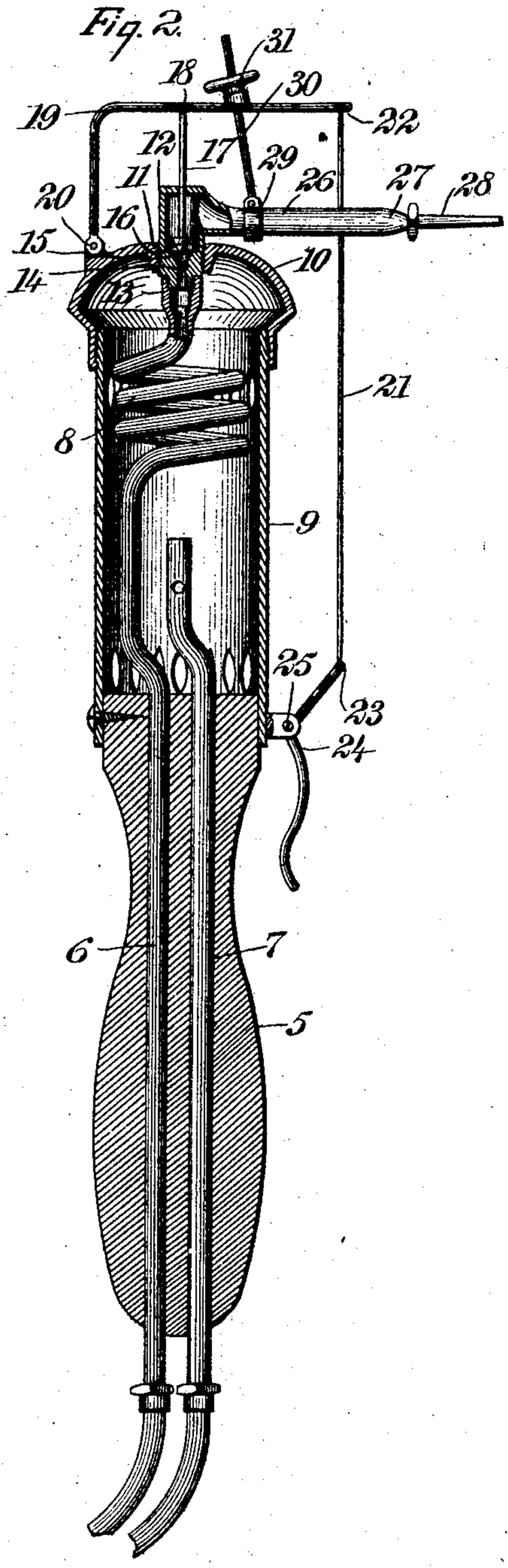


Fig. 2.



WITNESSES:

Wm. C. McKenzie.

R. B. Cavanagh.

INVENTOR

Franklin T. Brenner

BY

Munn

ATTORNEYS

No. 765,547. Patented July 19, 1904.

UNITED STATES PATENT OFFICE.

FRANKLIN T. BRENNER, OF QUINCY, ILLINOIS.

APPARATUS FOR HEATING AIR.

SPECIFICATION forming part of Letters Patent No. 765,547, dated July 19, 1904.

Application filed August 8, 1903. Renewed May 31, 1904. Serial No. 210,408. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN T. BRENNER, a citizen of the United States, and a resident of Quincy, in the county of Adams and State of Illinois, have invented new and useful Improvements in Apparatus for Heating Air, of which the following is a full, clear, and exact description.

My invention relates to certain novel and useful improvements in means for heating air, and has particular application to an apparatus of the type referred to designed to be especially employed in heating air to be conducted to the ear.

One of the principal objects of the present invention is to provide an apparatus through the medium of which air may be readily, easily, and quickly heated and conducted in puffs or jets to the middle ear for the treatment of the auricular nerves.

A further object of my invention is to provide an apparatus which may be conveniently manipulated, one which occupies but comparatively little space, and which may be manufactured at but little expense.

With the above-recited objects in view my invention consists in the construction, combination, and arrangement of parts, as is described in this specification, delineated in the accompanying drawings, and set forth in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the figures.

Figure 1 is a view in side elevation of a heating apparatus embodying my improvements, and Fig. 2 is a central vertical sectional view of the same.

