T. J. ADAMS.

FEATHER RENOVATORS.

No. 195,554. Patented Sept. 25, 1877.

Fig. 1.

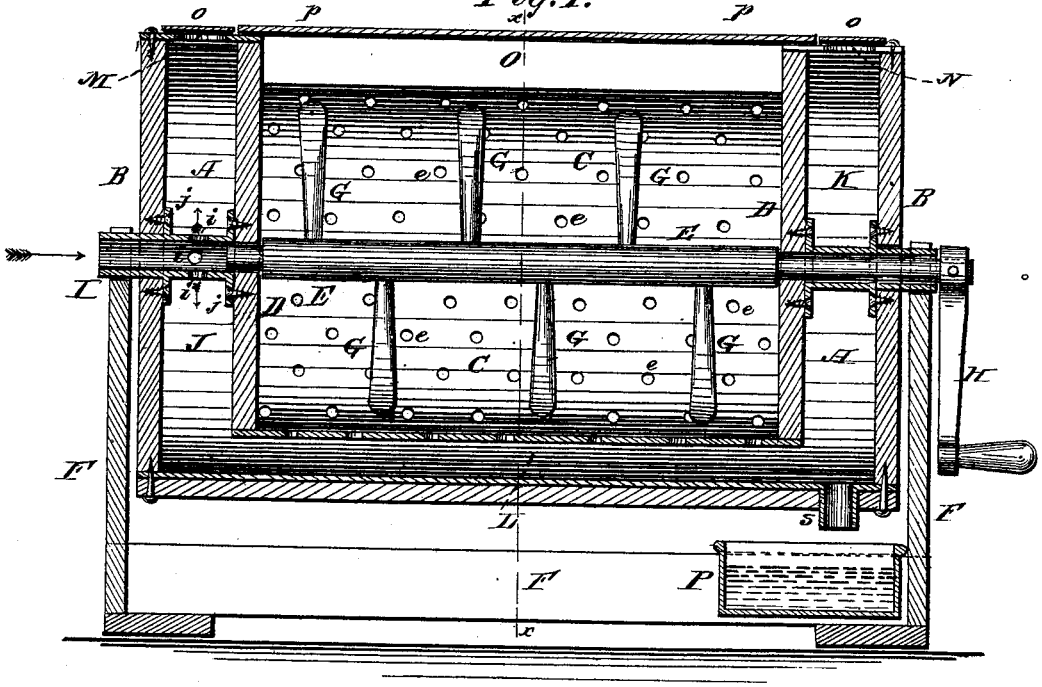
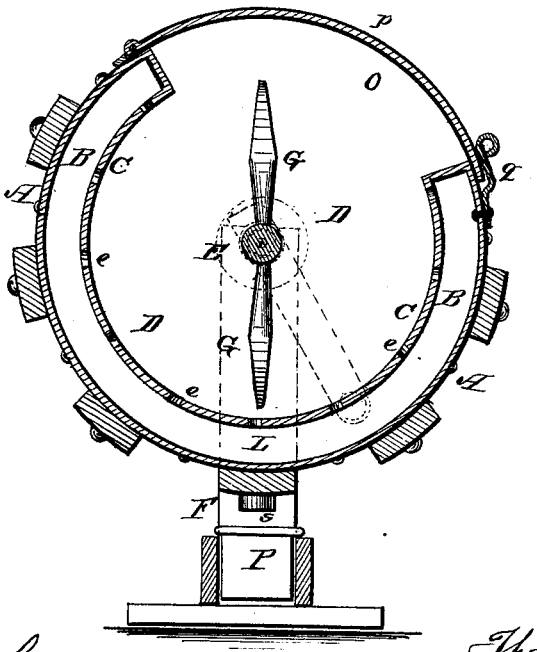


Fig. 2.



Witnesses:

F. C. Dieterich

Frank N. Duffy

Inventor:

Theodore J. Adams.

Per E. S. Collamer Attorney

UNITED STATES PATENT OFFICE.

THEODORE J. ADAMS, OF WHITEHALL, NEW YORK.

IMPROVEMENT IN FEATHER-RENOVATORS.

Specification forming part of Letters Patent No. **195,554**, dated September 25, 1877; application filed September 18, 1877.

To all whom it may concern:

Be it known that I, THEODORE J. ADAMS, of the town of Whitehall, county of Washington, State of New York, have invented a new and useful Improvement in Renovators for Feathers, Hair, Moss, &c., of which the following is a specification, reference being had to the accompanying drawings, which form a part of the same.

