J. M. CLARK.

Feather-Renovator.

No. 209,230. Patented Oct. 22, 1878.

Fig. 1.

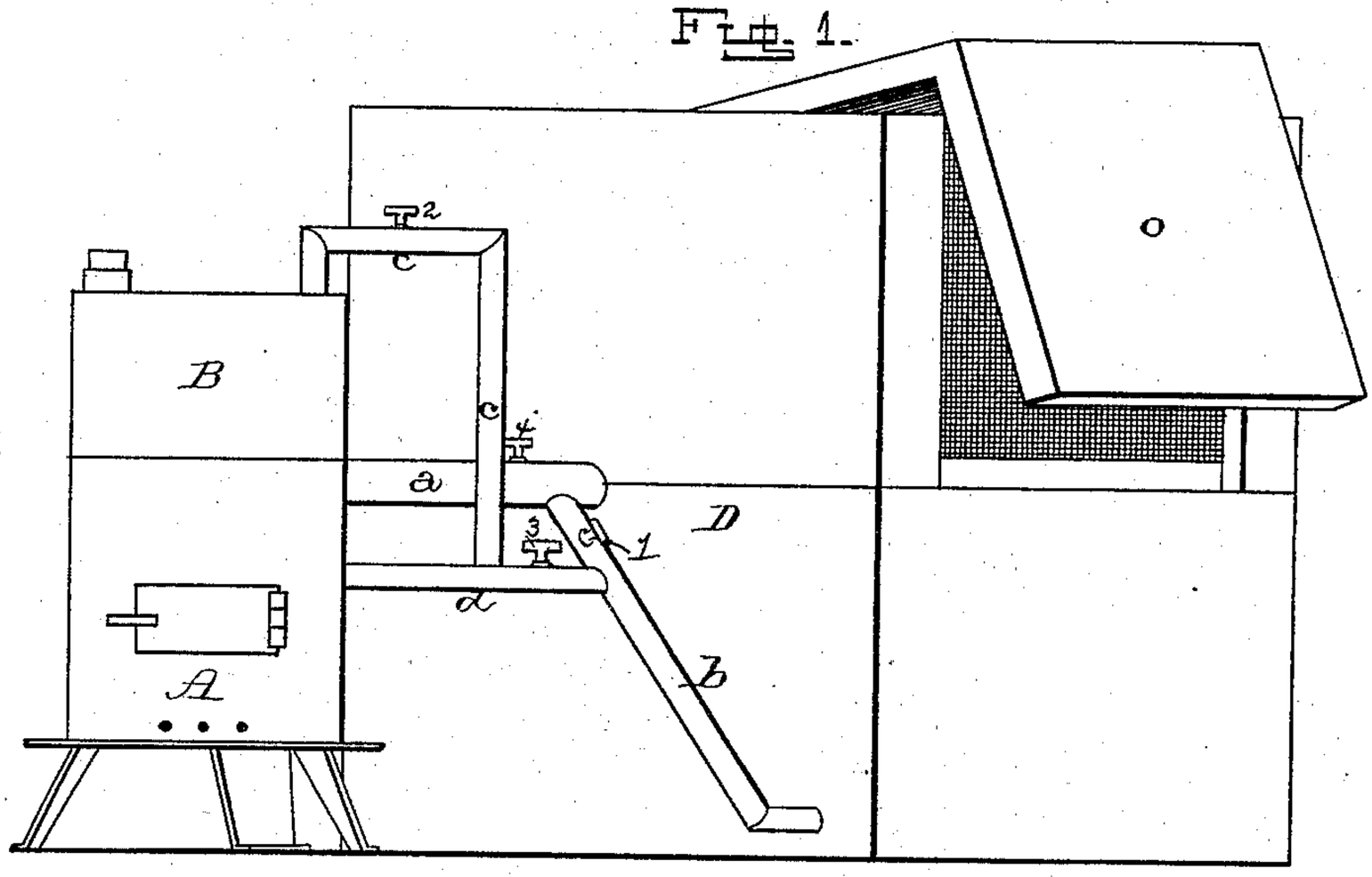


Fig. 2.

