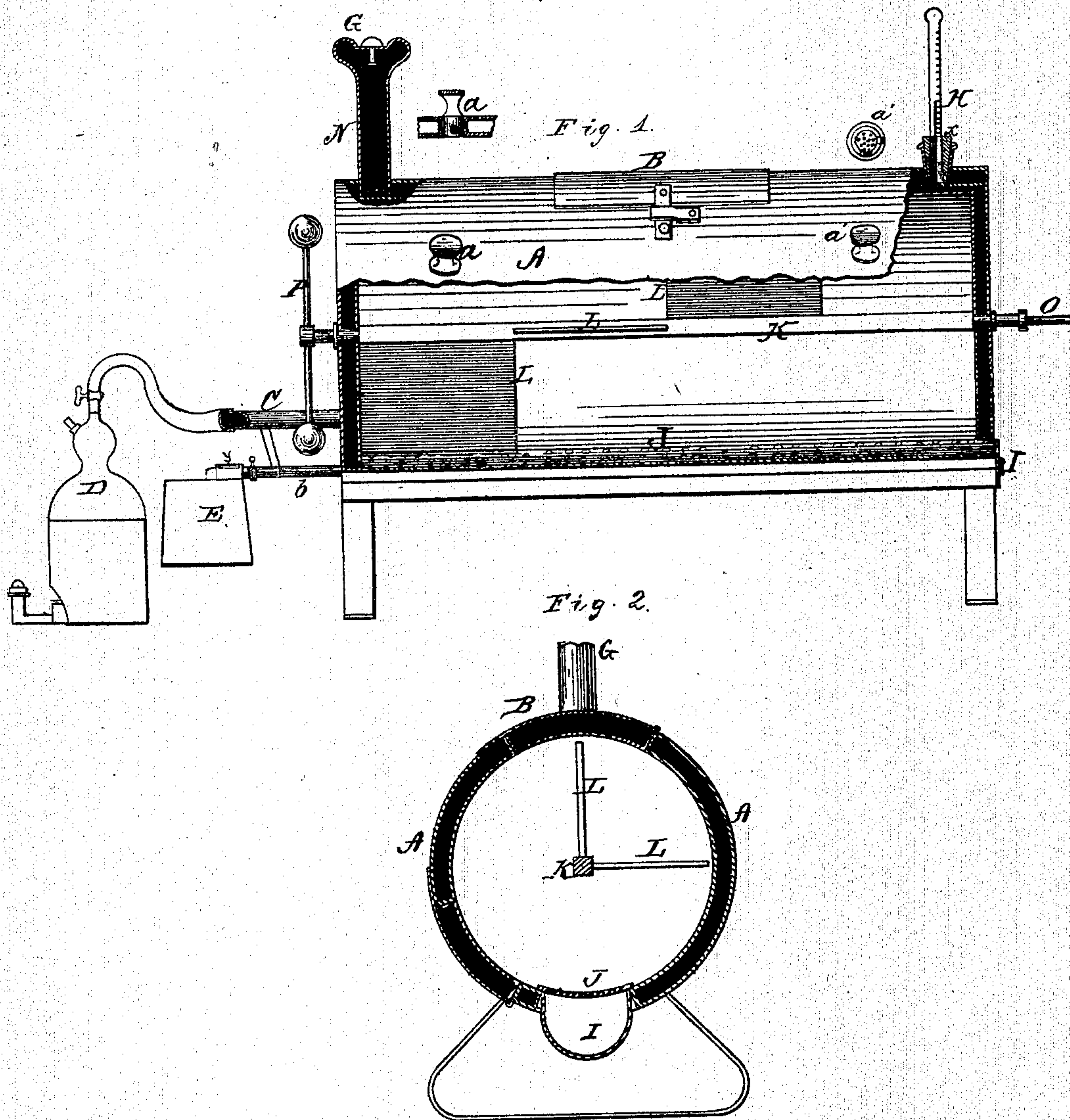


2 Sheets--Sheet 1.

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Feather-Renovators.

No. 139,211.

Patented May 20, 1873.



