2 Sheets—Sheet 1.

W. A. LULL & P. A. BRAINERD.

Feather-Renovator.

No. 212,809. Fig. 1. Patented Mar. 4, 1879.

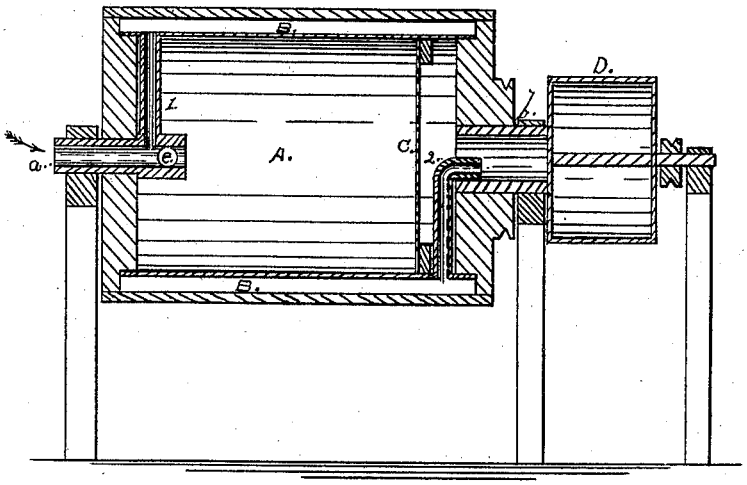


Fig. 2.

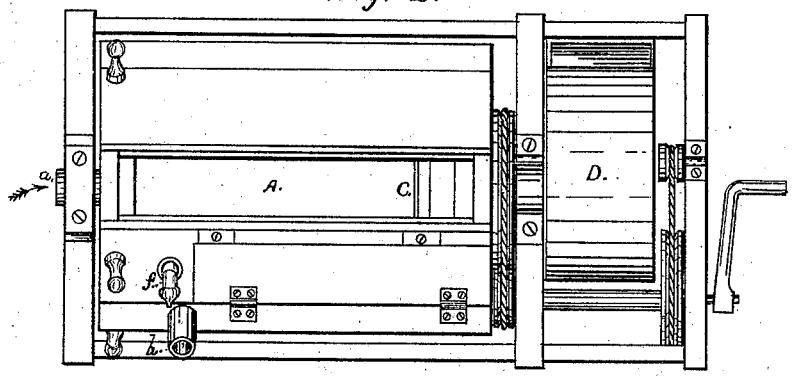


Fig. 3.

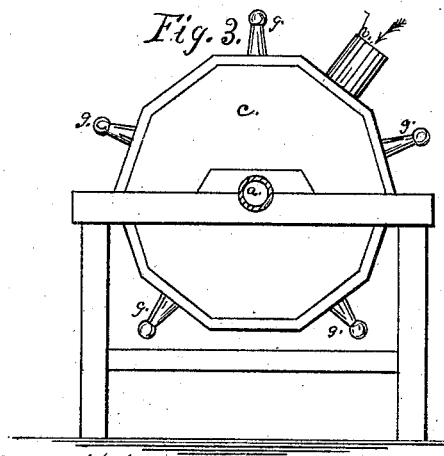
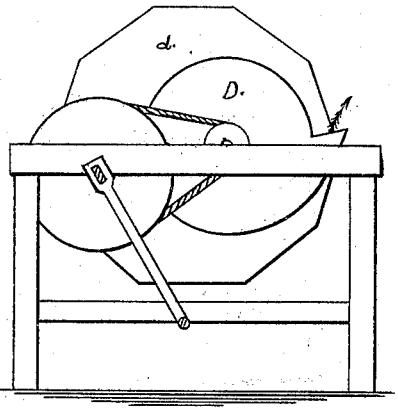


Fig. 4.



Witnesses:
S. I. Lacey.
G. A. Bishop

Inventors:
William A. Lull
Payson A. Brainerd
Per Thos. Wm. J. C. Robbins

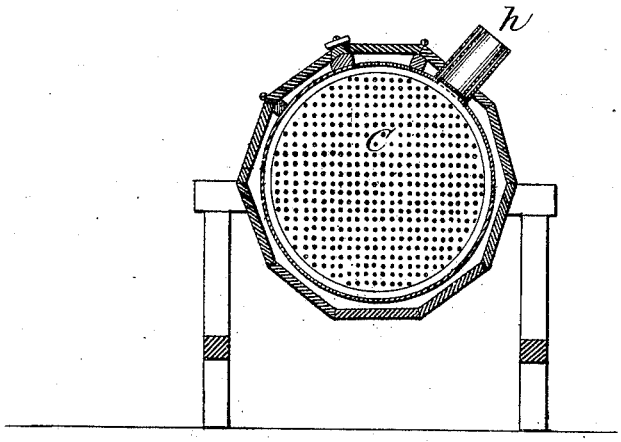
2 Sheets—Sheet 2.

