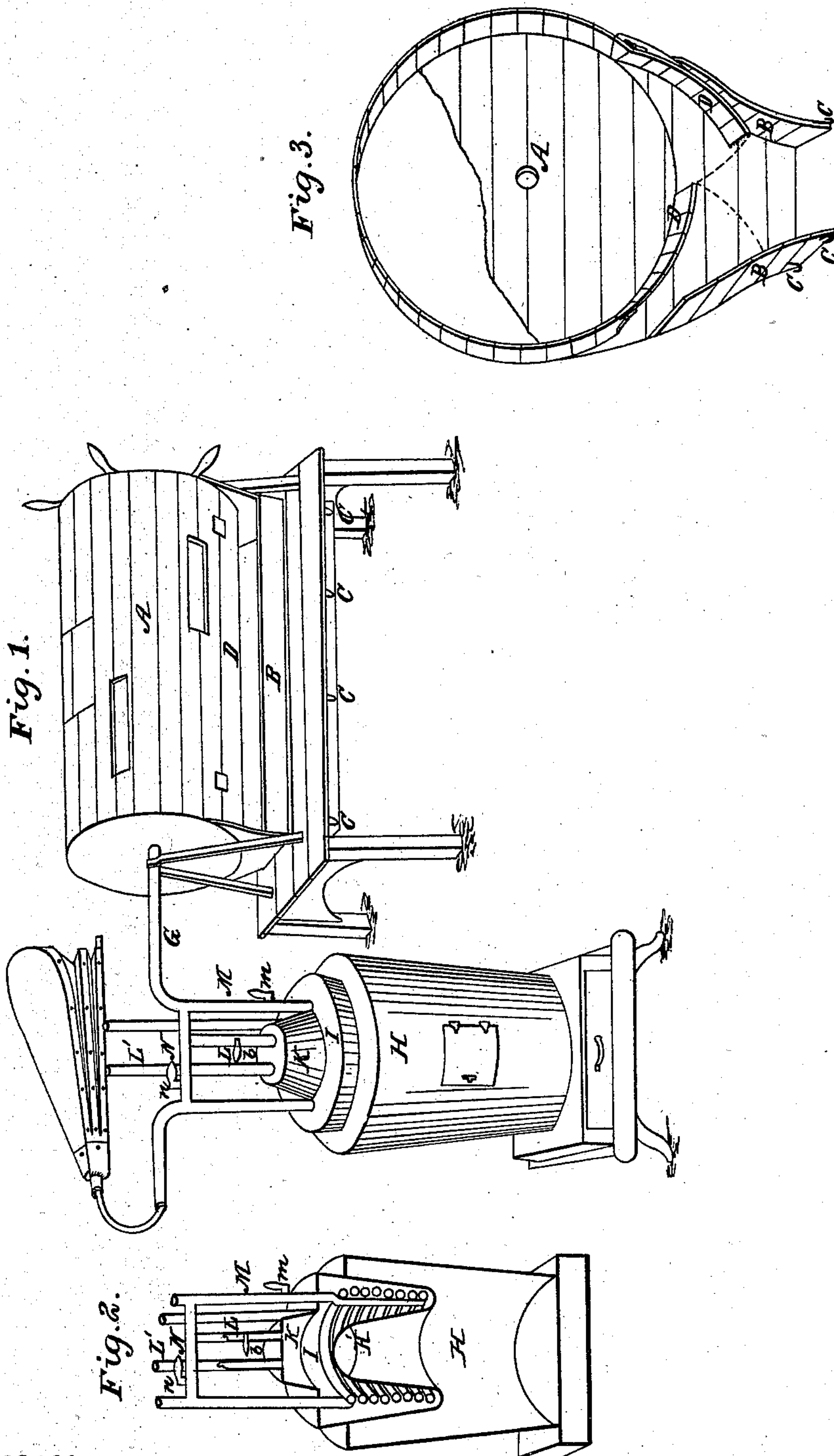


L. BLAIR.
Feather Renovator.

No. 87,534.

Patented March 9, 1869.



Witnesses:
Wm. Pettingall
Andrew Walker

Inventor:
Lafayette Blair

UNITED STATES PATENT OFFICE.

LA FAYETTE BLAIR, OF PAINESVILLE, OHIO.

IMPROVEMENT IN FEATHER-RENOVATORS.

Specification forming part of Letters Patent No. 87,534, dated March 9, 1869.

