T. F. McBRIDE.

Feather-Renovator.

No. 213,223. Patented Mar. 11, 1879.

Fig. 1.

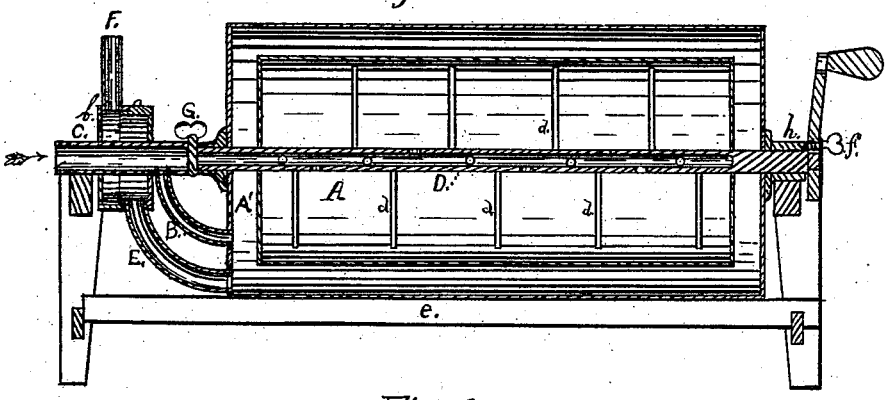

Fig. 2.

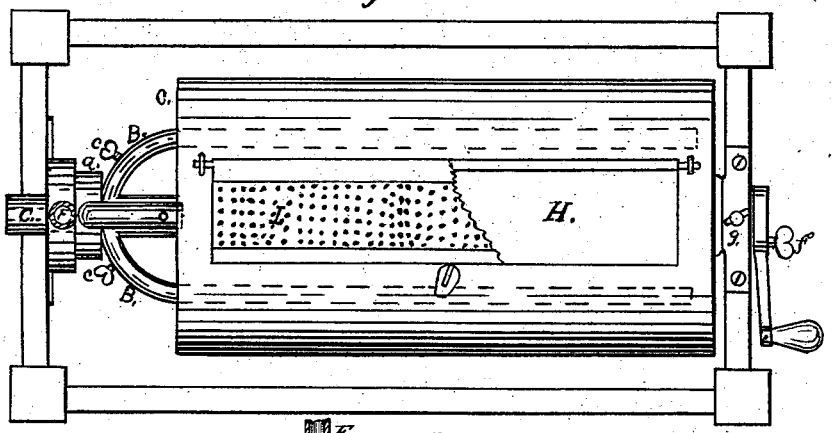

Fig. 3.

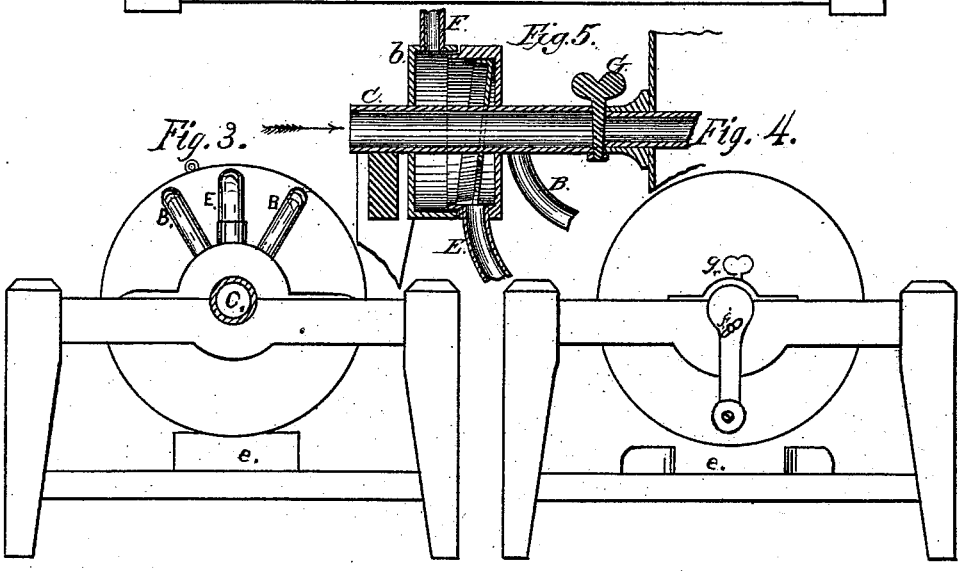

Fig. 5.