W. A. LULL & P. A. BRAINERD.

Feather-Renovator.

No. 212,809. **Patented Mar. 4, 1879.**

Fig. 5.



Attest:

T. I. Lacey.

G. A. Bishop

Inventors.

William A. Lull

Payson A. Brainerd

Per their Atty. J. C. Robin

UNITED STATES PATENT OFFICE.

WILLIAM A. LULL AND PAYSON A. BRAINERD, OF HOOPERSVILLE, N. Y.

IMPROVEMENT IN FEATHER-RENOVATORS.

Specification forming part of Letters Patent No. **212,809**, dated March 4, 1879; application filed October 18, 1878.

To all whom it may concern:

Be it known that we, WILLIAM A. LULL and PAYSON A. BRAINERD, of Hoopersville, Broome county, New York, have jointly invented new and useful Improvements on Feather-Renovators, or for analogous purposes, which improvements are fully set forth in the following specification, reference being had to the accompanying drawings.

Our invention relates to that class of renovators by which the feathers are first steamed and then dried; and consists of a suction-blower supported on a frame at the end of a revolving cylinder having hollow journals, one of which conducts the steam into the feather-chamber or body of the cylinder and the heating-chamber for drying, the other a current of air from an opening in the side of the cylinder passing through the work, making its exit into the draft-pipe or chimney in such a manner as to allow of an increase or diminution of the circulation, according to the speed of the blower, by which means the operation may be accomplished in less time and at a lower temperature than by the ordinary method, thereby obviating the liability to overheating and the annoyance of disagreeable odors from the steaming feathers.

A full description of the construction and operation of the device will hereinafter be given.

Figure 1 in the accompanying drawings is a vertical longitudinal section of our improved renovator. Fig. 2 is a plan view, showing the open door for the reception and discharge of the work, also a door at its side having a screen for separating the dust or refuse from the feathers, if required. Figs. 3 and 4 are end views of the same, and Fig. 5 is a vertical cross-section.

A is the cylinder, which has a supplementary chamber, B, for drying the feathers in the body of the cylinder, the surface of which is covered with a polygonal jacket of wood. This cylinder revolves on hollow journals *a b*, which are attached to and extend through the ends *c d* of the cylinder. The journal *a* extends far enough into the feather-chamber from the end *c* for the connection of a radial steam-pipe, 1, with the steam-chamber B, and for the insertion of a valve, *e*, for the admission or exclusion of steam into or from said chambers. This valve has a radial handle, *f*, for operating it from the outside of the cylinder.

The steam is discharged from the chamber B through a pipe, 2, into the hollow journal *b*. Near this end of the feather-chamber is a screened partition, C, which prevents the work from obstructing the passage in the end of the cylinder, and allows a free passage of air and much of the dust and refuse from the feathers during the process of drying into the draft-pipe or chimney.

D is the suction-blower, which is supported in a frame at the end of the cylinder A. This blower connects with the end of the hollow journal *b* by an opening near the axis, in which said journal fits loosely.

The blower D is operated by a hand-crank or by radial handles *g g* projecting from the cylinder, as shown by Fig. 3 in the drawings, or a pulley-and-belt connection with a power-shaft may be used.

When we use our renovator, the work is introduced into the cylinder through a door in one of the sides of the polygonal jacket. The steam is then allowed to enter the chambers through the hollow journal *a* by opening the valve *e*. After sufficient steaming, the cover on the opening *h* is removed for the admission of air and the valve *e* closed, which admits the steam through the pipe 1 into the chamber B for drying the work.

The cylinder and fans of the blower are then rotated, which creates a current of air from the opening *h* through the cylinder and among the feathers in proportion to the speed of the blower, which, with the surrounding heat from the chamber B, effectually finishes the work. The door inclosing the screen in the side of the cylinder is then opened and the feathers agitated by hand until they are free from any remaining dust or refuse, when they are ready for removal.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

In combination with the cylinder A, the suction-blower D, screen-partition C, for preventing the obstruction of the air-passage through the hollow journal *b* and separating the dust and refuse from the feathers, and air-aperture *h*, substantially as shown and herein described, for the purpose set forth.

WILLIAM A. LULL.
PAYSON A. BRAINERD.

Witnesses:
P. P. ROGERS,
M. E. CONKLIN.