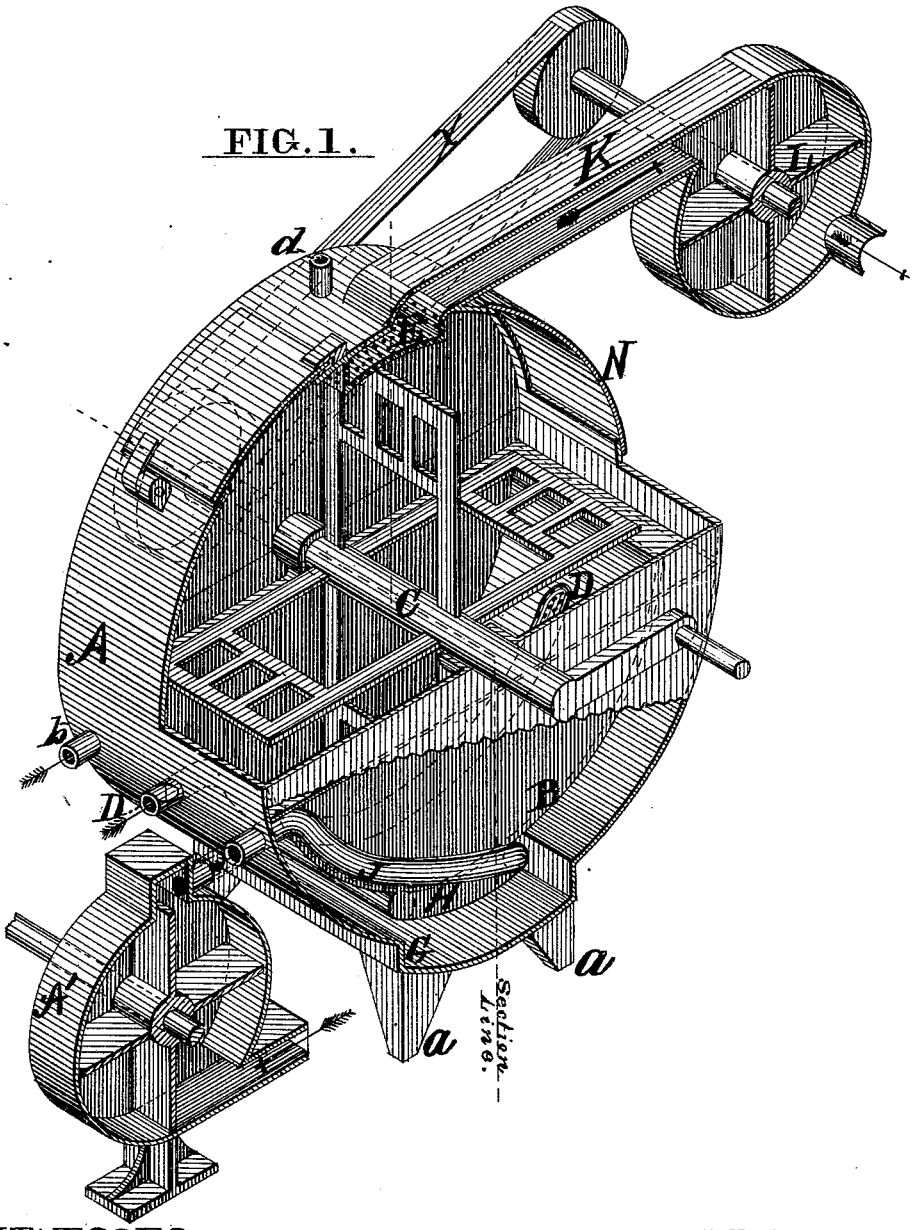
2 Sheets—Sheet 1.

I. L. FISHER.

FEATHER RENOVATING MACHINE.

No. 185,824. Patented Jan. 2, 1877.

FIG. 1.



WITNESSES.

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INVENTOR.

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A. R. K. Pettit

2 Sheets—Sheet 2.

I. L. FISHER.

FEATHER RENOVATING MACHINE.

