

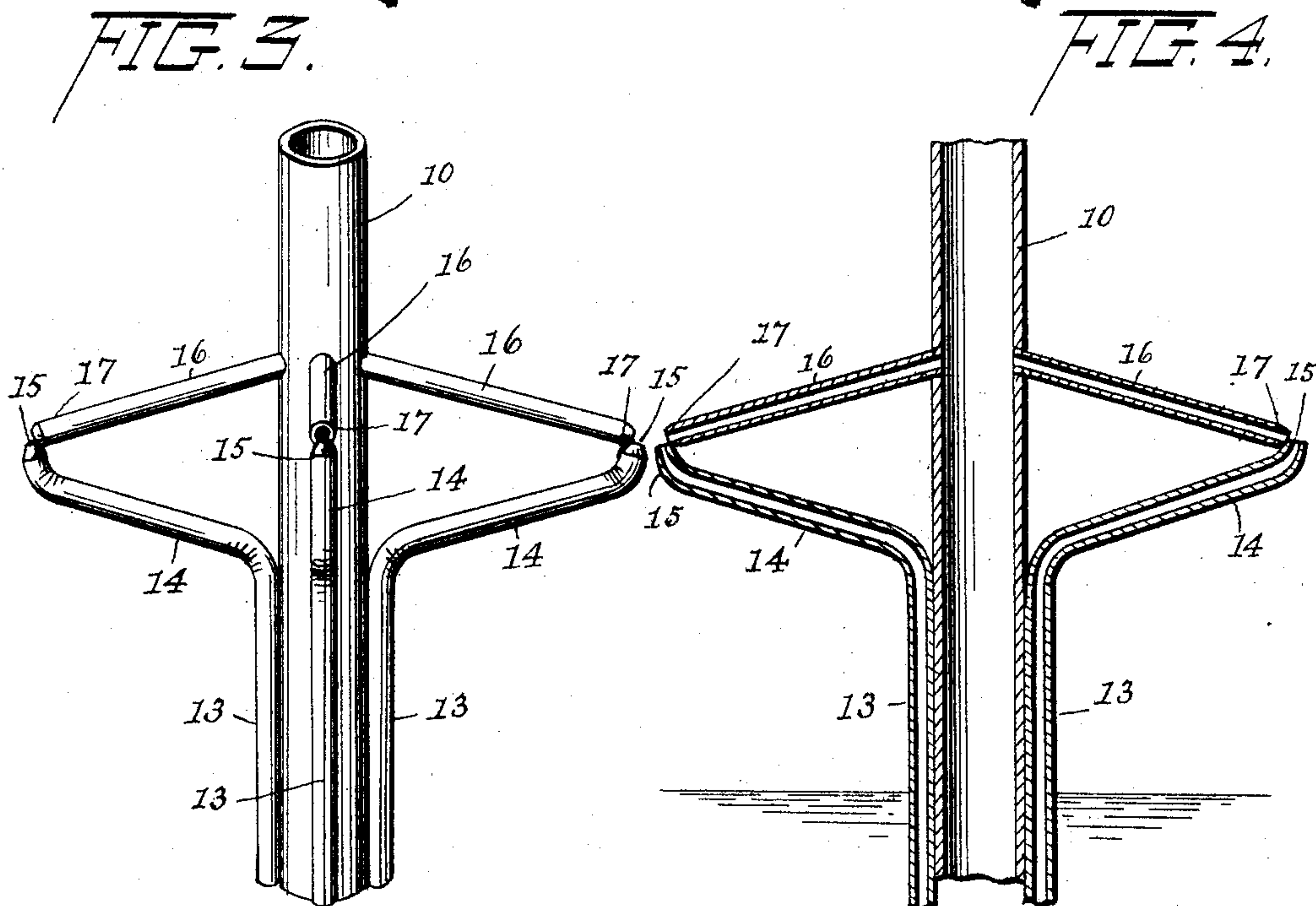
