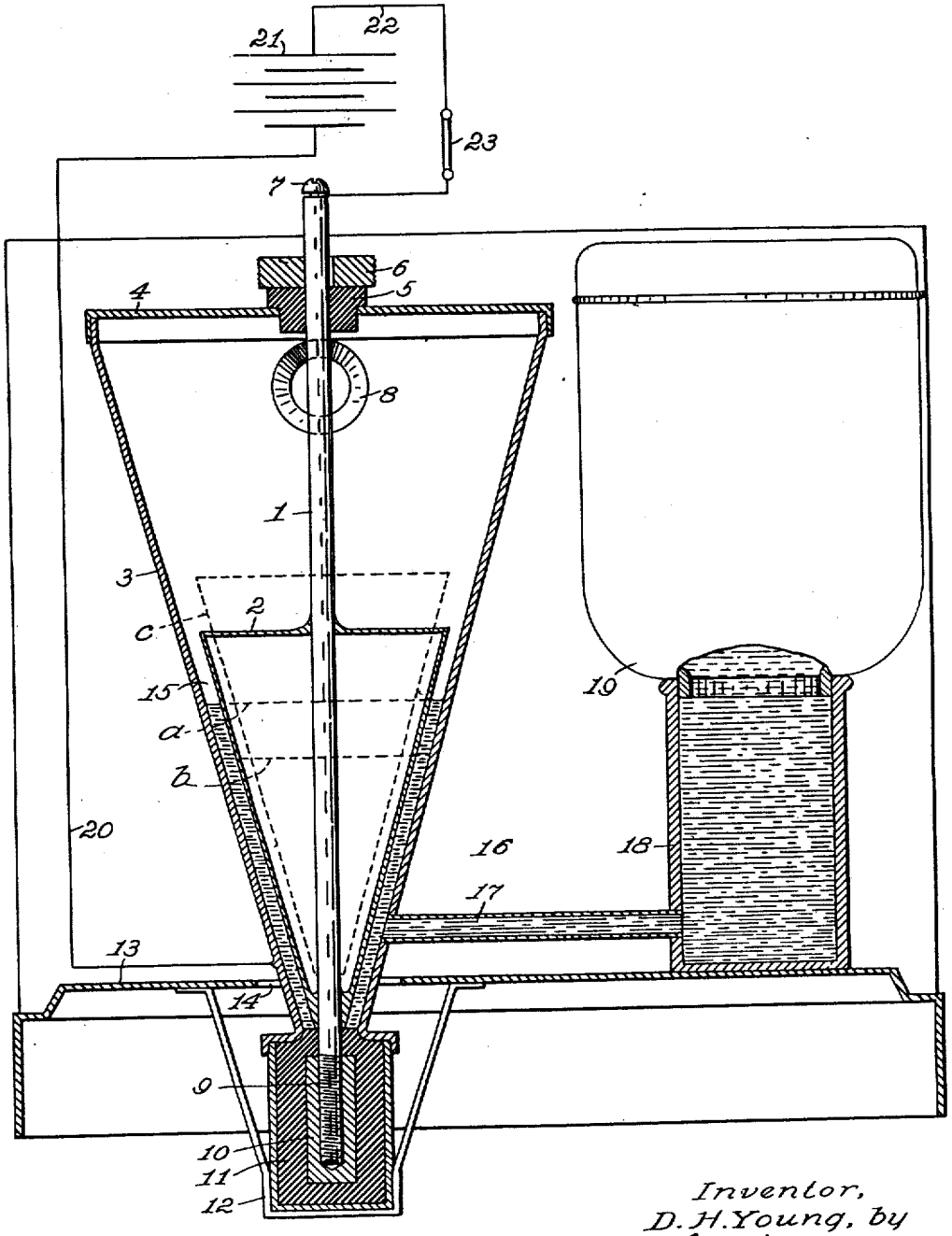
D. H. YOUNG.

HUMIDIFIER.

APPLICATION FILED FEB. 10, 1919.

1,356,846. **Patented Oct. 26, 1920.**



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UNITED STATES PATENT OFFICE.

DANIEL H. YOUNG, OF MANCHESTER, IOWA.

HUMIDIFIER.

1,356,846. Specification of Letters Patent. Patented Oct. 26, 1920.

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To all whom it may concern:

Be it known that I, DANIEL H. YOUNG, a citizen of the United States of America, and a resident of Manchester, Delaware county, Iowa, have invented certain new and useful Improvements in Humidifiers, of which the following is a specification.

My invention relates to improvements in humidifiers, and the object of my improvement is to supply in humidifiers which comprise a boiler with included electrical heating means for its contents, a special type of boiler and electrical heating means therein wherein the heating means is susceptible to adjustment and is adapted to coact with the boiler in such a manner as to conduce to greater efficiency of said heating means under desired conditions.