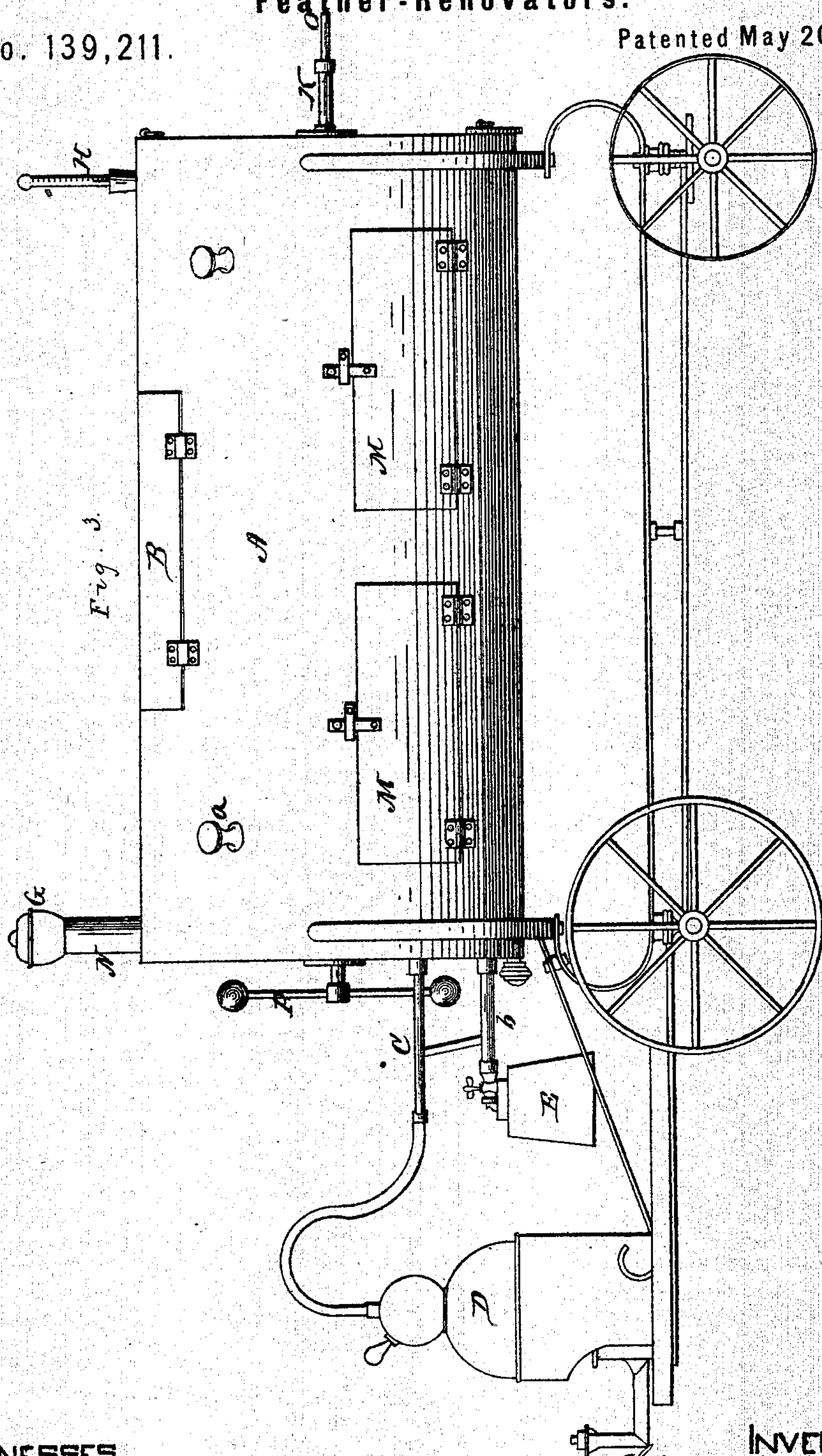
WITNESSES.
John A. Ellis
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UNITED STATES PATENT OFFICE

SOLOMON G. THANHAUSER, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN FEATHER-RENOVATORS.

Specification forming part of Letters Patent No. **139,211**, dated May 20, 1873; application filed February 21, 1873.

To all whom it may concern:

Be it known that I, SOLOMON G. THANHAUSER, of Baltimore, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Feather-Renovator; and I do hereby declare that the following is a full, clear, and exact description thereof, that will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing and to the letters of reference marked thereon, which form a part of this specification.

The nature of this invention consists in the construction and arrangement of a machine for renovating feathers with a boiler and condensed-water tank, to be mounted on wheels or not, as may be desired.

In order to enable others skilled in the art to which this invention appertains to make and use the same, its construction and operation will now be described, referring to the annexed drawing, in which—

Figure 1 is a longitudinal vertical section of the machine, with a side view of the boiler and tank. Fig. 2 is a transverse vertical section, of the machine, and Fig. 3 represents the entire machine with the boiler and tank mounted on wheels.

