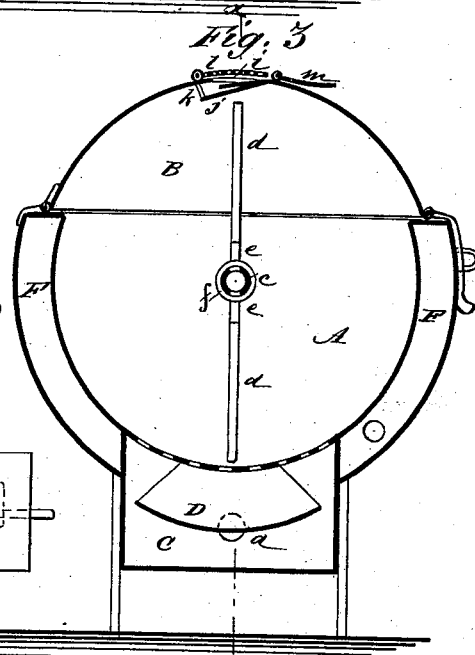
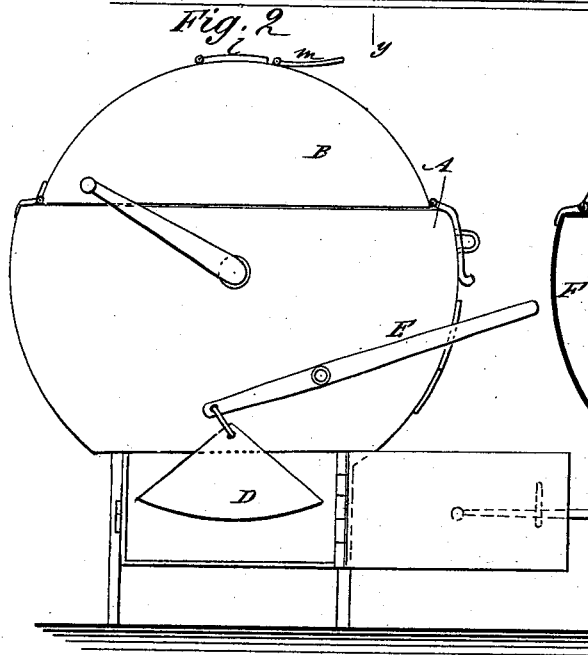
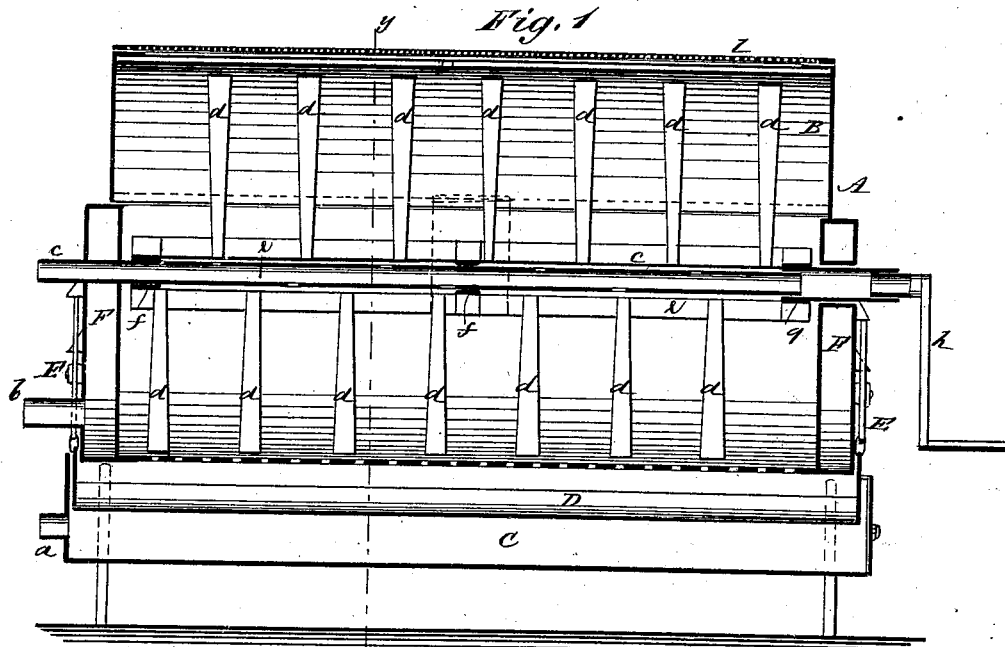


B. SLATER.  
Feather-Renovator.

No. 204,769.