Fig. 4.

Witnesses;
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UNITED STATES PATENT OFFICE.

THOMAS F. McBRIDE, OF BINGHAMTON, NEW YORK.

IMPROVEMENT IN FEATHER-RENOVATORS.

Specification forming part of Letters Patent No. **213,223**, dated March 11, 1879; application filed July 15, 1878.

To all whom it may concern:

Be it known that I, THOMAS F. McBRIDE, of Binghamton, in the county of Broome and State of New York, have invented certain new and useful Improvements in Feather-Renovators, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to a simple, compact, and effective device for the restoration of feathers by steaming and drying; and consists of a new arrangement and combination of parts, which will hereinafter be fully described.

Figure 1 in the accompanying drawings is a vertical longitudinal section of an apparatus embodying my invention. Fig. 2 is a plan view. Figs. 3 and 4 are end views of the same. Fig. 5 is a detail, on an enlarged scale, showing the steaming-chamber and pipes.

A is the revolving cylinder, which is hung on bearings on a suitable frame. This cylinder has a steam-chamber, A′, surrounding it, which is supplied with steam by two longitudinal pipes, B, passing through the end of chamber A′, and extending nearly to the opposite end, as shown by dotted lines in Fig. 2. This insures a more equal and effective circulation of steam in the chamber. These pipes connect with the supplementary extension C of the hollow shaft D, and serve as a steam-supply pipe. E is the discharge-pipe from the chamber A′, and is connected with a collar or sleeve, *a*, the rim of which has a loose connection with the base *b* of the draft-pipe F, to allow of the rotation of the cylinder A. Near the connection of this pipe with the end of the chamber A′ is an opening for the discharge of accumulated water from the steam.

Suitable valves *c c* in the pipes B B control the admission of steam to the chamber A′, and valve G in the shaft-extension C excludes and admits steam into the cylinder A. One end of this extension C is rigidly attached to the end of the cylinder, the other end working as a journal in a suitable bearing on the frame, as shown in the drawings.

The hollow shaft D of the cylinder connects and works in the inner end of the extension C, which allows of the rotation of said shaft while the cylinder remains stationary. This shaft is provided with radial arms *d d*, for agitating the feathers while drying, and perforations are made in it for the admission of steam in the cylinder.

The set-screw *f* in the crank connects the shaft D for the rotation of the cylinder by its bearing against the socket-edge of the journal *r* of the cylinder.

The set-screw *g* secures the cylinder in a stationary position during the movement of the shaft for agitating the feathers while drying.

The cylinder has two longitudinal doors, H, on opposite sides. One of these door-openings has a screen, I, placed under it, so that when the cylinder has been placed in a stationary position for drying, the feathers are agitated by the movement of the shaft and radial arms *d d*. The refuse from the feathers will pass through it into the receptacle *e* under the cylinder. The other door is for the introduction and discharge of the feathers.

After the feathers have been placed in the cylinder for steaming, and the doors closed, steam is admitted by opening the valve G, when the cylinder is rotated until the cleansing action of the steam has accomplished the work. The valve G is then closed, and the cylinder and shaft disconnected by loosening the set-screw *f*. The door H, having the screen I, is opened, and placed over the receptacle *e*, and the other door partially opened to allow a current of air to pass through the cylinder. The shaft D is then rotated, and by the finishing joint action of the surrounding heat from chamber A′, and the agitation and circulation of air through the doors H, the work is effectually and expeditiously accomplished.

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

In combination with the cylinder A, the shaft D, detachable as described, so that the cylinder may be first rotated for steaming the feathers, and then uncoupled from the shaft for agitating and drying the same, by its separate movement, socket-extension C, longitudinal pipes B, extending into the chamber A′, doors H on opposite sides of the cylinder, and screen I, all constructed and operating substantially as shown and described, for the purpose set forth.

Witnesses: THOMAS F. McBRIDE.
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