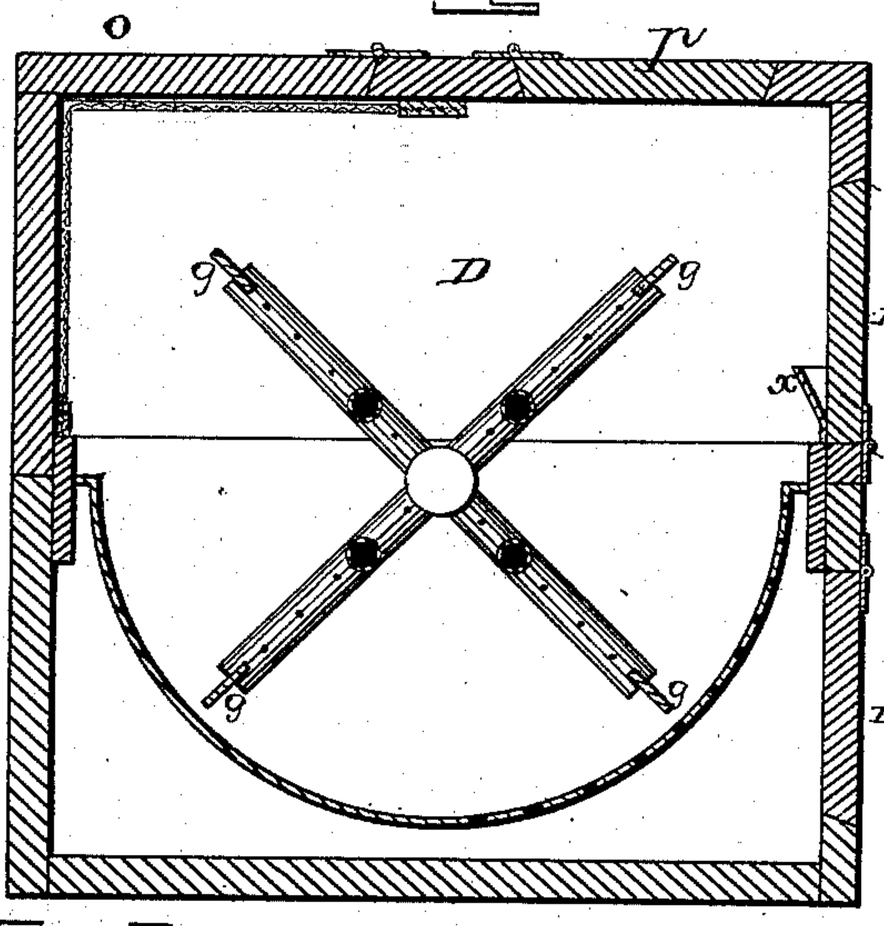


Fig. 3.

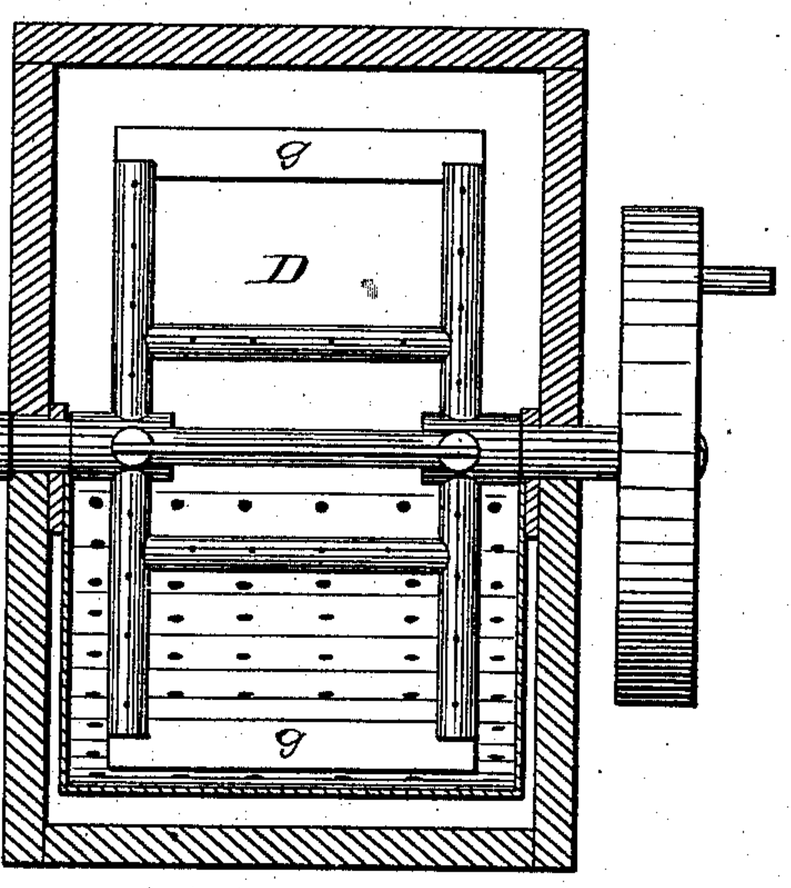


Fig. 6.

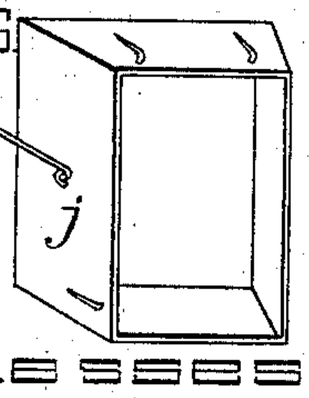


Fig. 4.

