

A. C. SANFORD.  
Feather Renovator.

No. 80,017.

Patented July 14, 1868.

Fig. 2. x

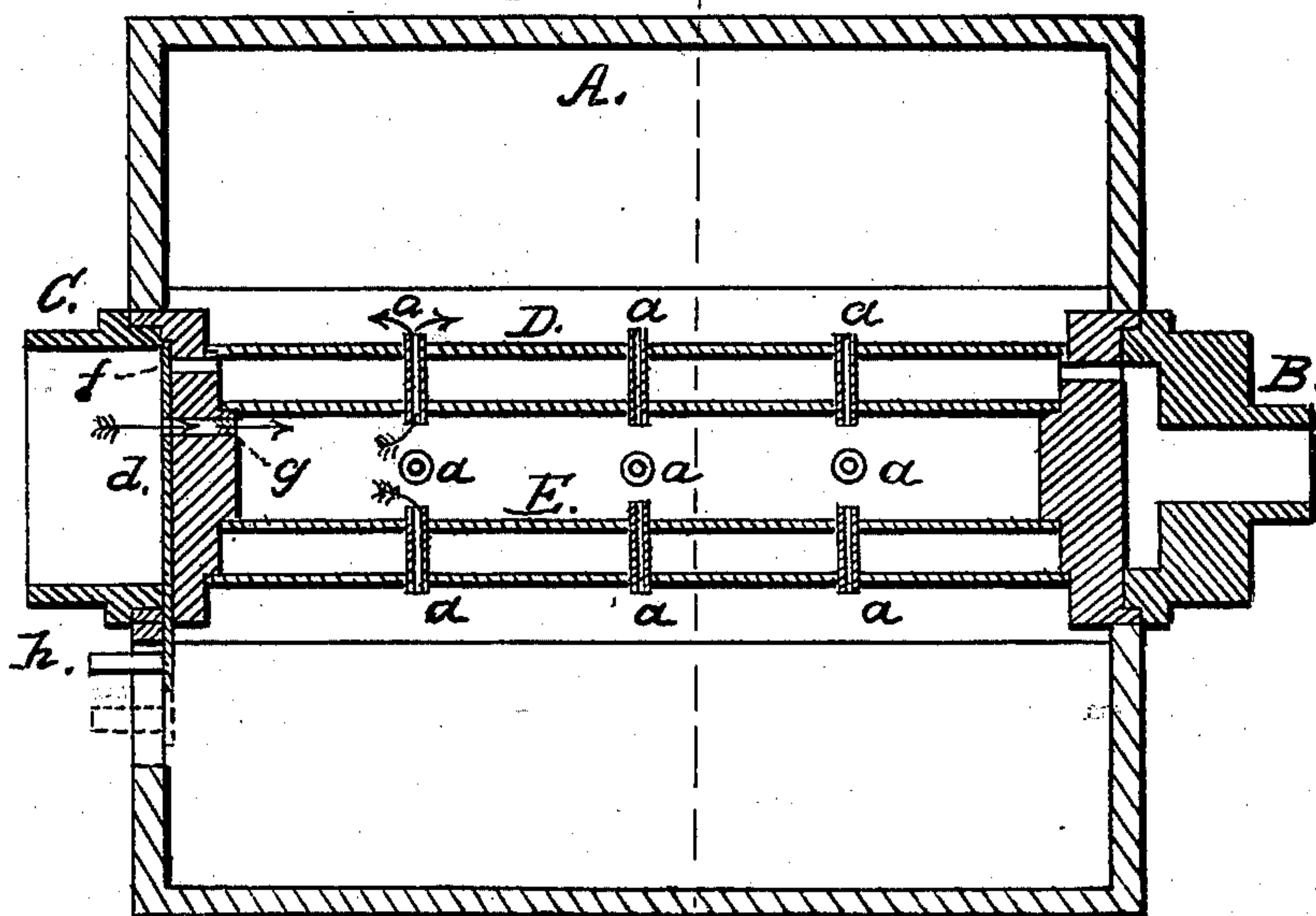
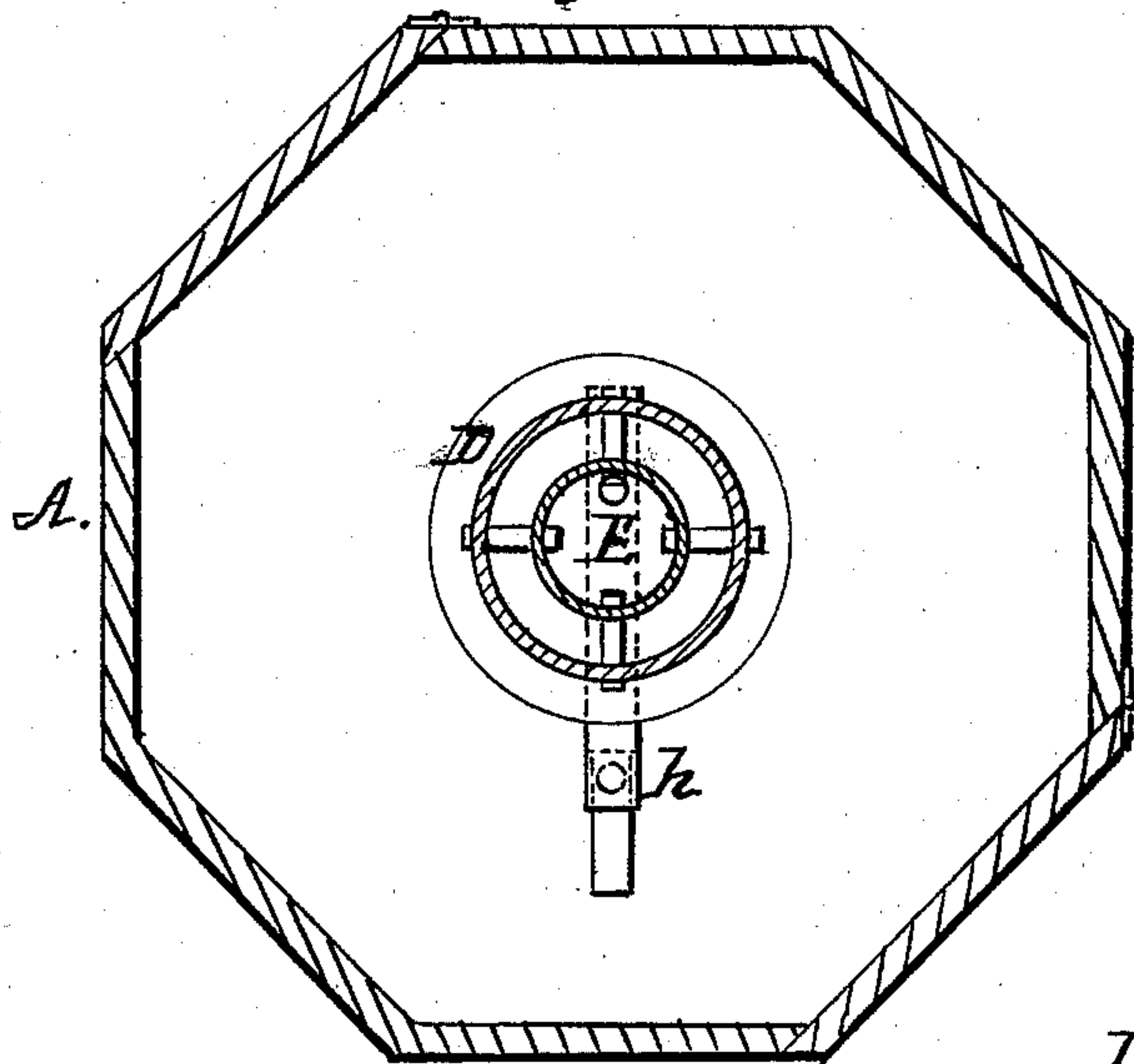


Fig. 1. x



Witnesses,

John H. Murray  
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Inventor,

Aaron C. Sanford

by his Attorney

John E. Earle

# United States Patent Office.

AARON C. SANFORD, OF PLYMOUTH, CONNECTICUT.