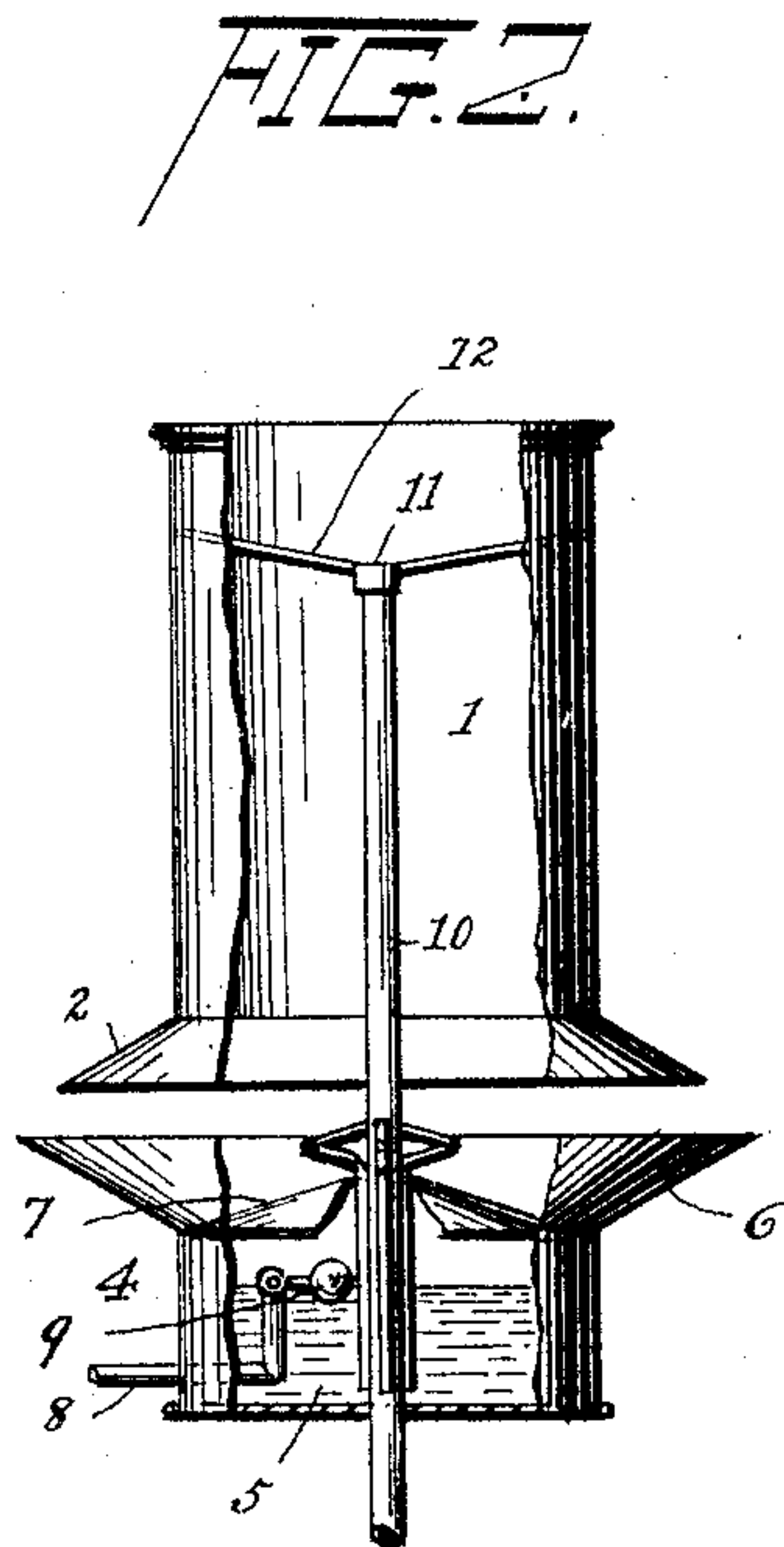