Like letters whenever they occur indicate like parts.

Figure 1 is a central vertical section. Fig. 2 is a transverse section taken on line *x x* Fig. 1.

The purpose of my invention is to provide a cheap and simple device that will effectually renovate, clean, and dry feathers and other analogous material, and prevent dirt and filth from accumulating in the apparatus.

The machines at present in use for this purpose are generally expensive and complicated, and are not provided with means, like mine, for cleaning the drying or surrounding chamber, or at least automatically cleaning it out by the steam after being used. Hence the dirt washed from the feathers accumulates, and not only clogs the machine and limits its amount of work, but it necessarily does not do perfect work, and the feathers are often found somewhat discolored or not thoroughly cleaned.

I have long tried to obviate these difficulties without making the machine complicated and expensive, and have succeeded.

My invention consists in the details of construction and combination hereinafter more fully set forth in the claims.

A is an outer cylinder, having ends B, and within this cylinder is a partially-cylindrical receptacle, C, having ends D, and secured at its upper edges to the outer cylinder, by which means it is held in place rigidly.

The inner cylinder is the receptacle for the feathers or material to be treated, and is provided with suitable perforations *e* along the cylindrical part, and may have perforations in one or both of its ends when necessary. These cylinders and their ends are generally made of zinc, but may be made of any other material, or have wooden ends, if desired. A central solid shaft, E, passes through both of the cylinders, and is journaled in the right-hand bearing of a supporting-frame, F, and is provided with stirrers or paddles G, radiating from it into the inner cylinder, so that when the shaft is turned by the removable crank H the feathers in the inner cylinder will be loosened up or mixed, and hence made lighter and more easily cleaned or dried. The outer cylinder A is supported at one end by this shaft E in the bearing of the frame, and has attached to its opposite end a hollow gudgeon, I, provided with holes *i* and two flanges, *j*, one being fastened to the outer cylinder and the other to the inner cylinder. This gudgeon forms the left-hand bearing of the outer cylinder, and is supported by and turns in the left-hand bearing of the frame.

The outer cylinder can be turned, when necessary, to empty out the feathers or to bring the device into a convenient position to be cleaned, as hereinafter referred to.

The inner cylinder or feather-receptacle is much shorter than the outside cylinder, and smaller in diameter, which leaves large spaces J K between the ends of the cylinders—that is, between the inside and outside cylinders—and a space, L, between the bodies of the cylinders. In the outer cylinder are two large ports or openings, M N, on the upper side, communicating with the spaces or drums J K, and have steam-tight hinged covers *o*, that can be opened or closed at will.

The operation is as follows: The feathers to be cleaned or renovated are placed in the inner cylinder through the opening O, and the tight-fitting cover or lid *p* is closed and secured by the catch *q*. Steam is admitted to the spaces J C K through the hollow gudgeon I in the direction of the arrow, and passes through its holes *i*, thereby filling the entire space around the inner cylinder, and entering the latter through its side perforations *e* and end perforations, whenever these are used, thereby permeating the feathers and washing and cleaning them thoroughly. The condensed steam falls on the inside and bottom of the outside cylinder, and carries away the dirt in the water out into a pan, P, through the outlet-port *s*. The pan sits upon the frame-work, and can be removed and emptied when full. The heat of the cylinder,

after the steam is shut off and the water runs out, is sufficient to dry the feathers, the crank being turned and the feathers being loosened up or agitated at the same time. The apparatus is then readily cleansed from smell and dirt by turning it upon its bearings and bringing the ports M N down, when either or both are opened and steam is forced through the machine, as before, whereby it is thoroughly cleaned out, and in a few moments ready for use again.

It is obvious that the parts may be very differently constructed without departing from the spirit of my invention.

The ports M N may be situated at different points to lead to the spaces J K C, and may be less or more in number; and the particular form of the outer and inner cylinders may be somewhat changed in order to permit the dirt to escape, or for other purposes.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination of the cylinder B, having covered clearing-ports M N and lid *p*, perforated receptacle C, rotating agitator G, and hollow perforated gudgeon I *i*, constructed to form spaces J K C, substantially as set forth.

2. In a feather-renovator constructed substantially as described, the combination of an outer cylinder, provided with covered clearing-ports M N, a hollow perforated gudgeon, I *i*, and an inner perforated receptacle, C, having a rotating agitator, G, as set forth.

THEODORE J. ADAMS.

Witnesses:
FRANKLIN FISH,
JAMES QUINN.