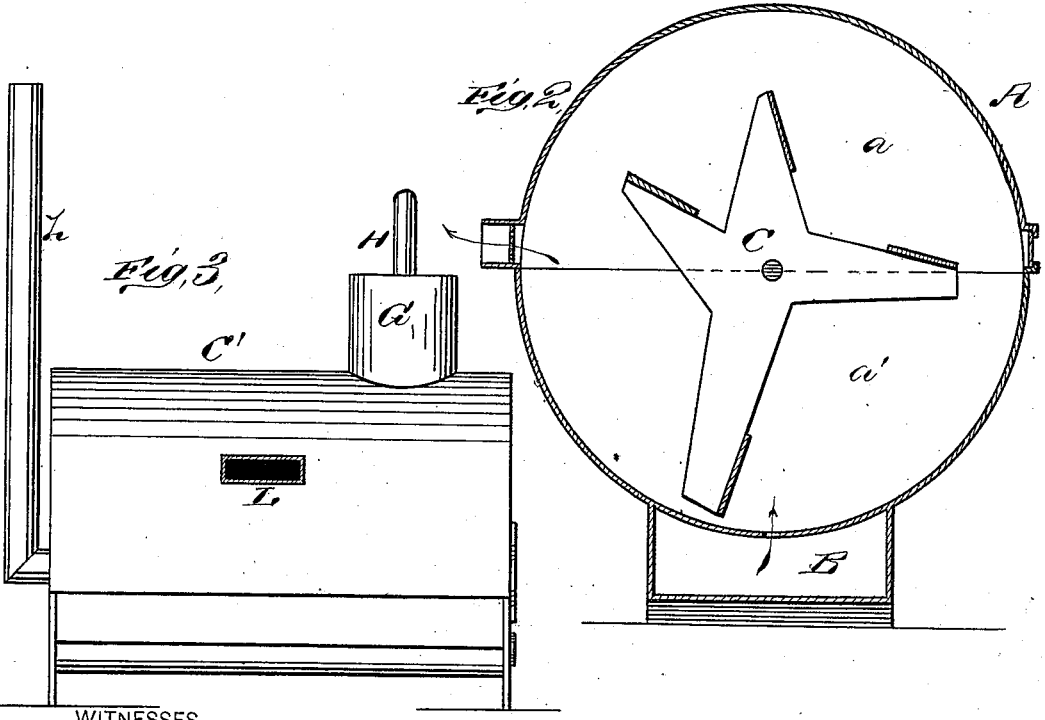
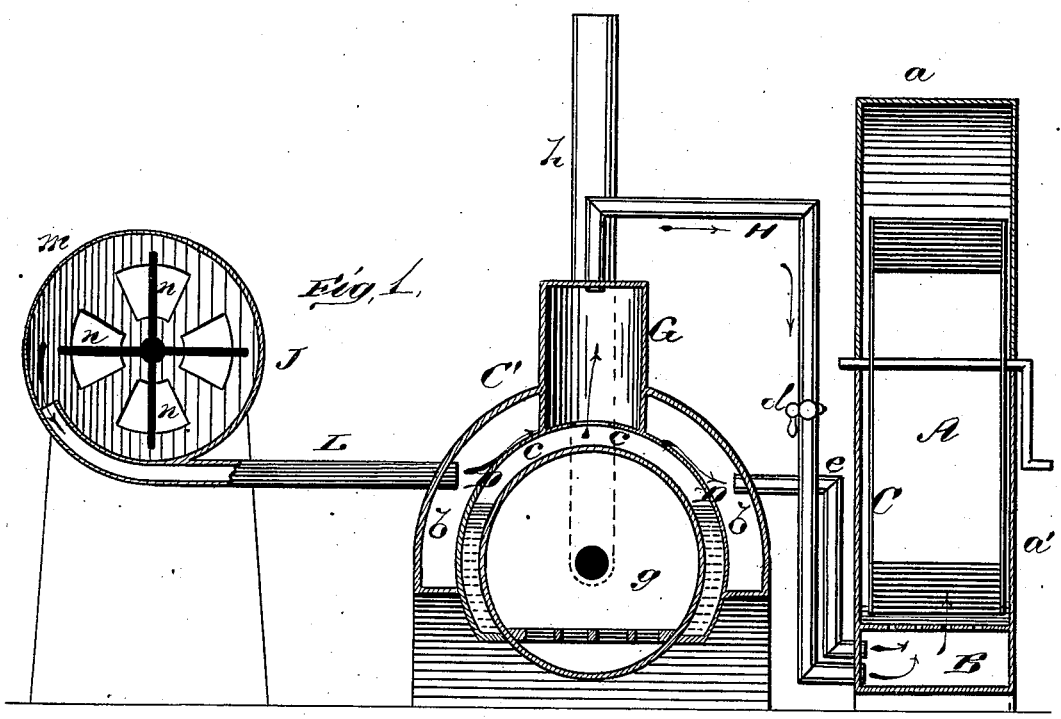


R. HOOVER.
Feather Renovator.

No. 202,030.