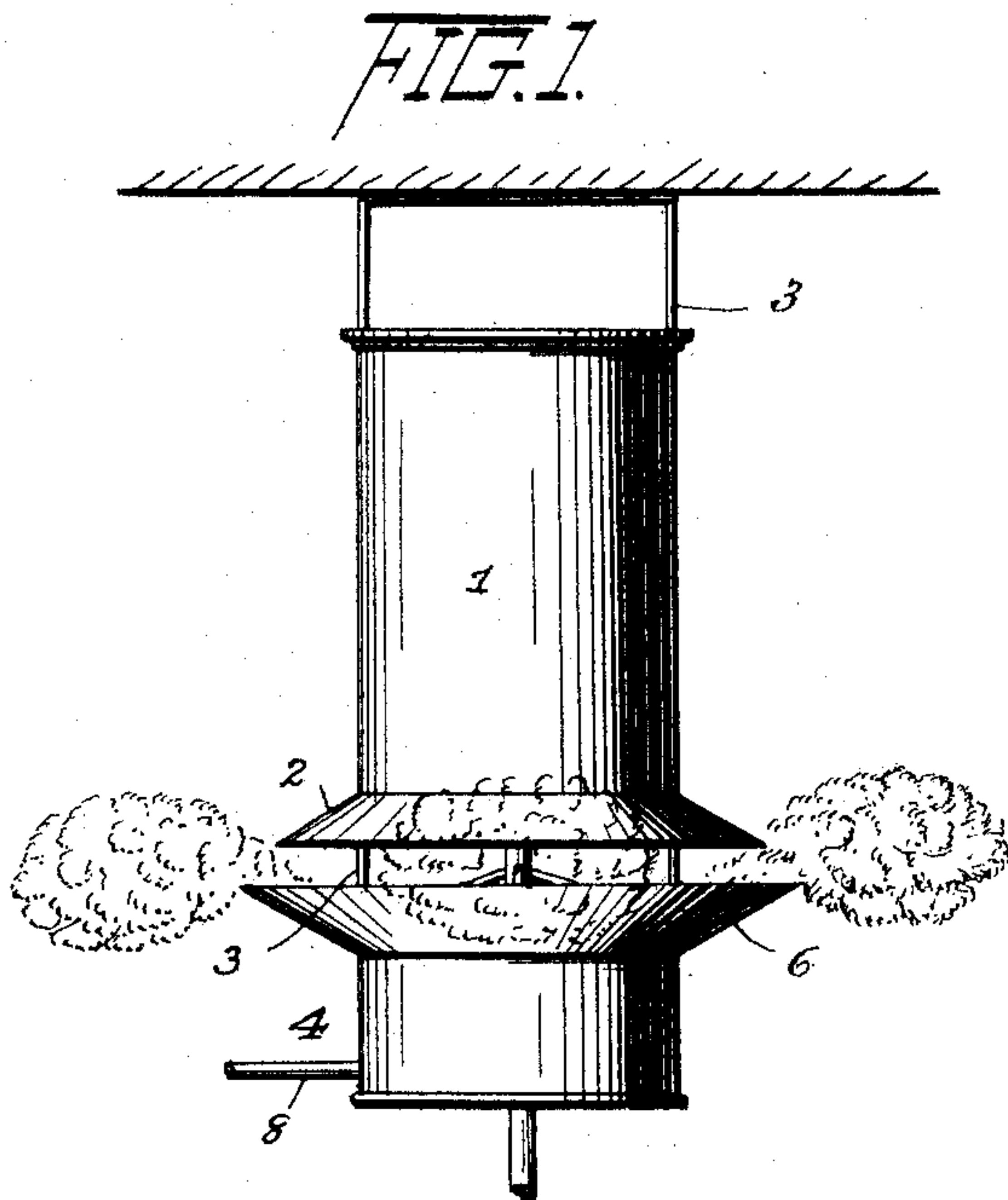
No. 632,185.

