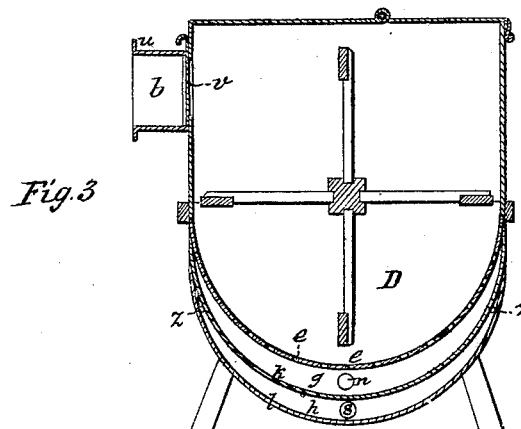
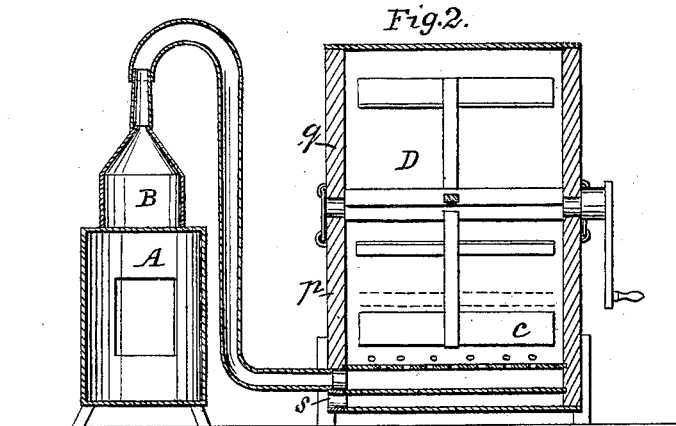
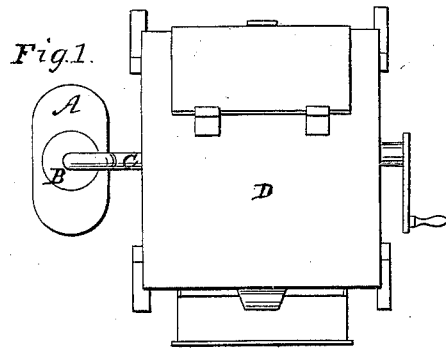


W. G. LUMBARD.  
Feather Renovator.

No. 108,161.

Patented Oct. 11, 1870.



Witnesses.  
Villette Anderson.  
Chas. Kenyon.

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# UNITED STATES PATENT OFFICE.

WILLIAM G. LUMBARD, OF GEORGETOWN, ILLINOIS.

## IMPROVEMENT IN FEATHER-RENOVATORS.

Specification forming part of Letters Patent No. **108,161**, dated October 11, 1870.

*To all whom it may concern:*

Be it known that I, WILLIAM G. LUMBARD, of Georgetown, in the county of Vermillion and State of Illinois, have invented a new and valuable Improvement in Feather-Renovators; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 is a top view of my invention. Fig. 2 of the drawing is a representation of a central vertical section of the same. Fig. 3 is a cross-section taken vertically at rectangles with the section represented in Fig. 2.

My invention relates to means for cleaning and renovating feathers; and consists in providing the renovating-chamber with three separate bottoms, the upper one of which is perforated, whereby the steam from the boiler can be used for drying, as well as cleaning, the feathers; also, in providing a flanged tube or passage, through which the renovated feathers may be thrown directly into the bag or ticking.

The letter A of the drawing designates the heater; B, the boiler or steam-generator; C, the steam-pipe; and D, the renovating-chamber, in which the feathers are placed.

The bottom of the renovating-chamber is semi-cylindrical in form, in order that the wheel *a* may reach every part thereof, throwing the feathers upward, and, after the drying is completed, outward through the passage *b*.

The cross-bars *c* on the ends of the spokes of the wheel *a* have their broad edges placed radially, in order that they may serve partly as fans when it becomes necessary to force the feathers out of the chamber.

*d* represents the upper partition of the bottom, perforated at *ee* to admit the steam to the chamber D, for the purpose of cleaning the feathers and imparting to them new life and elasticity. Steam is admitted below this perforated partition at *n*.

When the feathers have been sufficiently

steamed, the steam-pipe is shifted to the opening *s*, thereby cutting off the supply from the perforated chamber *g*, and turning it into the lower chamber, *h*, between the two lower imperforate partitions, *k* and *l*. The chamber *h* now becomes a steam-drum or heat-generator, and serves to dry the previously-steamed contents of the chamber D.

*zz* are openings at the upper part of the chamber *h*, to permit the steam to escape therefrom.

The passage *b* is usually in the form of a short rectangular tube. It is provided with a sliding gate, *v*, and its edges are bent outward to form the flange *u*, behind which the edge of the opening of the bag or ticking which is to receive the renovated feathers is fastened.

For convenience in cleaning the renovating-chamber, and to provide a means for introducing and securing the journals of the wheel, the lower or semi-cylindrical portion, *p*, is formed separate from the upper part, *q*, and is secured thereto by suitable bolts, or hooks and staples *tt*.

After the end of the steam-pipe is shifted from the opening *n* to the openings *s*, the former is free to admit air into the chamber D, whereby a draft is set up which accelerates the drying of the feathers.

What I claim as my invention, and desire to secure by Letters Patent, is—

The feather-renovating chamber D, made in two sections, provided with the flanged passage-way *b*, having slide *v*, and having perforated partition *d* and partition *k*, dividing its bottom into two chambers, *g h*, having openings *n s*, designed to admit steam thereto from the shifting steam-pipe C, in the manner and for the purposes shown and described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WM. G. LUMBARD.

Witnesses:

W. L. REED,  
PLEASANT WEST.