Patented April 2, 1878.



WITNESSES
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REUBEN HOOVER, OF BOONESBOROUGH, IOWA.

IMPROVEMENT IN FEATHER-RENOVATORS.

Specification forming part of Letters Patent No. 202,030, dated April 2, 1878; application filed December 29, 1877.

To all whom it may concern:

Be it known that I, REUBEN HOOVER, of Boonesborough, in the county of Boone and State of Iowa, have invented a new and valuable Improvement in Hot-Air-Blast 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 drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a longitudinal vertical section of my invention. Fig. 2 is a sectional view of the renovator, and Fig. 3 is a side view of the heat and steam generator.

This invention has relation to improvements in feather-renovators wherein steam is employed as the cleansing medium.

The object of the invention is to so warm and dry the feathers in the renovator previous to steaming that there will be comparatively but little condensation of steam therein, and yet obtain a perfect cleansing of its contents.

The nature of my invention consists in combining with a renovating-vessel a heater provided with a central fire-box, a surrounding steam-generator, and an air-space, the said boiler and air-space being connected to the vessel by means of suitable pipes, and the air-space with a suitable blowing device, as will be hereinafter more fully set forth.

In the annexed drawings, the letter A designates a cylindrical metallic vessel, formed of two sections, *a a'*, removably secured together, and resting upon a metallic chest, B, having communication with the interior of the vessel A by means of spaced perforations through the lower portion of the section *a'*. Inside of this cylinder is mounted, in suitable bearings, an agitating-wheel, C, the function of which is to raise and lighten up the feathers, and which is given rotary motion through a crank-arm, a system of gear-wheels or pulleys, and an endless belt driven by a suitable motor.

The section *a* has two or more opposite

openings, closed at pleasure by metallic slides, which may be solid or reticulated.

Near the renovator is placed a steam-generator, C', of suitable dimensions, provided with a jacket, D, that forms, with the exterior walls of the generator, an air-chamber, *b*.

G represents a steam-dome, mounted upon and extending through the jacket D, and opening into the steam-space *c* of the generator. This dome is connected with the chest B at the bottom of the renovator by means of a pipe, H, provided with a suitable cut-off, *d*, and is provided with the usual safety-valve. The air-chamber is also connected with the said chest by a pipe, *e*, having a suitable valve or cut-off, and with the case of a blowing-engine, J, by means of the conduit L.

The blower is composed of a cylindrical case, *m*, and a rotary fan, *n*, journaled therein, and actuated by a suitable motor at any desired speed.

The fire is built in the central flue *g* of the generator, the products of combustion passing out at its rear end through a stack, *h*, and the superheated steam collects in the space *c* and dome G, at the same time raising the air in the chamber *b* to a very high temperature.

The renovator being charged with feathers, the cut-offs of the hot-air pipe and of the steam-pipe being closed, the blower is set in motion and the said hot-air pipe opened, when a strong current or blast of hot air will be driven into the chest B and pass into the renovator, penetrating and permeating every part thereof, and effectually drying and warming its contents. This being accomplished, the blower is stopped, the hot air shut off, and steam admitted through pipe H into the renovator, the agitating-wheel being in motion.

The contents of the renovator being dry and warm, very little of the steam is condensed, and the feathers are effectually cleansed and rendered crisp and fresh.

After the steaming is over, I may again turn on the hot-air blast, if I so elect, to complete the drying.

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

In combination with the renovating-vessel A, the heater C', provided with central fire-box *g*, and surrounding steam-space *c* and air-space *b*, the said boiler and air-space being connected to the vessel A by means of suitable pipes, and the air-space D with a suitable blowing device, the whole constructed and arranged to operate substantially as specified.

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

REUBEN HOOVER.

Witnesses:

LEWIS A. GROFF,
J. M. ANDERSON.