Patented Aug. 29, 1899.

A. L. JONES.
HUMIDIFIER.

(Application filed Aug. 23, 1898.)

(No Model.)



WITNESSES

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UNITED STATES PATENT OFFICE.

ARTHUR L. JONES, OF MONTGOMERY, ALABAMA.

HUMIDIFIER.

SPECIFICATION forming part of Letters Patent No. 632,185, dated August 29, 1899.

Application filed August 23, 1898. Serial No. 689,334. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR L. JONES, a citizen of the United States, residing at Montgomery, in the county of Montgomery and State of Alabama, have invented certain new and useful Improvements in Humidifiers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to humidifiers or air-moistening apparatus for general use, but particularly in textile manufactories; and it consists, primarily, of a cylinder suspended from a suitable support having a lower body inclosing a water-tank and an air-pipe with feeding branches extending therefrom in radial lines and coacting with water-feeding pipes to produce a spray which is driven outwardly into the surrounding air from a point between the cylinder and body, the air being under pressure and the water-tank automatically and continuously replenished during the time the devices are permitted to operate.

The invention further consists of the details of construction and arrangement of the several parts, which will be hereinafter more fully described and claimed.

The object of the invention is to humidify an apartment by thoroughly permeating the atmosphere thereof with moisture, and particularly in textile manufactories, for the purpose of carrying off the electricity with which the fibers of the yarn become charged from friction of belts, &c., to moisten textile fabrics and provide for easy manipulation of the same and which in a dry atmosphere become harsh and brittle and offer a materially-increased resistance to the various processes of manufacture, to cool and purify the atmosphere of a factory-room where light particles or lint are liable to remain suspended or float to the detriment of the workmen and injury to the machinery, and to increase the specific gravity of such particles or lint sufficiently to cause a precipitation thereof and a consequent purification of the atmosphere.

In the accompanying drawings, Figure 1 is an elevation of a humidifier embodying the invention. Fig. 2 is a similar view broken away to show the construction. Fig. 3 is an elevation, on an enlarged scale, of the air and

water pipes and their arrangement for spraying. Fig. 4 is a section of the parts shown by Fig. 3.

Referring to the drawings, wherein similar numerals are utilized to indicate corresponding parts in the several views, the numeral 1 designates a cylinder open at top and bottom and having a lower flared flange 2. Secured to the said cylinder is a strap metal or analogous frame 3, which is projected above the top and attachable to a ceiling or other support by means of suitable fastening devices. The frame 3 extends through and below the flange 2 of the cylinder and is connected to a lower body 4, confining therein a water-tank 5. The bottom of the body 4 is necessarily closed, and the upper portion is provided with a flaring flange 6 of greater diameter than and reversely arranged to the adjacent flange 2 of the cylinder. A suitable space is left between the edges of the two flanges to form a free exit for the spray, and over the water-tank within said body and below the flange 6 a conical cover 7 is secured to prevent the deposit of lint or other particles in the water.

A feed-water pipe 8 runs into one side of the body and the water-tank 5 and connects with a valve of preferred form controlled by a float 9 to cause the said tank to always be supplied with water or to replenish it after a certain quantity has been drawn therefrom. Extending centrally upward through the body and tank and the cover 7 and also upward into the cylinder 1 a considerable distance is an air-pipe 10, having an upper closed end 11, to which braces 12 are secured and to adjacent parts of the said cylinder. Air is forced into this pipe continuously from an air-pump during the operation of the device under a pressure of from twenty-five to fifty pounds. When it is desired to have the operation of spraying cease, the air is shut off by any suitable means or the air-pump can be stopped. The feed-water pipe 8 and air-pipe 10 are intended to be fixed to the ceiling, wall, or other support in a convenient manner and avoid interfering projection thereof and an unsightly appearance.

