

F. B. COMINS.

HUMIDIFIER.

APPLICATION FILED MAR. 12, 1909.

931,845.

Patented Aug. 24, 1909.

2 SHEETS—SHEET 1.

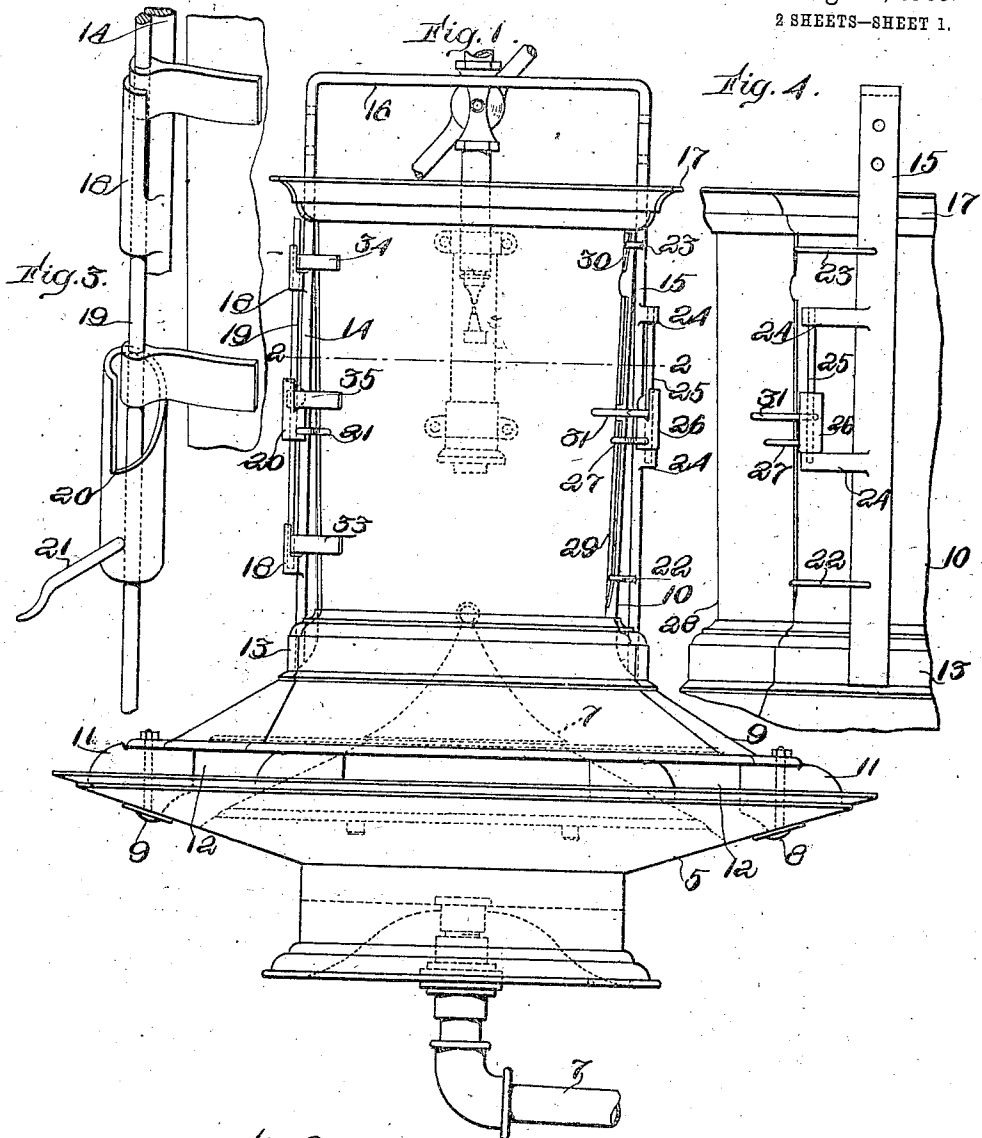
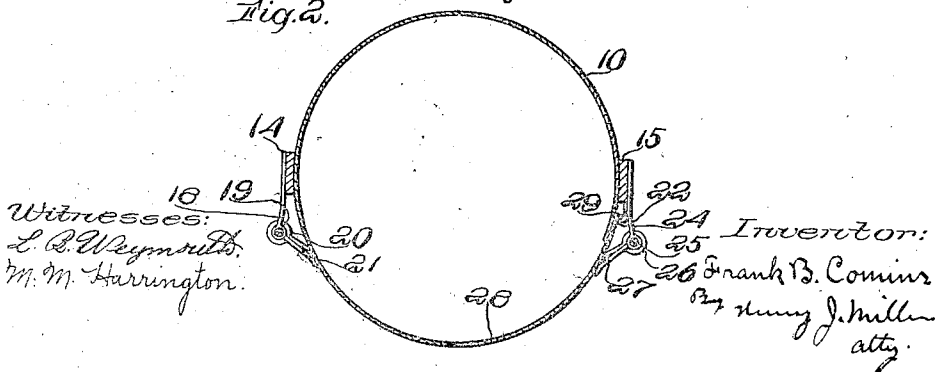


