

No. 840,917.

PATENTED JAN. 8, 1907.

S. W. CRAMER.  
HUMIDIFIER.

APPLICATION FILED MAR. 14, 1906.

2 SHEETS—SHEET 1.

Fig. 2.

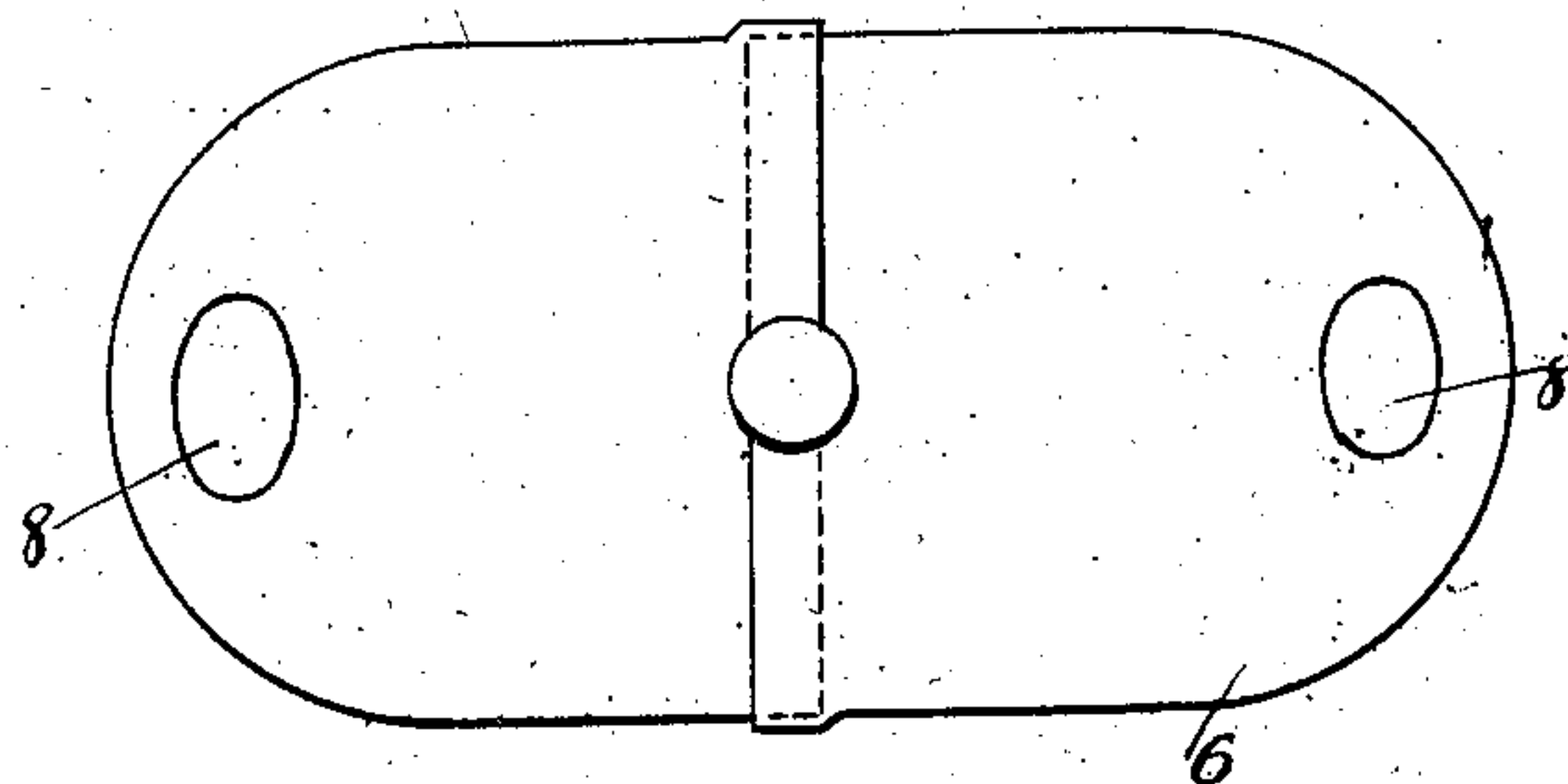
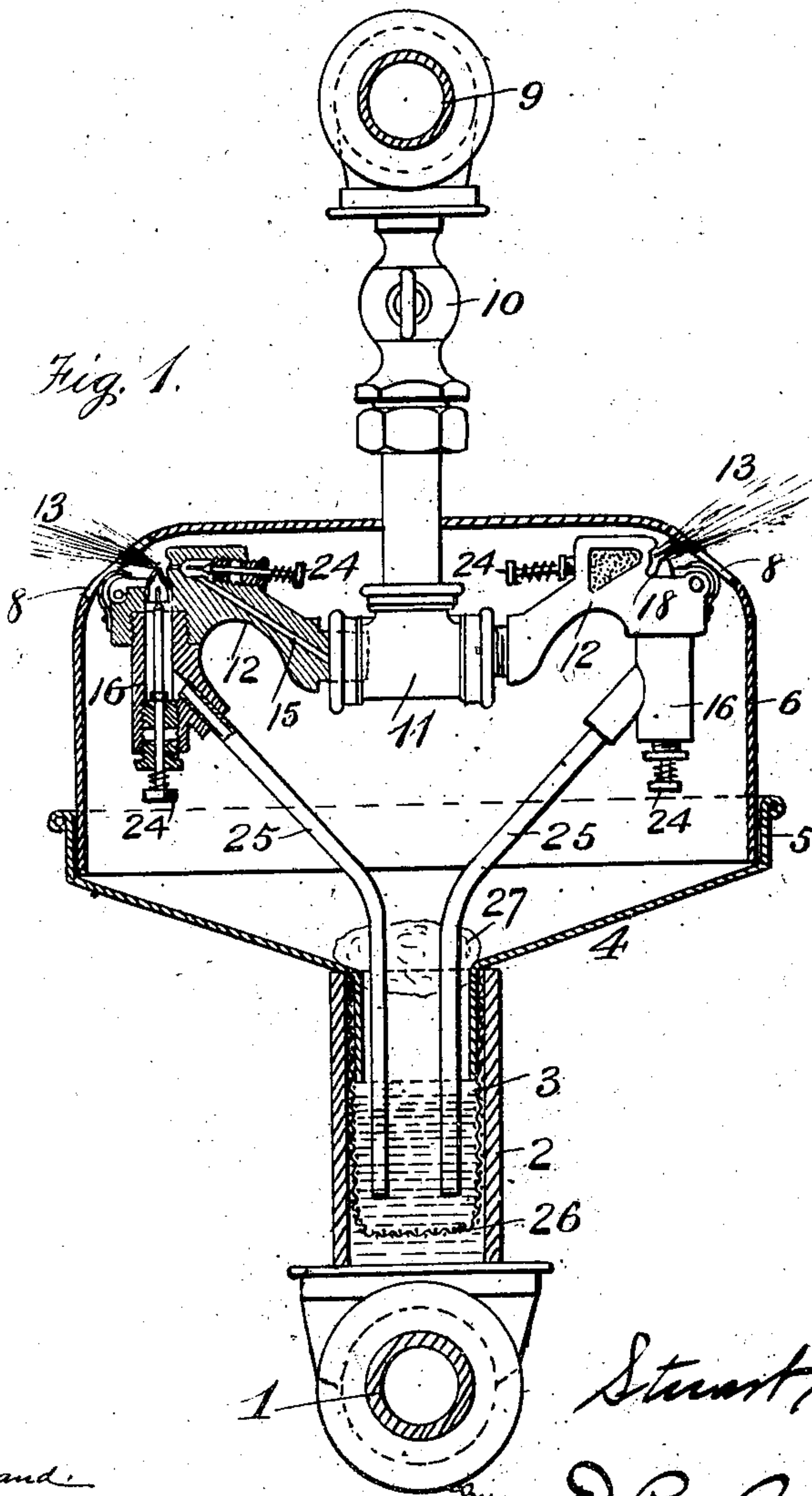


Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 3.

