(No Model.)

J. C. HATCH & L. H. FORTUNE.

Feather Renovator.

No. 235,236. Patented Dec. 7, 1880.

Fig. 1.

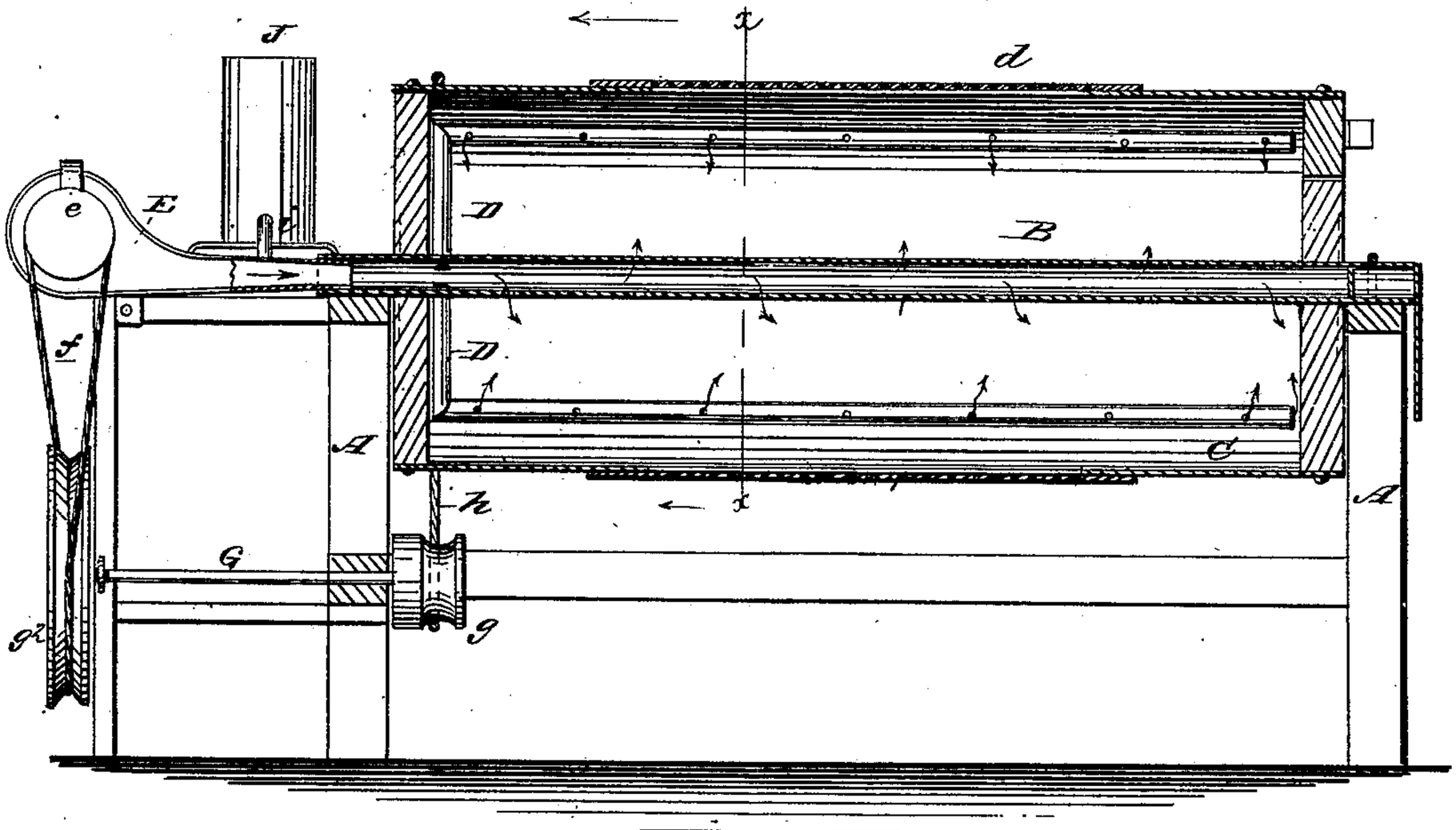


Fig. 2.