Fig. 2.



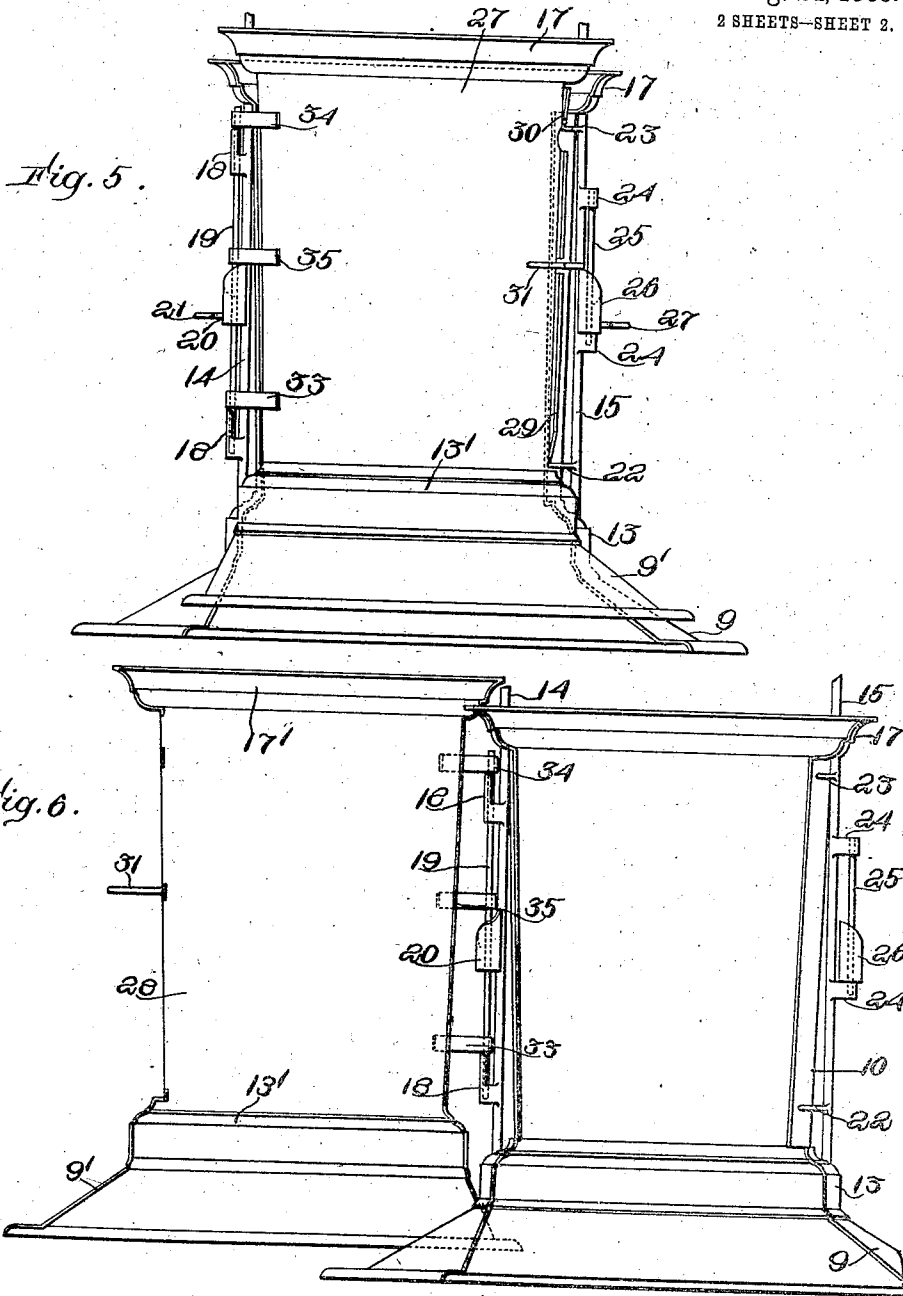
Witnesses:
L. B. Weymouth.
M. M. Harrington.