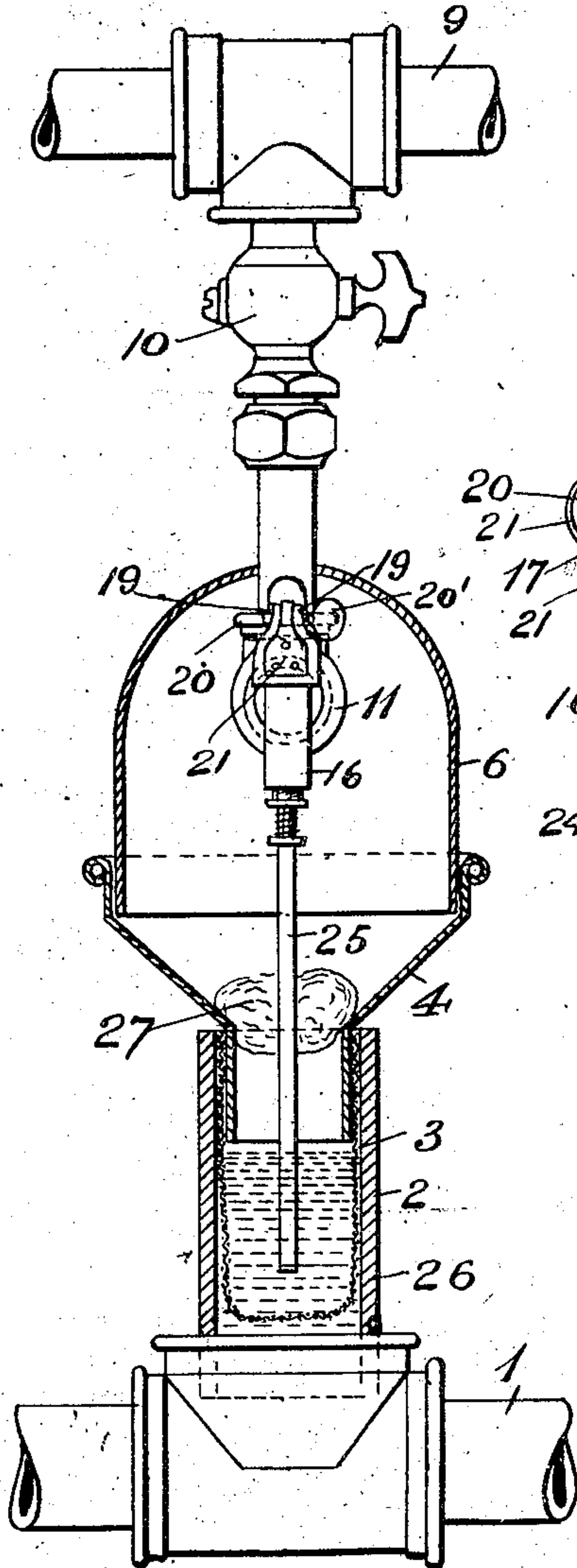
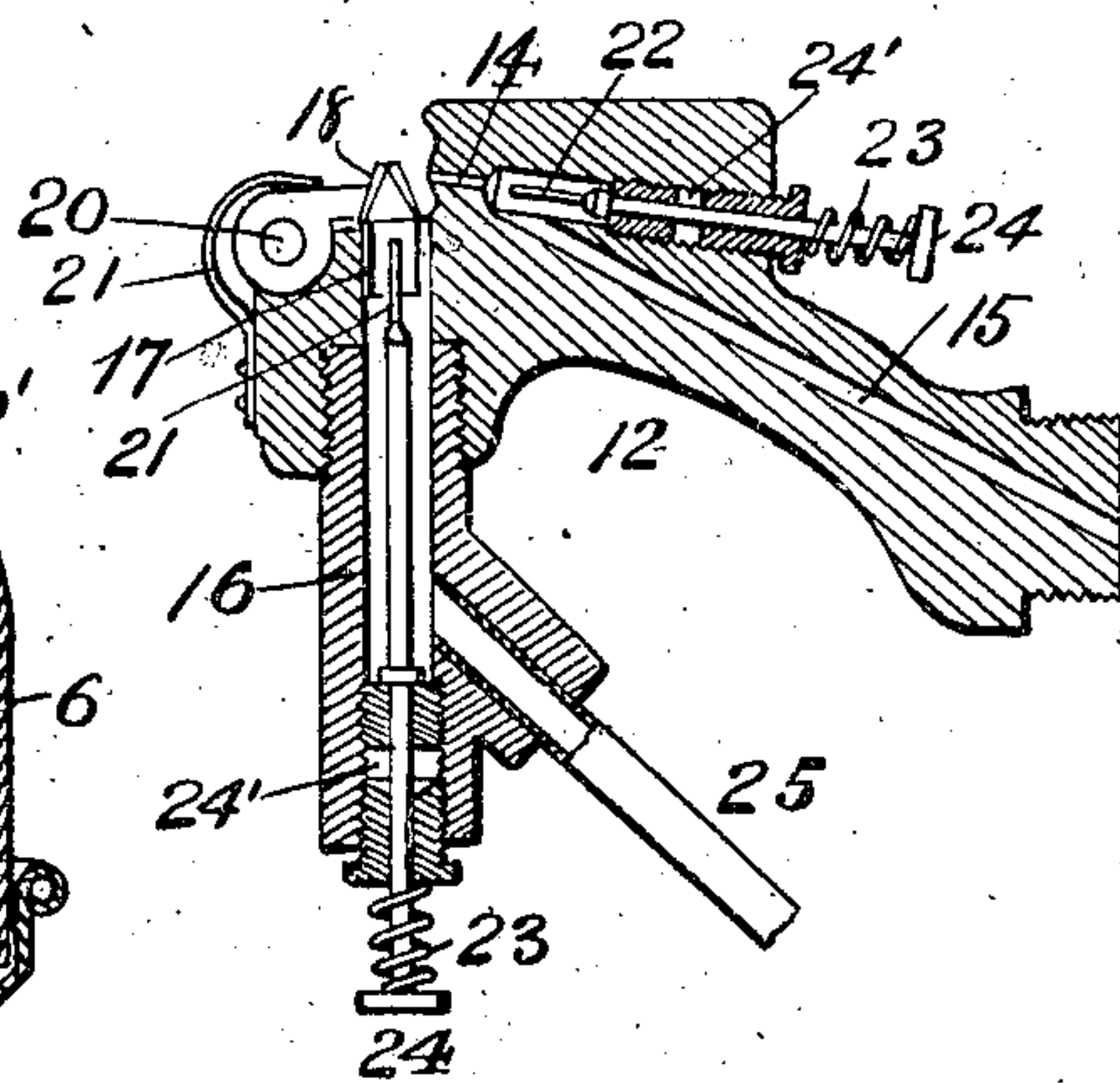