To all whom it may concern:

Be it known that I, LA FAYETTE BLAIR, of Painesville, in the county of Lake and State of Ohio, have invented certain Improvements in Feather-Renovators; and I do hereby declare the following is a full and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings and letters of reference marked thereon, in which—

Figure I is a perspective view of the apparatus in position for working. A is the feather-receiver; B, hopper; C, suspension-hooks; D, drop-doors; G, inlet steam-pipe to feather-receiver; H, furnace; I, boiler; K, steam-chest; L, steam outlet-pipe; L', escape-pipe; M, hot-blast pipe; N, cold-blast pipe.

Fig. II is a transverse section, showing the interior of the boiler and furnace; H, furnace; H', dome-shaped top to furnace; I, boiler; J, coiled air-pipes in boiler; L, outlet steam-pipe; L', escape-pipe; M, hot-blast pipe; N, cold-blast pipe.

Fig. III, A is a transverse section of feather-receiver, showing the hopper B, drop-doors D, and suspension-hooks C.

The letters of reference indicate similar parts in all the figures.

The improvements herein referred to consist, first, of the employment of the cylinder A, with a hopper attachment, B, and the suspension-hooks C, drop-doors D, steam-inlet pipe G; second, a steam generating and heating device, of which H is the furnace, with the dome-shaped top H'. I is a water chamber or boiler; K, steam-chest; L, outlet steam-pipe; L', escape-pipe; M, the hot-blast, and N the cold-blast, pipes. V are the bellows, and Z the pipe, connecting the same with tube R.

In my arrangement the feathers are retained in the receiver through all the processes—steaming, drying, and cooling them. When the process is completed, the tick or bed is hung or fastened to the hopper-shaped opening by the hooks C. The drop-doors D are then opened, as is also the door *x* on the top. Through the latter opening is inserted a broom

or any suitable device, and such of the feathers as remain in the cylinder—for the bulk of them drops out—are brushed or worked into the tick. The feathers are placed in the cylinder by cutting open the tick, and placing it in the opening *x* in the cylinder, and shaking them out. Steam is then let on, and the cylinder rapidly revolved until the feathers are sufficiently steamed. Steam is then shut off, and the heated air-blast introduced until the feathers are thoroughly dried. The hot blast is then shut off, and in its place a cold blast is used to cool them. When cooled they are dropped through the doors into the tick. The hot blast is furnished by a pipe coiled or otherwise placed in the steam-boiler, the end of the pipe R having a bellows or other device attached to it to force a current of air through the pipe thus placed in the water of the boiler; then let into the feather-cylinder.

Air heated by means of water never becomes hot enough to burn the feathers. When heated otherwise, if great care is not used they are apt to be burned.

The cold blast is furnished by shutting off the hot-air pipe at M', and opening the cold-blast pipe at N', the cold air being forced through the pipe by the bellows or other device, effectually cooling the feathers. All the pipes are connected together. The steam is admitted through the steam-pipe L, by opening the stop-cock *b*. The stop-cock *m* in hot-blast pipe M is closed; also the stop-cock *n* in cold-blast pipe N is closed, forcing the steam through the steam inlet-pipe G into the feather-receiver. After the feathers are steamed, the stop-cock *b* in steam-pipe L is closed, the stop-cock *m* in hot-blast pipe M is opened, and the hot blast is forced into the feathers, drying them.

To cool the feathers, the stop-cock *m* is closed in hot-blast pipe M, and the stop-cock *n*, in cold-blast pipe N, is opened, allowing the cold blast to pass through inlet-pipe G into the feather-receiver A, thus making a convenient and economical attachment.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A cylinder or feather-receiver with the

hopper attachment B, the hooks C, and the drop-doors D.

2. In combination, with the coiled tube J, the boiler I, whereby the air is heated before being conveyed to the feathers, as set forth.

3. The arrangement of devices herein shown, or equivalent means, for introducing among the feathers a current of air heated by boiling water, as and for the purpose set forth.

4. The arrangement, as herein shown and described, or in any equivalent manner, of a bellows or other suitable device for forcing a

blast of heated air among the feathers, when said bellows or equivalent is situated outside of the heating-chamber, as set forth.

5. The dome-shaped top H' of the furnace, in combination with the water-boiler K, the whole arranged, constructed, and combined, and used in combination with, and for the purpose specified.

LA FAYETTE BLAIR.

Witnesses:

WM. PETTINGELL,
J. N. DOWNER.