Referring now to the accompanying drawings in detail, 5 designates the main body portion of the apparatus, which is preferably in the form of a handle, so that the apparatus may be easily and quickly manipulated. The handle portion 5 is provided with a plurality of longitudinally-extending bores through which pass the tubes 6 and 7, said tube 6 being preferably formed of copper and is adapted at its lower end to be connected with a compressed-air tank, (not shown,) while the upper end 8 of said tube is formed in a spiral coil. The tube 7, which is adapted to be connected with a source of gas-supply, is provided at its free end with an orifice, said tube 7 being to all intents and purposes a Bunsen burner. Surrounding the burner portion of the tube 7 and the coiled part 8 of the air-tube is a metallic cylinder or casing 9, said casing being secured to the handle portion 5 of the device and is provided at its upper end with a cap or cover 10, adapted to be threaded or screwed upon the end of said casing. This covering 10 is formed centrally with an opening or aperture having its walls 11 threaded, said aperture being adapted to permit the passage of a portion of the cap 12, which is designed to be threaded into the end 13 of the coil 8, said end being slightly flared to receive the reduced portion of the cap. Extending through said cap is a vertical bore or passage 14, widened at 15 at its upper end, this widened portion 15 forming a seat for the valve 16, the stem 17 of said valve passing through the top of the cap 12 and is connected at 18 with the angular arm 19, pivoted, as at 20, to the cover 10.

In order to manipulate the valve—that is, to move it back and forth on its seat—I have provided a rod 21, secured at 22 to the angular arm 19, the opposite or lower end of the rod 21 being connected at 23 to an elbow-lever 24, pivoted at 25 to the handle or body portion of the apparatus, the construction being such that when the elbow-lever is moved upon its pivot the valve will be opened or closed, as desired. Extending laterally from the cap 12 and communicating therewith is a short tubular section 26, having its end portion 27 slightly tapered, this tubular section 26 being designed to have attached thereto a removable tip 28, which tip may be inserted in the ear when it is desired to apply the heated air to the latter; but, if desired, this tip may be removed and the tapered end or shoulder of the member 26 may be fitted in the mouth of the ordinary Eustachian catheter. In order to control the passage of the air through the valve from the air-tube to the tubular section 26, I have secured to said section 26, through the medium of a collar 29, a

screw-rod 30, which latter is adapted to have threaded thereon a thumb-nut 31, designed to bear upon the angular arm 19, so that the valve can be set to allow the air to pass through in a constant stream or in any quantity and speed desired.

From the above description, taken in connection with the accompanying drawings, the construction and operation of my apparatus will be readily apparent, and the numerous advantages thereof will also be appreciated. The instrument may be made comparatively small, so that it can be easily held in the hand of the operator or by a patient, and every slight movement made by the patient may be easily followed. The laterally-projecting tubular section 26 is comparatively short, and there is incident no loss of heat, as is commonly the case when long tubes are employed. By the elbow-lever or finger-grip 24 the valve can be operated and the air may be forced in puffs or jets through the tube with full pressure from the air-tank, or by regulating the thumb-nut the valve may be set to allow the air to pass through in one constant stream. The valve, it will also be noted, does away entirely with the whistling commonly experienced in devices of this sort and obviates the disagreeable sounds heard by the patient when the instrument is in the ear.

There are many other advantages incident to my improved apparatus; but they will be readily apparent to those familiar with devices of this type, and detailed enumeration of the same is unnecessary.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. An apparatus of the class described, comprising a body portion, a casing on the body portion, an air-tube, and a gas-tube passing longitudinally through the body portion into the casing, the air-tube having a coil formed therein at a point above the burner end of the gas-tube, and conducting means for leading off air heated in the coil by the burner of the gas-tube, substantially as set forth.

2. An apparatus of the class described, comprising a body portion, a casing on the body portion, an air-tube and a gas-tube passing longitudinally through the body portion into the casing, said air-tube having a coil formed therein at a point directly above the burner end of the gas-tube, a conducting-tube communicating with the air-tube for leading off air heated in the coil of the air-tube by the burner, and a valve for controlling the passage of air from the air-tube, substantially as set forth.

3. The combination of a casing, air-conducting means arranged therein, means for heating the air within the air-conducting means, a valve for controlling the passage of air from the conducting means, and means, including a pivoted lever and connecting-rod, for operating said valve to cause the air to pass from the conducting means in jets, substantially as set forth.

4. The combination with a casing, of air-conducting means arranged therein, a burner for heating the air within the conducting means, a valve-seat formed at the outlet termination of the air-conducting means, a valve for controlling the air passing through the conducting means, a lever connected with said valve for operating the same, and adjustable means for limiting the movement of the air-valve away from its seat, substantially as set forth.

5. The combination of a body portion, a casing carried thereby, an air-tube, and a gas-tube passing through said body portion into the casing, a burner formed at the end of the gas-tube, a cap portion connected with the air-tube, a valve arranged within the cap portion for controlling the flow of air from the air-tube, and a tubular duct-section leading off from said cap, substantially as set forth.

6. The combination of a handle, a casing secured thereto, an air-tube passing through said handle and formed with a coil in the casing, means for heating the air passing through the tube, and means for controlling the passage of the heated air from the tube, said means including an angular arm, a valve-stem secured to said arm, a valve at the end of said stem and designed to seat in a cavity in the path of the air passing from the tube, a rod connected to said angular arm, and a lever for moving said rod, the construction being such that the valve will be moved to and from its seat, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANKLIN T. BRENNER.

Witnesses:
B. C. PIPINO,
C. H. SPENCER.