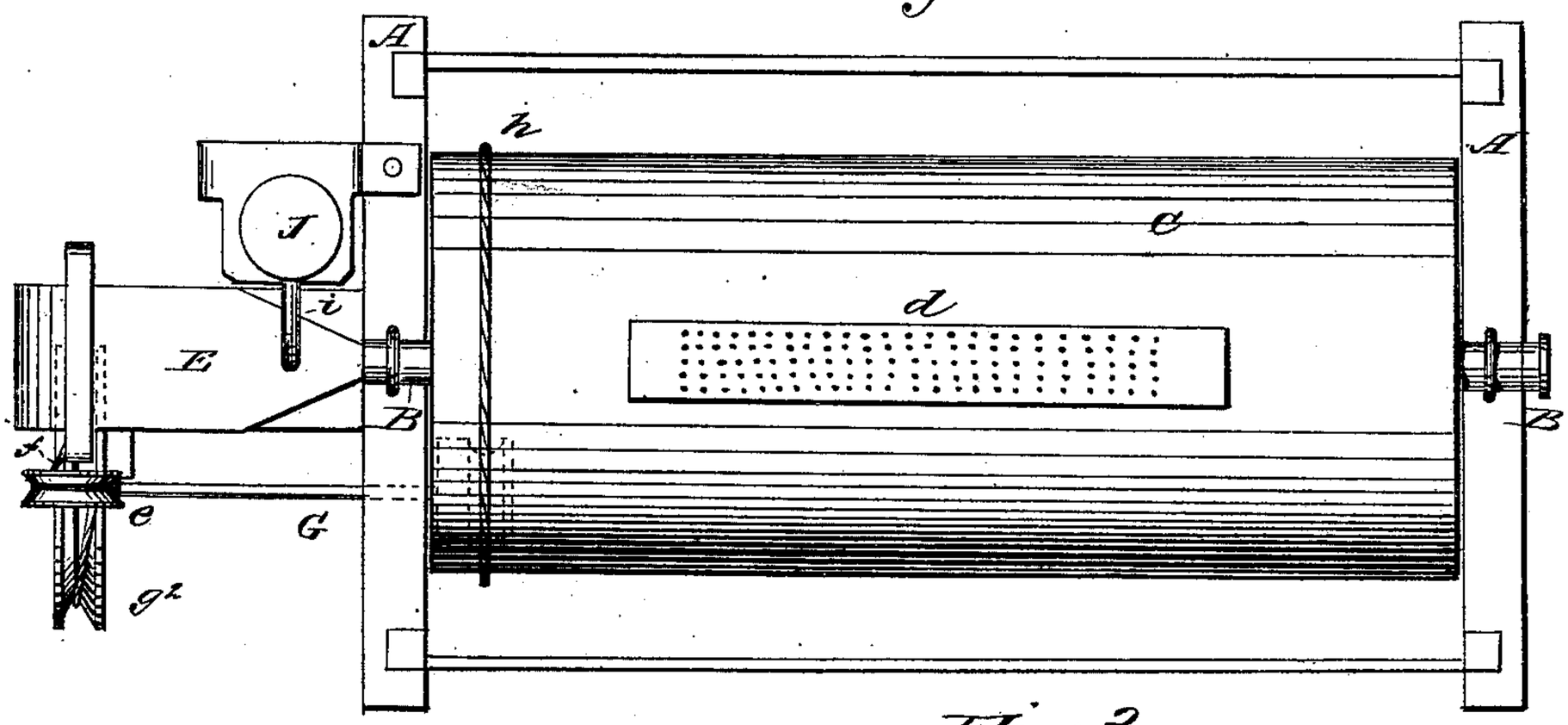
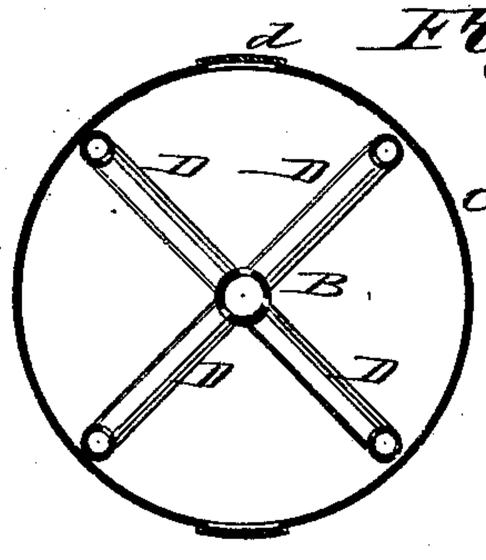


Fig. 3.