Fig. 4.



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# UNITED STATES PATENT OFFICE.

STUART W. CRAMER, OF CHARLOTTE, NORTH CAROLINA.

## HUMIDIFIER.

No. 840,917.

Specification of Letters Patent.

Patented Jan. 8, 1907.

Application filed March 14, 1906. Serial No. 306,018.

*To all whom it may concern:*

Be it known that I, STUART WARREN CRAMER, a citizen of the United States, residing at Charlotte, in the county of Mecklenburg and State of North Carolina, have invented certain new and useful Improvements in Humidifiers and Air-Moistening Apparatus; 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.

My invention relates to humidifiers of the atomizer type for moistening the air in a factory or room, has for its object an apparatus which shall maintain any preferred amount or degree of moisture in the air and diffuse such moisture throughout the compartment, and at the same time incidentally therewith cool or warm the air in the room as circumstances may require. It is my purpose to provide means for cleaning the water-leg of atomizer-heads of this type and to mount them in a new and novel manner, whereby not only is any drip from the heads returned to the apparatus and not allowed to fall on the mill or factory floor, and to inclose the operative parts with a practically tight casing, thereby keeping the same clean and free from lint and other objectionable "fly" in the atmosphere, which getting into the water-supply would tend to clog the same.

The invention consists in certain improvements in construction, which will be fully disclosed in the following specification and claims.

In the accompanying drawings, which form part of this specification, Figure 1 represents a vertical section, partly in elevation, of a humidifier embodying my invention; Fig. 2, a plan view of the cover or hood detached; Fig. 3, a vertical section, partly in elevation, of the humidifier, taken at a right angle to Fig. 1; and Fig. 4, an enlarged vertical longitudinal section of the atomizer-head.