Patented June 11, 1878.



WITNESSES:  
*C. Newell*  
*C. Sedgwick*

INVENTOR:  
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BY *Munn & Co.*

ATTORNEYS.

# UNITED STATES PATENT OFFICE.

BENJAMIN SLATER, OF ATTICA, NEW YORK, ASSIGNOR TO HIMSELF, ISAAC O. WILLIAMS, AND JAMES G. DORRANCE, OF SAME PLACE.

## IMPROVEMENT IN FEATHER-RENOVATORS.

Specification forming part of Letters Patent No. 204,769, dated June 11, 1878; application filed March 22, 1878.

*To all whom it may concern:*

Be it known that I, BENJAMIN SLATER, of Attica, in the county of Wyoming and State of New York, have invented a new and Improved Feather-Renovator, of which the following is a specification:

Figure 1 is a longitudinal section of my improved feather-renovator, taken on line *x x* in Fig. 3. Fig. 2 is an end elevation. Fig. 3 is a vertical transverse section taken on line *y y* in Fig. 1.

Similar letters of reference indicate corresponding parts.

The object of my invention is to provide a simple and effective device for renovating feathers by the combined action of steam and hot air; and it consists of a cylindrical receptacle, partly surrounded by a steam-jacket, and having a hot-air box, a perforated bottom, a cover or damper for the same, and an aperture in the top, to which is fitted a perforated cover and a close cover.

Referring to the drawing, A is a horizontal sheet-metal cylinder, which is supported in a suitable frame, and is provided with a hinged upper portion, B, which may be opened for introducing or removing feathers.

The lower side of the cylinder is perforated, and the perforated portion is inclosed in a box, C, that contains a cover, D, that is suspended upon levers E, pivoted to the ends of the cylinder, the said cover being capable of covering all of the perforations in the under side of the cylinder when it is raised up against the cylinder by means of the levers E. The box C communicates with an air-heating chamber by means of a pipe, *a*.

Upon the sides and ends of the cylinder A there is a steam-jacket, F, that receives steam from a suitable steam-generator through a pipe, *b*.

A perforated steam-pipe, *c*, is inserted axially into the cylinder, and extends from one end of the cylinder nearly to the opposite end. Upon this pipe is placed the agitator, which

consists of two series of blades, *d*. These blades are secured to bars *e*, that are attached to sleeves *f f g*, that are capable of being turned on the pipe *c*. This sleeve *g* extends through the end of the cylinder to receive the crank *h*, by which the agitator is turned.

In the top of the hinged portion B there is an oblong aperture, *i*, for the escape of steam and air. To the inner surface of the hinged portion B, at one edge of the aperture *i*, a guard or lip, *j*, is attached, which extends toward the opposite side of the aperture, leaving the space *k*.

Two covers, *l m*, are hinged at opposite sides of the aperture *i*, either of which may be shut down over the said aperture. The cover *l* is perforated, while the cover *m* is entire.

The feathers to be renovated are placed in the cylinder A, when the hinged portion B is closed down and fastened, and the aperture *i* is closed by means of the cover *m*. Steam is then admitted through the perforated pipe *c*, and the agitator is revolved until the feathers are thoroughly steamed, when the steam is shut off and the perforated cover *l* is substituted for the cover *m*, and the cover D is dropped. Steam is admitted to the jacket F, and hot air is drawn into the cylinder through the box C. The feathers are rapidly agitated, and soon become thoroughly dry and completely renovated.

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

1. The perforated cylinder A, having the steam-jacket F, hot-air box C, and cover D, substantially as shown and described.

2. The cylinder having the oblong aperture *i*, the inclined plate *j*, and a perforated cover, *l*, and entire cover *m*, in combination, substantially as specified.

BENJAMIN SLATER.

Witnesses:

CHARLES MCCARTHY,  
WALLACE H. MAXON.