No. 825,796. PATENTED JULY 10, 1906.

J. H. BARTLETT & F. H. BROWN.

SEPARATOR.

APPLICATION FILED JULY 27, 1903.

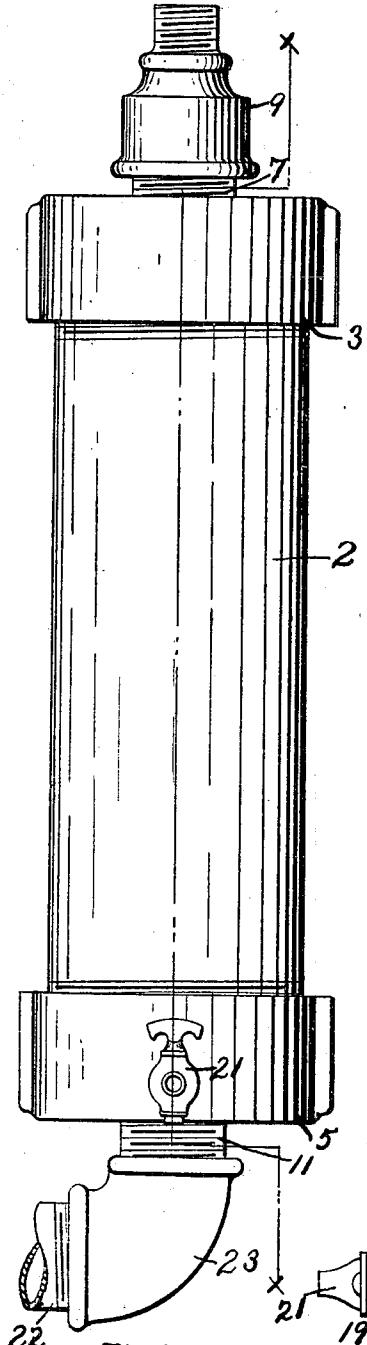


FIG. 1.

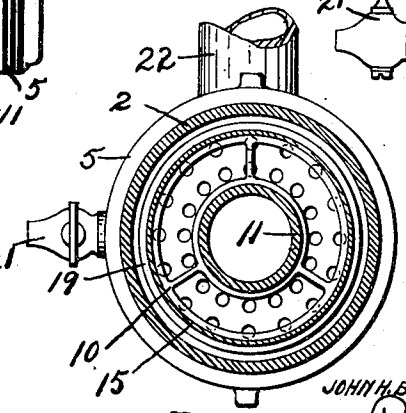


FIG 3.

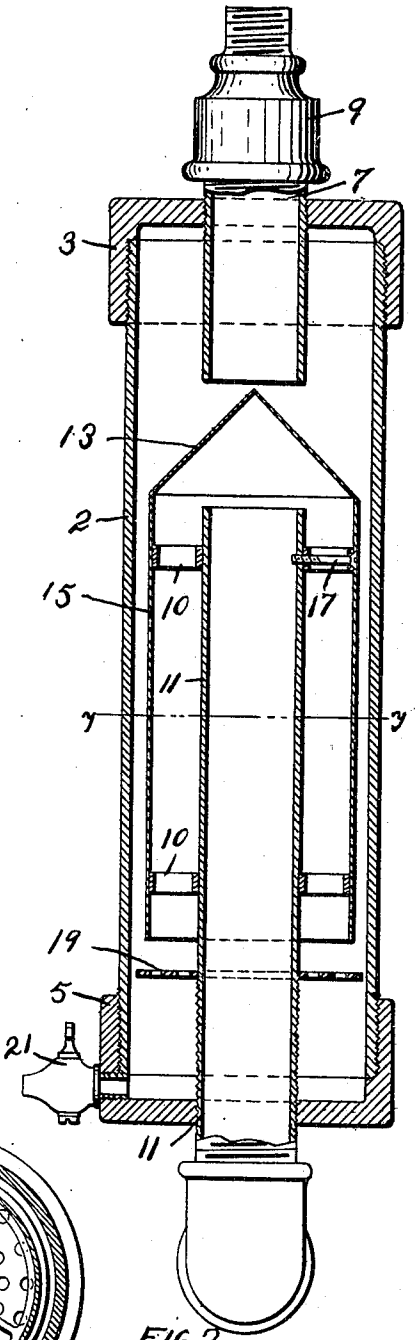


FIG. 2.

Witnesses
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SEPARATOR.

No. 825,796. Specification of Letters Patent. Patented July 10, 1906.

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To all whom it may concern:

Be it known that we, JOHN H. BARTLETT and FRANK H. BROWN, of Minneapolis, in the county of Hennepin, State of Minnesota, have invented certain new and useful Improvements in Separators, of which the following is a specification.

This invention relates to improvements in means for separating water from air, and particularly in means for separating water from compressed air.

The invention consists generally in a suitable chamber into which the compressed air carrying more or less water in suspension is forced and brought in contact with a conical distributer, whereby the air is spread and thrown against the walls of the chamber, and a pipe leading from said chamber and having its open end protected by said distributer and by a jacket connected to the base of the distributer.