No. 185,824. Patented Jan. 2, 1877.

FIG. 2.

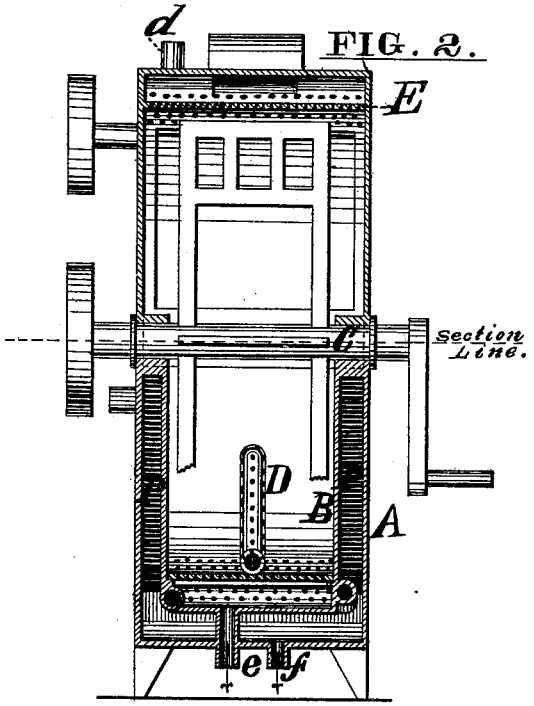


FIG. 5.

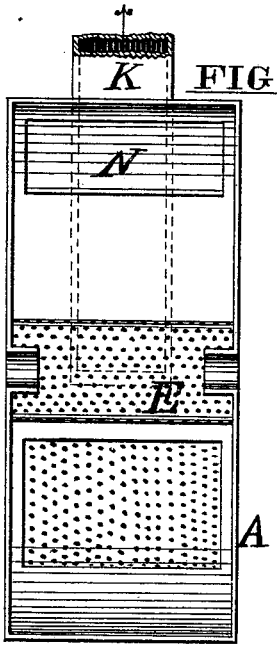


FIG. 3.

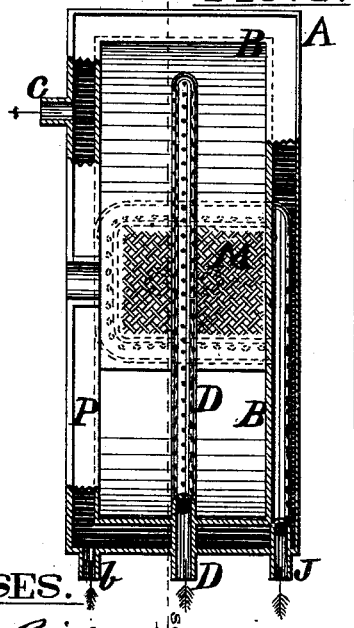
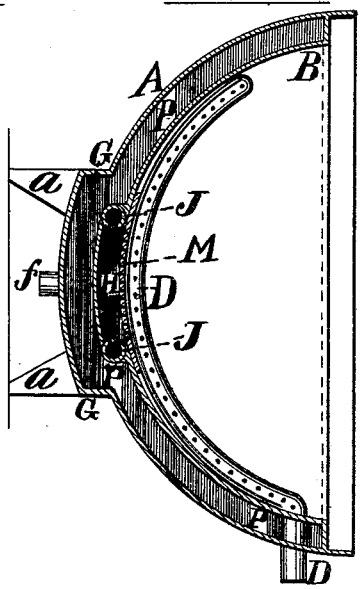


FIG. 4.



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UNITED STATES PATENT OFFICE.

ISAAC L. FISHER, OF HAMILTON, OHIO.

IMPROVEMENT IN FEATHER-RENOVATING MACHINES.

Specification forming part of Letters Patent No. **185,824**, dated January 2, 1877; application filed August 18, 1876.