Reference being had to the drawings and the designating characters thereon, the numeral 1 indicates a water service-pipe; 2, a water-reservoir in which a constant level 3 is maintained by a float feed-tank of the usual type, (not shown;) 4, a funnel-shaped drip-pan provided with a rim 5, around the upper end, and the pan is extended downward into the reservoir 2 and is supported thereby.

6 indicates a casing or cover fitting within the rim 5 of the drip-pan and is surrounded and closed thereby at its lower end. The cover, for the sake of convenience, may be made in two parts, separated either longitudinally or transversely to afford ready access to the operating parts within the casing.

8 8 are orifices in the casing opposite the atomizer-heads and through which spray is discharged from the atomizer-heads.

9 is an air service-pipe connected to an air-receiver or an air-compressor. (Not shown.)

10 indicates an air stop-cock for regulating the supply of air to the atomizer-heads.

11 is a T by which a pair of atomizer-heads are connected to the main service-pipe 9.

12 indicates atomizer-heads which upon a well-known principle deliver a fine spray 13 and to the body part of which the air connection is made.

14 indicates a small orifice through which the air issues.

15 indicates a channel or passage through the body or head by which the air reaches the orifice 14 from the T 11.

16 indicates what may be termed the "water-leg" of the atomizer-head.

The water-leg is screwed into the body part of the atomizer-head, and at the upper end of the water-passage is a seat 17 for a movable tip or nozzle 18. The tip has an oscillatory motion and is supported on a shaft 20, carried in bearings 19, and terminates in a flattened end or thumb-piece 20', by which it may be revolved or rotated in the bearings 19. It will be seen that by swinging the tip or nozzle 18 up by means of the shaft 20 the under side of the tip, which is conical in shape, will be directly in the path of the air-blast discharged through the orifice 14, by which any accumulation of sediment or deposit of whatever character within the tip will be blown out by the blast of air, after which the tip is returned to its normal position on its seat 17, freed from obstructions. The tip 18 is held to its seat by a spring 21 to prevent any leakage of air which would prevent water from being drawn up through the water-leg by suction.

In addition to the means for cleaning the tip above described needles 21' and 22 for the water and air legs, respectively, are provided. The needles are kept clear of the orifices and in their normal position by springs 23 and are pushed into the orifices by



heads 24. The needles are made tight in their respective legs by stuffing-boxes 24'.

25 represents water-tubes leading from the reservoir 2 to the water-legs 16 of the atomizer-heads. 26 is a wire-gauze strainer in the reservoir 2, and 27 is a sponge or other close material for preventing lint or other foreign matter from getting into the reservoir and at the same time allows water to trickle through as it is returned to the reservoir by the drip-pan 4.

Having thus fully described my invention, what I claim is—

1. In a humidifier, an atomizer-head having air and water discharge orifices, said water-orifice being provided with a laterally-movable tip, and means for supplying air and water to the atomizer-head.

2. In a humidifier, an atomizer-head having air and water discharge orifices, a laterally-movable tip for the water-orifice, means for placing the tip in the path of air-discharge from the air-orifice, and means for supplying air and water to the atomizer-head.

3. In a humidifier, an atomizer-head having air and water discharge orifices, said water-orifice being provided with a laterally-movable tip, and a reciprocating cleaning-

needle, and means for supplying air and water to the atomizer-head.

4. In a humidifier, an atomizer-head having air and water discharge orifices, said water-orifice being provided with a laterally-movable tip, and both the air and water orifices provided with a reciprocating cleaning-needle, and means for supplying air and water to the atomizer-head.

5. An atomizer-head provided with air and water discharge orifices, the latter having a movable tip pivotally secured to the head, and means for placing the tip in the path of air discharged from the air-orifice.

6. In a humidifier, a pair of atomizer-heads provided with means for supplying air and water thereto, an air-supply pipe to which said heads are attached, a drip-pan, a removable casing resting on and closed at its lower end by said drip-pan, and provided with a discharge-aperture opposite each atomizer-head.

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

STUART W. CRAMER.

Witnesses:

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