The air-pipe might be reversed and extend downwardly through the cylinder into the body instead of upwardly through said body,

as set forth, which would be an obvious change within the confines of the invention.

Rising parallel with and surrounding the air-pipe 10 are a plurality of water-delivery
5 pipes 13, which have their lower ends submerged and near the bottom of the water-tank. Just above the conical cover 7 these pipes 13 are gradually bent and extended upward in oblique angles in the form of feed
10 branches 14 and terminate in upturned contracted nozzles 15. From the air-pipes 10 above the branches 14 a similar number of small air-feeding pipes 16 extend downwardly at oblique angles and terminate in contracted
15 nozzles 17, which stand in line with and touch the upturned nozzles 15 of the branches 14, and the air is forced directly across said nozzles 15. This exhausts the air and sets up a suction in the branches 14 and pipes 13, and
20 the water is thereby drawn upwardly from the tank 5 and comminuted and thrown out in the form of spray or fine mist with a force proportionate to the pressure in the air-pipe 10. This operation also causes a circulation
25 of air through the cylinder 1 with material advantage, and the flange 6 projects outwardly far enough to catch all the heavier particles of moisture which fall and cause such collected moisture to flow back into the
30 tank, as the conical cover is of such dimension relatively to the body 4 as to permit this and yet serve to prevent the lint or particles in the surrounding atmosphere from falling into the tank.

The ends of the spraying devices, including the water delivery and air pipes, are about in line with the upper edge of the lower flange 6, so that the water of condensation may be more quickly taken up by said flange and the
40 spray be more nearly directed in a substantially straight line through the space between both flanges. The upper flange 2 in its reverse position to the flange 6 prevents the spray from being thrown upwardly, and the
45 greater diametrical extent of said flange 6 also facilitates the collection of the water of condensation.

The clouds of spray or mist given off are quickly absorbed by the atmosphere or air,
50 and the particles or lint becoming saturated and too heavy to remain in suspension fall to the floor or elsewhere with beneficial results.

The number of the pipes 13 and 16 may be

increased or diminished and the general proportions of the entire device may be varied
55 at will. Also more than one of the devices may be mounted in a single apartment and all be supplied with air and water from the same line of feeding-pipes.

Having thus described the invention, what
60 is claimed as new is—

1. In a humidifier of the character set forth, the combination of a cylinder having a downwardly-flaring surrounding flange, a lower body adjacent said cylinder having an auto-
65 matically-fed water-tank therein and an upwardly-flaring surrounding flange spaced apart from the flange on the cylinder and of greater diameter than said latter flange, a conical cover in the body above the water-tank
70 and of slightly-less base diameter than the said body to provide a space for the return to the tank of the water of condensation, water-pipes having outlet ends located immediately above the said cover, and air-pipes having
75 free ends meeting the outlet ends of said water-pipes to create a suction in the latter and force the water out between the flanges of the cylinder and body.

2. In a humidifier of the character set forth, 80 the combination of a cylinder open at top and bottom and having a lower flaring flange, a body suspended from said cylinder and confining a water-tank therein and also provided with an upper flaring flange of greater diam- 85 eter than and spaced apart from the flange on the cylinder, a conical cover in the body above the water-tank, a feed-water pipe entering the tank and having an automatic valve, an air-pipe passing up through the body,
90 cover and a portion of the cylinder, and having a closed upper end, water-delivery pipes surrounding the air-pipe and having their lower ends projected into the tank and their upper portions above the cover formed with
95 branches terminating in nozzles, and air-feeding pipes extending downwardly from the air-pipe and having nozzles touching and coacting with the nozzles of the said delivery-pipes.

In testimony whereof I affix my signature in presence of two witnesses.

ARTHUR L. JONES.

Witnesses:

F. C. WATTS,
J. T. JONES.