The invention consists, further, in the constructions and combinations, all as hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of a separator embodying our invention. Fig. 2 is a vertical section on line *x x* of Fig. 1. Fig. 3 is a transverse section on line *y y* of Fig. 2.

In the drawings, 2 represents the separating-chamber, consisting, preferably, of a piece of cylindrical pipe having the caps 3 and 5 screwed onto the ends of the pipe. A pipe 7 projects through the cap 3, preferably in a central position, and extends downward into the chamber 2. A suitable feed pipe or hose is connected to the pipe 7 by a coupling 9. This feed-pipe leads from any suitable air-compressor. A pipe 11 projects through the cap 5, extending upward in the chamber 2 nearly to the lower end of the pipe 7. A conical distributer 13 is arranged over the open end of the pipe 11 and below the open end of the pipe 7. The base of the distributer is joined to the upper end of a jacket 15, that surrounds the pipe 11, is properly spaced therefrom by the open collars or rings 10, and is secured thereto by any suitable means. We have here shown the jacket secured to the pipe 11 by means of a suitable screw 17, passing through said jacket and extending into the wall of the pipe 11. A perforated baffling-plate 19 is secured upon the pipe 11 below the lower end of the jacket 15. A waste-cock 21 is connected to the space within the chamber below the baffling-plate 19. A suitable pipe 22 is connected to the lower end of the pipe 11 by means of a coupling 23.

We employ this separator principally in connection with compressed-air house-cleaning apparatus for the purpose of removing from the air any water that may be held in suspension therein. With compressed-air house-cleaning devices it frequently occurs that water held in suspension by the air will be condensed in the pipe and will be discharged through the air-distributing nozzle, thus wetting the furniture or walls of the room being cleaned. We entirely obviate this objection by the device herein shown and described.

In operation the air under pressure enters the chamber 2 through the pipe 7 and striking upon the conical distributer 13 is thrown against the walls of the chamber 2, at the same time being permitted to expand, and the water held in suspension thereby is condensed and passing downward gathers in the lower part of the chamber and is drawn off through the waste-cock 21. The air passes upward between the jacket 15 and the pipe 11 and passes out through the open end of said pipe 11.

We do not limit ourselves to the details of the construction, as the same may be modified in many particulars without departing from our invention.

We claim as our invention—

1. A device for depriving compressed air of moisture in a compressed-air cleaning apparatus, comprising a separating-chamber having an inlet-pipe for compressed air at its upper end projecting downwardly below its top, and an outlet-pipe for the air at its lower end, a pipe connecting with the outlet-pipe and extending upwardly within the chamber to a point below the downwardly-projecting inlet-pipe, and a conical-shaped deflector interposed between the downwardly-projecting air-inlet pipe and the pipe which projects upwardly from the air-outlet pipe, whereby the compressed air is conducted below the top of the chamber by said projecting pipe and directed against the conical deflector, substantially as described.

2. A device for depriving compressed air

of moisture in a compressed-air cleaning apparatus, comprising a separating-chamber having an inlet-pipe for compressed air at its upper end projecting downwardly below its top, and an outlet-pipe for the air at its lower end, a pipe connecting with the outlet-pipe and extending upwardly within the chamber to a point below the downwardly-projecting inlet-pipe, a conical-shaped deflector interposed between the downwardly-projecting air-inlet pipe and the pipe which projects upwardly from the air-outlet pipe and to which the air is conducted and against which it is directed by said downwardly-projecting air-inlet pipe, and a jacket connected to the base of the conical deflector and extending downwardly between said upwardly-extending pipe and the outer wall of the separating-chamber, substantially as described.

3. A device for depriving compressed air of moisture in a compressed-air cleaning apparatus, comprising a separating-chamber having an inlet for air at its upper end and an outlet for air at its lower end, a pipe connecting with the outlet-pipe and extending upwardly within the chamber, a deflector interposed between the upper end of said pipe and the air-inlet, a jacket connected to the base of the deflector and extending below the upper end of the upwardly-extending pipe so as to leave an unobstructed space between said jacket and the outer wall of the separating-chamber, and an open collar or ring supporting the jacket and deflector from said upwardly-extending pipe below the upper end of the pipe, substantially as described.

4. A device for depriving compressed air of moisture in a compressed-air cleaning apparatus, comprising a separating-chamber having an inlet for air at its upper end and an outlet for air at its lower end, a pipe connecting with the outlet-pipe and extending upwardly within the chamber, a deflector interposed between the upper end of said pipe and air-inlet, a jacket connected to the base of the deflector and extending below the upper end of the upwardly-extending pipe so as to leave an unobstructed space between said jacket and the outer wall of the separating-chamber, said deflector and jacket being supported from said pipe, and a perforated baffling-plate supported from said pipe and extending toward the wall of the separating-chamber below the lower end of the jacket, substantially as described.

In witness whereof we have hereunto set our hands this 22d day of July, 1903.

JOHN H. BARTLETT.
FRANK H. BROWN.

In presence of—
A. C. PAUL,
C. G. HANSON.