A represents a hollow cylindrical vessel, placed horizontally upon suitable supports and provided with a door, B, on top, as well as with one or more doors, M, on one side near the bottom, these latter doors opening downward, so as to form, as it were, an incline outward from the bottom of the vessel. The feathers to be cleaned or renovated are placed in the cylinder through the door B, and after the operation is completed the door M is opened, when the feathers are thrown out by the interior revolving wings onto a suitable cloth spread for their reception. The entire cylinder A, including the doors B and M, is made double, forming a space or chamber on all sides around the interior chamber where the feathers are, into which space or chamber steam is admitted through the pipe C. This pipe has two branches leading into both sides of the cylinder, and suitable openings are made in the edges of the doors B and M, with corresponding openings in the shell of the cyl-

inder, so that when the doors are closed the steam will circulate freely around all parts of the chamber where the feathers are, except that part occupied by the dirt-drawer, hereinafter described.

In the operation of renovating or cleaning feathers it is often, in fact, almost always, necessary to dampen the feathers more or less, and to accomplish this there are valves made in the shell of the cylinder A, so that, when desired, steam may be allowed to pass from the shell into the interior chamber. Such valves may be constructed as a common faucet, as shown at *a*, or with a perforated disk, as shown at *a'*, or in any other suitable manner to accomplish the object desired. Steam is generated in a suitable boiler, D, having a furnace underneath, and the boiler is, by a flexible tube, connected with the steam-inlet pipe C. The connection between this pipe and the flexible tube may be by a screw collar or sleeve, or other suitable device that can be readily connected and disconnected, as occasion may require. Through the shell of the cylinder A, at any suitable point, is made a tube or passage, in which is inserted a collar or sleeve, *x*, made of any suitable non-conducting material, and through the same is passed a thermometer, H, for the purpose of showing to the operator at all times the state of the temperature in the interior chamber of the cylinder. This is of great importance, as otherwise the feathers might become injured by excessive heat from the surrounding steam, or not get heated enough to thoroughly cleanse and renovate them; but, with the thermometer before him, the operator knows exactly the state of the temperature, and can readily regulate the same by a suitable stop-cock in the steam-inlet pipe. To guard against any accident by too great a pressure of steam in the cylinder-shell, a dome, N, is attached, with a safety-valve, G, constructed in any of the known and usual ways, and this valve, being regulated to a certain pressure, will open whenever the pressure exceeds this amount, and allow the steam to escape until it is reduced. From each side of the cylinder-shell, near or at the bottom, leads a branch of a pipe, *b*, to the outer end of which is, by a slide, *y*, attached a tank, E, for the purpose of carrying off the

water condensed from the steam in the cylinder-shell. The pipe *b* is provided with a suitable stop-cock. The water from which the steam is generated may thus be used over and over again. In the bottom of the cylinder *A* is a drawer, *I*, with a perforated cover, *J*, into which drawer all the dirt from the feathers is collected, and when the process of cleaning them is completed this drawer is removed and the dirt emptied. That portion of the cylinder-shell occupied by the dirt-drawer *I* is the only part where there is no steam. The feathers are agitated and kept in motion within the cylinder *A* by means of a series of wings, *L L*, set at varying angles on a central horizontal shaft, *K*, which passes longitudinally through the cylinder and through suitable stuffing-boxes in the heads of the same. On one end of the shaft *K* is a crank or handle, *O*, by means of which it is revolved, and on the other end is a balance-wheel, *P*. The entire machine thus constructed, with its boiler and tank, may be mounted on wheels, as shown in Fig. 3, and thus be easily taken from place to place where it may be desired to have feathers renovated.

Having thus fully described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In combination with the hollow cylinder *A*, the shell extending around its entire surface, the revolving shaft *K*, with wings *L L*, and valves *a* and *a'*, substantially as and for the purpose specified.

2. The hollow double-shell cylinder *A*, provided with doors *B M*, valves *a G*, and thermometer *H*, substantially as and for the purposes herein set forth.

3. The hollow cylinder *A*, with the shell extending around its entire surface, the valves *a a'*, pipes *C* and *b*, and the perforated bottom *J*, the several parts being constructed and arranged as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand this 21st day of February, 1873.

SOLOMON G. THANHAUSER.

Witnesses:

JOHN A. ELLIS,
WM. K. ELLIS.