Inventor:
Frank B. Comins
By Harry J. Miller
att'y.

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By Henry J. Miller

UNITED STATES PATENT OFFICE.

FRANK B. COMINS, OF SHARON, MASSACHUSETTS.

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931,845.

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To all whom it may concern:

Be it known that I, FRANK B. COMINS, of Sharon, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Humidifiers, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof.

This invention has reference to improvements in humidifiers or devices for supplying moisture to air passing therethrough whereby to increase the humidity of the atmosphere into which said moistened air is discharged.

One object of this invention is to so construct a humidifier of this general nature that access may be had to the interior thereof without the removal of any large part or member of the humidifier whereby the clearing of the interior of the humidifier is facilitated.

Another object of this invention is to improve the construction of humidifier casings.

The invention consists in such peculiar features of construction and combination of parts as shall hereinafter be more fully described and pointed out in the claims.

Figure 1, represents a front elevation of the improved humidifier. Fig. 2, represents a cross sectional view of the same taken on line 2—2 Fig. 1. Fig. 3, represents an enlarged detail view of one of the hinges and one of the lifting devices for the swinging casing-member. Fig. 4, represents a side elevation of portions of the humidifier casing showing the means for engaging the edge of the hinged casing member and the mechanism for effecting the lifting of said member out of said engagement. Fig. 5, represents a front elevation of portions of the humidifier showing the movable casing member raised to a position where it may swing outward. Fig. 6, represents a similar view showing the movable casing member swung to the open position whereby access to the interior is facilitated.

Similar characters of reference designate corresponding parts throughout.

Humidifiers or air moistening machines of the general nature herein referred to comprise air chambers or casings through which currents of air are induced by the density and velocity of a jet of spray delivered within said chamber or casing. Under some conditions of use the atmosphere in which these machines are used fibrous and other

foreign matter in suspension in the air carried through the machine becomes moistened and adheres to the inner surface of the humidifier casing and the parts contained within said casing and, under such conditions, it is desirable to effect from time to time the cleaning of such parts on which said foreign matter has lodged. Owing to the peculiar location of the machines the size and material of their casings and the conditions under which the machines are used it is considered desirable to avoid the complete removal of any material part of the machine or the enlargement of the machine in any direction to accommodate such removal.

In carrying this invention into practice I construct, from sheet metal, the base 5 forming a concave drip receiving pan having the cone 6 and the waste pipe 7. This base or pan 5 is secured by means of bolts 3—8 to the flaring rim 9 of the fixed casing-member 10, spacing members 11—11 being introduced between said base 5 and rim 9 to provide the annular opening 12 between said parts through which the moistened air may pass from the machine. At the juncture of the casing member 10 with the rim 9 is located the segmental molding 13 in which the depending arms 14—15 of the hanger 16 are secured, said arms passing through the ornamental cornice 17 at the upper portion of said casing member 10 and being adapted to stiffen said casing member.