To all whom it may concern:

Be it known that I, ISAAC L. FISHER, of Hamilton, Butler county, Ohio, have invented a new and useful Improvement in Feather-Renovating Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 represents a perspective view of my machine with portions of the casing removed. Fig. 2 represents a central vertical section. Fig. 3 represents a central horizontal section. Fig. 4 represents a vertical section of the lower half of the machine, taken at the dotted line of Fig. 3. Fig. 5 represents a horizontal section, showing the interior of the upper half of the machine.

My invention consists in an improved construction and arrangement of the steam and air conduits used in combination with the chest or cylinder in which the feathers are steamed, cleansed, and dried, as hereinafter described.

The chest or cylindrical receptacle A is supported upon legs *a*, and its lower half is double, having the interior casing B secured therein, so as to form a steam-tight chamber, P, with which the ingress-pipe *b* and egress-pipe *c* communicate. The perforated pipe D, for injecting the steam from a suitable boiler among the feathers within the chest, is arranged centrally upon the interior casing B, as represented; and an egress-pipe, *d*, communicates with the chest through the intermediate perforated screen E at the top of the machine.

To provide for the passage of currents of air through the machine, the depressions G H are made in both the outer and inner casings A B at the bottom of the machine, and the depression H is covered with perforated sheet metal, through which air will be forced into the chamber in which the feathers are placed, at the proper stage of the work, for drying and carrying off dust and impurities. The air-induction pipe J enters the steam-drying chamber P between the casings A B, and passes into the depression H, under screen M, and around its sides, as indicated by the dotted lines in Fig. 3, and as that portion of pipe J which enters the division H is perforated, the air will be distributed, and pass up through screen M into the chamber in which the feathers are placed for cleansing.

The crank-shaft C is armed with beaters for agitating the feathers during the steaming and drying operation.

A drum connected by a trunk, K, with the division at the top of the machine, formed by the perforated partition E, is provided with a fan or blower, L, for drawing air through the machine.

Instead of the fan at the top of the machine, a fan or blower, A′, may be used in connection with the air-induction pipe J, which will force air through the perforations in plate M, thence up through the body of feathers in the machine, and thence out through perforated partition E and the egress-pipe *d*.

By the use of either of the blowers air will be driven through the machine for drying the feathers and separating and conducting away the dust and impurities which are commingled with the feathers, and which have become detached therefrom by the steaming, beating, and drying operations.

By the use of my improved apparatus for renovating feathers it is apparent that they may be disinfected by fumigation.

In using my machine the pipes *b* D will be connected with a steam-boiler, each having a stop-cock to regulate the admission of steam. In the first place, after the feathers are introduced through a door, N, the air ingress and egress and the steam-induction pipe *b* will be closed, while the steam is admitted among the feathers through perforated tube D, during which time the revolutions of the shaft C with its beaters will cause a thorough agitation of the feathers, and the steam will find its exit through pipe *d*. After the feathers have been acted upon by the steam sufficiently the ingress-pipe D will be closed, and, as the condensation of the steam progresses within, steam will be admitted through pipe *b* into the drying-chamber P, which surrounds the lower half of the feather receptacle or cylinder.

Suitable pipes for drippings, as indicated at *e f*, are connected, respectively, with the division H and the drying-chamber P. These pipes, as well as the air and steam induction and eduction apertures, must have suitable

cut-off slides or cocks to properly regulate the work.

To facilitate the drying of the feathers while the beaters are in agitation and the chamber P is charged with a flow of steam, the belt X X will be placed upon its pulleys to set the fan in motion to cause the air to be drawn through the body of feathers, as herein specified; and as the air is forced up through the perforated plate M, that is over division H, it will be diffused thoroughly among the feathers, and greatly facilitate the process of drying them, and at the same time completely cleanse them from offensive odors and impurities.

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

In the feather-renovating machine provided with the drying-chamber P, air-division H, and partition E, the combination of the steam and air conduits *b*, *c*, D, *d*, and J, substantially as and for the purpose described.

ISAAC L. FISHER.

Witnesses:

LAURA A. M. DAVIDSON,

JOHN M. DAVIDSON.