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UNITED STATES PATENT OFFICE.

JEFFERSON C. HATCH AND LEONARD H. FORTUNE, OF FELT'S MILLS, N. Y.

FEATHER-RENOVATOR.

SPECIFICATION forming part of Letters Patent No. 235,236, dated December 7, 1880.

Application filed April 2, 1880. (No model.)

To all whom it may concern:

Be it known that we, JEFFERSON C. HATCH and LEONARD H. FORTUNE, of Felt's Mills, in the county of Jefferson and State of New York, have invented a new and useful Improvement in Feather-Renovating Apparatus, of which the following is a specification.

Our invention relates to means for cleansing feathers before using them for beds, pillows, and similar purposes, and renovating them after they have been so used; and also for cleansing and renovating wool or hair or other substances used for mattresses.

The invention consists in a novel construction, arrangement, and combination of a revolving cylinder, a series of pipes, a blower, and a chamber for holding water or steam, or both, whereby provision is made for putting the feathers through a course of washing, steaming, or ventilating, or all three, and for drying them, as hereinafter particularly described.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of an apparatus embodying our improvements. Fig. 2 is a top view of the same. Fig. 3 is a transverse vertical section taken in the line *x x* of Fig. 1.

Similar letters of reference indicate corresponding parts.

A represents a frame-work, in which is journaled a hollow shaft consisting of a tube, B, to which is attached a hollow cylinder, C, provided with a door, *d*, for affording access to the interior.

To the hollow shaft B, near one end, inside the cylinder C, four pipes, D, are attached. These four pipes extend radially from the shaft B nearly to the inner surface of the cylinder, and thence extend parallel with said surface nearly to the opposite end of the cylinder. The outer end of the tubular shaft B is closed, and both ends of the cylinder are closed.

The pipes D communicate with the hollow shaft B through openings in said shaft at the points where said pipes radiate therefrom, and the extreme ends of said pipes are open.

The hollow shaft B, cylinder C, and pipes D are provided with perforations large enough to permit the passage of air, water, or steam, but not large enough to allow feathers to pass through.

At one end of the frame A is arranged a chamber, E, in which works a rotary blower. One end of the shaft of the blower extends out from the chamber, and is provided with a pulley, *e*, connected by a belt, *f*, with a pulley, g^2, on one end of a shaft, G, journaled in the lower part of the frame A. The other end of the shaft G carries a pulley, *g*, around which passes a belt, *h*, from the cylinder C, which cylinder thus acts as a driving-pulley, so that the revolution of the cylinder imparts motion to the blower.

The nozzle of the blower-chamber E enters into the open end of the hollow shaft B, and, if desired, it may be provided with a stuffing-box, so as to enable the shaft to revolve freely without allowing any backward escape of air.

Above the blower-chamber E rests a chamber, J, which is adapted to the holding of water or steam, or both. It communicates with the nozzle of the blower-chamber by means of a pipe, *i*, and is provided with a suitable pipe or pipes for communication with a water-reservoir or a steam-boiler, or both. It is also provided with suitable valves or stop-cocks for admitting and shutting off steam and water.

The feathers are placed in the cylinder C through its door *d*, which is then closed. Rotary motion being imparted to the cylinder, the feathers are thoroughly stirred, separated, and agitated, so as to allow the current from the blower-chamber to thoroughly ventilate them. If desired, steam or water, or both, may be admitted from the chamber J, and it will be carried through the feathers by the force of the blast from the blower. The air, water, and steam are forced through the perforations in the shaft B, pipes D, and cylinder C, in the manner and directions indicated by the arrows in the drawings.

When steam or water are used in the renovating process the drying of the feathers may be accomplished by continuing the air-blast after shutting off the steam or water.

We are aware that it is not new to make a perforated revolving cylinder in sections sliding one within another and having a fan-blower connected with its perforated hollow axle, or a double-walled wheel mounted on a perforate axle and provided with beaters, or

to use a rectangular frame formed of perforated tubing adapted to revolve in the casing, or to admit hot air into a central pipe perforated and having perforated radial arms, cold air being admitted at the top and steam at the bottom.

What we claim as new and of our invention is—

In a feather-renovator, the combination of the hollow perforate shaft B, the open-ended perforate inside pipes, D, the blower-chamber E, having nozzles entering said hollow shaft, and the chamber J, connected by pipe *i* with said nozzle, as and for the purpose specified.

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