*Letters Patent No. 80,017, dated July 14, 1868.*

## IMPROVEMENT IN RENOVATING AND DRESSING FEATHERS.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, AARON C. SANFORD, of Plymouth, in the county of Litchfield, and State of Connecticut, have invented a new Improvement in Renovating and Dressing Feathers; and I do hereby declare the following, when taken in connection with the accompanying drawings, and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a transverse section on line *x x*, and in

Figure 2 a longitudinal section.

The object of this invention is to wash and dry or cleanse feathers, and the invention consists in the arrangement within a cylinder of a tube within a tube, and provided with a valve, so that the steam may be admitted to either of the said tubes, the inner tube communicating with the cylinder through numerous tubes, leading from the inner tube through the outer tube, and opening into the surrounding cylinder, while the outer tube is cut off entirely from the cylinder, and serves only as a heater or drier, while the inner tube admits the steam for cleansing the feathers.

In order to the clear understanding of my invention, I will proceed to describe the same as illustrated in the accompanying drawings.

A is a cylinder, of any suitable form or material, and arranged so as to be revolved upon bearings B and C. Within the said cylinder, and extending from end to end, are two tubes, D and E; D, the outer, being so much larger than the inner, E, as will form a space entirely around the inner tube, and from the inner tube *E* smaller tubes *a* lead through the outer tube D directly into the cylinder A.

The bearing C is hollow, and arranged in connection with a steam-pipe, so as to receive and conduct the steam into the inner tubes. *f* is an opening or port, communicating from the hollow bearing C into the outer tube D, and *g* is a like opening, communicating to the inner tube E, and over which said openings a valve, *d*, is arranged, so that but one of the said openings can be open at the same time, the opening *g* in fig. 2 being represented as open. The said valve is connected to a convenient handle, *h*, by which to operate the valve, so as to admit the steam to either of the tubes.

As represented in fig. 2, the steam is entering the inner tube, from whence it passes freely into the cylinder through the smaller tubes *a*. To cut off from this tube and admit to the outer tube, draw down the valve *d*, as denoted in red, then the upper opening *f* will be opened, and the lower opening *g* closed. Then the steam will pass into the tube D, around the inner tube, and, circulating therein, will heat the interior of the cylinder, and thence may, if desired, pass out through the open bearing B, or, what is, perhaps, better, may, when condensed, pass back to the boiler from whence it came.

The feathers to be renovated or cleansed are placed within the cylinder, through any convenient opening, and steam first admitted to the inner tube, thence into the cylinder, as before described, thus applying the hot steam direct to wash and cleanse the feathers, the cylinder in the mean time revolving, and when this has been continued a sufficient length of time, shift the valve, to cut off the steam from the inner tube and admit it to the outer, and the action of the steam in the outer tube (the cylinder still revolving) is to thoroughly dry the feathers within the cylinder.

I do not wish to be understood as broadly claiming the arrangement of two tubes, the one within the other within a cylinder, so that through one steam is admitted into the cylinder, while the other acts as a heater or drier when the steam is cut off, as such, I know, is not new.

Having thus fully described my invention, what I claim as new and useful, and desire to secure by Letters Patent, is—

The combination and arrangement of the outer tube D with the inner tube E and respective openings *f* and *g*, provided with the valve *d*, and having tubes *a* leading from the inner tube into the cylinder, and constructed so as to operate in the manner and for the purpose herein specified.

AARON C. SANFORD.

Witnesses:

A. J. TIBBITS,

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