This object I have accomplished by the means which are hereinafter described and claimed, and which are illustrated in the accompanying drawing, which is a front elevation of my improved humidifier, with parts thereof and of its supporting means in vertical longitudinal medial section.

The said supporting means may be of any desired pattern, but, as shown comprises a hollow base 13 connected to or bracketed from a back-plate 16. The base has in its top an opening 14.

The numeral 3 denotes a boiler which is supplied with water automatically, that is by an air-pressure device in a well-known way. This device consists of a reservoir, having a single receiving and delivery neck, the reservoir 19 being inverted after filling with its neck inserted into the top of an open vessel 18 to fit same and deliver its contents thereinto as determined by air-pressure. A conduit 17 affords communication between said vessel 18 and the lower part of the boiler 3.

The boiler 3 is of an inverted cone shape with top closure 4 centrally orificed to receive an insulating sleeve 5, the latter also centrally orificed to receive a vertical stem 1 or conductor member on whose lower part is fixed a hollow electrode also in the form of an inverted cone positioned within said boiler concentrically. The angle of inclination of the electrode 2 may be the same or different than the angle of inclination of the said conical boiler without departing from my invention. The cone 2 is seated in the lower part of the boiler in spaced relation thereto.

A rectangular loop-shaped hanger 12 is fixed under the opening 14 in said base 13, and in this hanger is removably positioned and supported a casing containing a socketed mass of insulating substance 11. In this socket is fitted a sleeve 10 interiorly threaded to receive the foot or lower extremity 9 of said conducting stem 1, said foot 9 being exteriorly threaded to be adjustable relative to the fixed sleeve 10. The lower end of the boiler 3 is supported on said insulation and casing in such wise that the stem 1 remains insulated from the boiler.

The upper end of said stem 1 projects upwardly from the insulating sleeve 5, and on this projecting end is fixed a knurled disk 6 for use in turning the stem. On the upper tip of said stem may be adjustably mounted a binding-screw 7 for the end of an electrical conductor 22 leading to one pole of a battery or other terminal of a generator of electric current 21, said conductor containing a switch 23. The other terminal of said source of current 21 is connected with the conducting shell of said boiler 3 by means of the conductor 20. In the upper part of the conical boiler 3 is a delivery port for steam delivering into a funnel 8.

The full lines show the position of the conical electrode 2 when in its lowermost position in said boiler, at which time the water level in the boiler in the interspace of the boiler and electrode is located as indicated by the dotted line *a*. This is the usual position of the electrode when the humidifier is in active operation. It is desirable, however, to lower the water resistance at the initiation of the operation, to prevent blowing out a fuse. I effect this desired result by turning the stem to adjustingly move it upwardly to an approximate position in the boiler indicated by the dotted line *c*. This results in widening the interspace 15 of the electrode and boiler, and lowers the level of the water in the boiler to the level indicated by the dotted line *b*. It will be seen that now a much diminished surface of the electrode is immersed in the water, though the interspace 15 is not much widened, and if the circuit is now closed, there is a reduction of resistance. The electrode may then be returned to its first position, without blowing out of a fuse, where its more largely immersed surface acts on the thinner stratum of water to quickly bring the water to the

boiling point, the circuit being completed through the water from the electrode to the boiler shell. Generated steam is permitted exit by way of the funnel 8 to be disseminated throughout a room or other inclosure, to properly humidify the air therein.

The conical electrode 2 has the further advantage of permitting adjustment relative to the boiler and the water therein, so that the heating of the water may be graduated as desired by mere adjustment in position of the electrode. Hence the water may be heated as desired to furnish steam as rendered necessary by the conditions of its use. While I have shown an electrode of conical shape in coaction with a conical boiler, I wish it to be clearly understood that my invention comprises variations in the shapes of either or both which will insure the above desired results in practice.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is:

1. A nested pair of spaced inverted conical electrically conducting terminal parts, the inner part being a closed hollow body, the outer part being of greater altitude than the inner part and closed at the top, the inner part being vertically adjustable within said outer part, and the outer part having an exit-port at the top for vapor generated therein.

2. A nested pair of spaced inverted conical electrical conducting terminal parts, the inner part being of less altitude than the outer part and vertically adjustable to vary the width of their interspace, said outer part being closed and having an exit-port in its upper end, the larger upper end of the outer part serving as a container for vapor generated from a liquid in the interspace of said parts when the latter are in closed circuit with a source of electric current.

Signed at Manchester, Iowa, this 24th day of Jan. 1919.

DANIEL H. YOUNG.