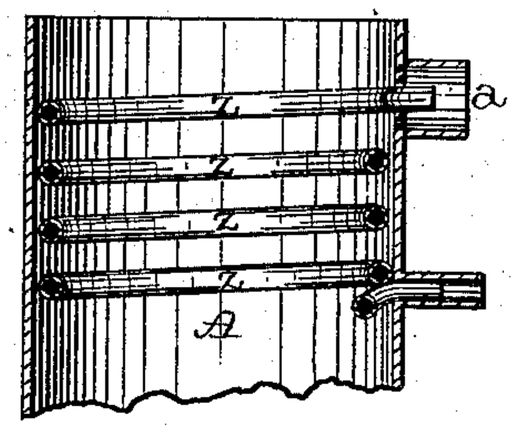
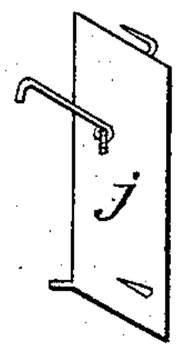


Fig. 5.



Witnesses:

J. W. Garner

A. S. D. Haines.

Inventor:

Jas. M. Clark

per

F. A. Lehmann,

atty.

UNITED STATES PATENT OFFICE.

JAMES M. CLARK, OF NEWCASTLE, PENNSYLVANIA.

IMPROVEMENT IN FEATHER-RENOVATORS.

Specification forming part of Letters Patent No. **209,230,** dated October 22, 1878; application filed July 19, 1878.

To all whom it may concern:

Be it known that I, JAMES M. CLARK, of Newcastle, in the county of Lawrence and State of Pennsylvania, have invented certain new and useful Improvements in Feather-Renovators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in feather-renovators; and it consists in an arrangement and combination of devices, that will be more fully described hereinafter, whereby feathers may be quickly cleansed and then blown back into the tick without having to be handled.

In the accompanying drawing, which forms part of this specification, Figure 1 is a perspective of my invention. Figs. 2 and 3 are sections of the same. Figs. 4, 5, and 6 are detail views.

A represents a furnace, and B a reservoir for water. Over the fire, within the furnace, is a coiled pipe, Z, its upper end communicating by a tube, *a*, with the hollow axis of the agitator within the chest or box D. Over this coiled pipe is the reservoir B for water, from the upper part of which issues the pipe *c*, with a stop-cock, 2, which pipe is connected with another one, *d*, that forms a connection between the lower end of the coiled pipe in the furnace and a pipe, *b*. This latter, *b*, conducts cold air from a blower (not shown) to the aforesaid pipe *d* when not prevented by the stop-cock 3 in this pipe, or to the tube *a* when the stop-cock 1 between the pipe *d* and the tube *a* is open.

The chest D is oblong and of sufficient depth to allow the agitator a free rotary motion. The agitator, journaled in the longer sides of the chest, consists of perforated tubes communicating with its hollow axes. The ends of the arms of the agitator are connected by strips *g*, which, when in motion, stir the feathers and cause the air to pass freely through them. The bottom of the chest is semicircular, and the arms of the agitator sweep over it without coming in contact. Beginning near the middle, under the agitator, and extending upward to the height of the axes, the bottom at one end is perforated by holes, larger under the agitator and smaller as the bottom rises upward, for the escape of dust or dirt shaken from the feathers when undergoing the process of renovating within the chest. On the same end of the chest, behind the dust-holes, is a hinged door, *m*, for the removal of the dust that has been gathered from the feathers, and over this a similar one, *n*, at the inside of which is a pocket, *x*, for the reception of dust, which pocket, when the door is let down, empties itself. In this same opening *n* a screen may be inserted, to give passage for air when required.

The opening *p* on top of the chest is for the introduction of the feathers, and the lid *o*, covering an upper corner of the chest, having a screen underneath, is for the admission of air. The opening *n* serves also the purpose of emptying the chest, and when required to that end a funnel, *j*, provided with hooks or other devices for upholding it at the outside of the opening, is suspended before it, and to this funnel the bed-tick or other receptacle into which the feathers are to be placed is attached. If, then, the lid *o* having been opened, the agitator is set in motion, the feathers are forced through the opening *n* and funnel *j* into the bed-tick on the outside, in the farther end of which a smaller screen has previously been introduced for the passage of air.

The operation of the renovator is as follows: Water being in the reservoir, the fire heats the coil and the water simultaneously. The vapor and steam arising pass through the pipe *c* into *d*, (the stopper 3 being closed,) and thence into the coil. The heated steam admixed with air passes from the coil through the tube *a* into the axis and arms of the agitator, and is emitted into the chest, where it comes in contact with the feathers. The feathers, having been sufficiently stirred in the hot and moist atmosphere, require drying, and to effect this the stop-cocks 2 and 4 are closed, and by turning the blower air is forced through pipes *b* and *d* into the heated coil, and thence through tube *a* into the interior of the chest, where in

a very short time the desired effect is attained. After being dried, in order to cool the feathers before removing them, the stop-cocks 1 and 3 are closed and 4 is opened, the lid *o* is lifted up, and a screen placed in the opening *n*. The cold air forced through pipe *b* and tube *a*, by means of the blower, drives the heated air off, and soon cools the feathers sufficiently to be removed.

Having thus described my invention, I claim—

The combination of the furnace A, reservoir B, pipes *a b c d*, and the coiled pipe Z, substantially as and for the purpose set forth and described.

In testimony that I claim the foregoing I have hereunto set my hand this 10th day of July, 1878.

JAMES M. CLARK.

Witnesses:
T. F. LEHMANN,
JAS. WILSON.