Arm 14 of hanger 16 has the upwardly extending locking members and guides 18—18 in bearings of which is journaled the rod 19 furnished with the cam 20 and adapted to be swung in its bearings by the lever 21. Arm 15 of said hanger 16 has the laterally extending members 22 and 23, furnished with hook like ends, and the brackets 24—24 in bearings of which is journaled the rod 25 having the cam 26 adapted to be rotated by the lever 27.

The movable casing member 28 is segmental in shape and has attached to it segmental moldings 13' and 17' and the segmental rim 9' which are complementary to the similar parts of the fixed casing member and are designed to fit in the segmental opening between the ends thereof when this member 28 is in the closed position. One edge of this casing member 28 has the outwardly bent lips 29—30, adapted to be engaged by the hook ends of the members 22 and 23, and the riding member 31 which, when this

casing member 28 is closed, is positioned to bear against the inclined face of cam 26 to be raised or lowered by the action of said cam when rotated. On the edge portion of this casing member 28 adjacent the hanger arm 14 are mounted the perforated straps 33, 34 and 35 of which the straps 33 and 34 are journaled on rod 19 relative to the guides 18—18 while strap 35 is journaled on said rod 19 just above cam 20 and forms a bearing member for said cam to act against. Within said casing is located any usual nozzle A through which water in a spray may be delivered to induce the flow of air currents through said casing, a large proportion of such spray being taken up by the air, in passing, and carried downward, and outward through the annular opening 12.

When it is desired to open the casing member 28 the levers 21 and 27 are swung outward thus effecting the rotation of cams 20' and 26 which, by reason of bearing against the member 31 and the strap 35 of the casing member 28, cause the raising upward of said member 31 and strap 35, and the casing member 28, to the position shown in Fig. 5 of the drawing in which the parts 9', 13' and 17' are free to swing clear of their corresponding fixed parts and the straps 33—34 may swing above their respective guides 18—18. If now the casing member is swung to the position shown in Fig. 6 of the drawing access may be had to the inner surfaces of said casing members 10 and 28 for their entire length and any accumulation of foreign matter on the inner surface of the member 10 may be wiped downward into the pan 5 and may be flushed therefrom through the waste pipe. If the casing member 28 is now swung back to the position shown in Fig. 5 of the drawing the lips 29 and 30 will be within the line of the hook ends of members 22 and 23, as indicated in Fig. 2 with reference to lip 29 and member 22, so that when levers 21 and 27 are swung against the casing member 28 said lips will move downward with said casing member 28 as the cams 20—26 permit such movement of

the bearing member 31 and the strap 35. At the same time the bearings of straps 33—34 will move downward on the rod 19 and said straps will be engaged in the guides 18—18 and the casing member 28 will be locked in the closed position with its parts 9', 13' and 17' in registration with their complementary parts 9, 13 and 17.

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

1. A humidifier comprising a casing formed of two segmental members of which one is free to slide vertically and is hinged to swing at a point to be reached by such sliding movement, and means for sliding said member.

2. A humidifier comprising a casing formed of two segmental members, a hanger having depending arms secured to one of said members, the other of said members being pivotally mounted on one of said arms.

3. A humidifier comprising a casing formed of two segmental members a hanger having depending arms secured to one of said members, a pivot carried by one of said arms, hinges on the other of said casing members journaled on said pivot, and means carried on said hanger arms for effecting sliding of said casing member.

4. The combination with a humidifier casing member segmental in cross section and having a flaring lower end, a hanger having depending arms secured to said casing member, one of said arms having vertical guides and provided with a rotatable cam, and the other of said arms having a cam rotatably mounted, of a second segmental casing member having a flaring lower end and hinges pivoted within said vertical guides and bearing members against which said cams may act when said second casing member is in the closed position, substantially as and for the purpose described.

FRANK B. COMINS.

Witnesses:

H. J. MILLER,
CHARLES B. CUMMINGS.