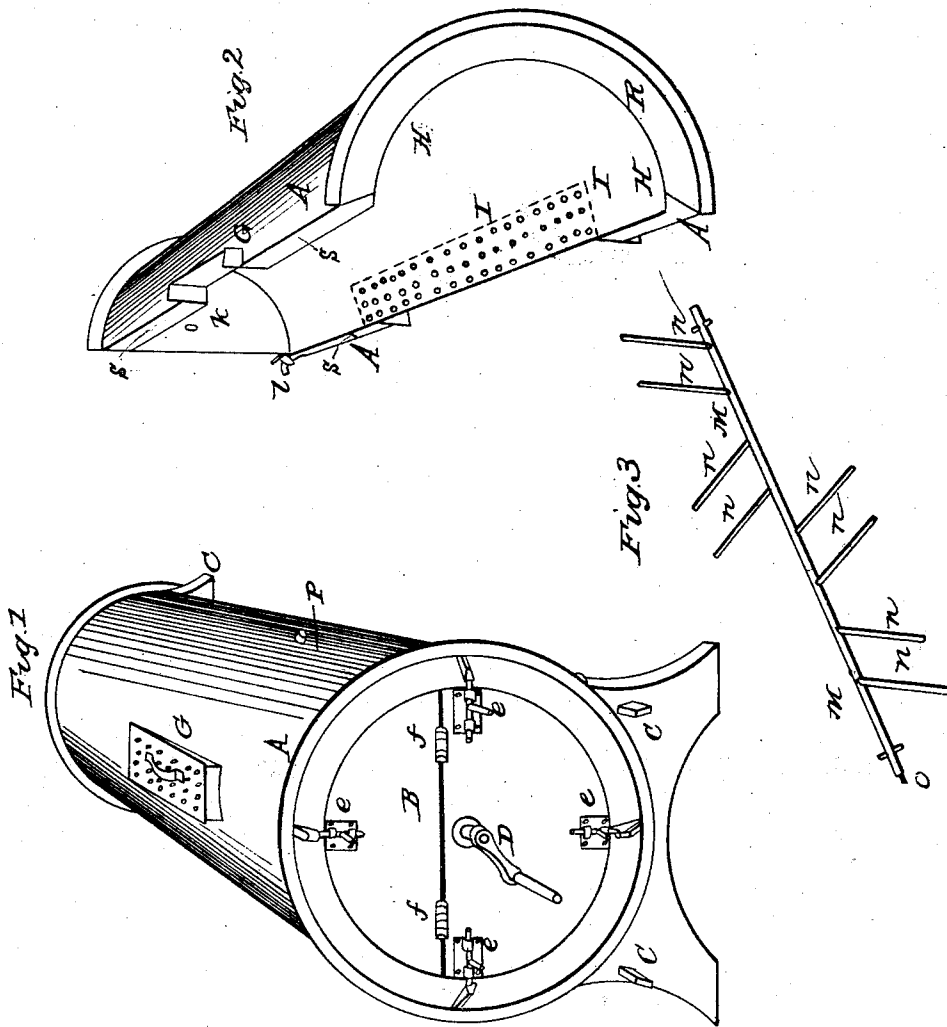


S. G. LADD.  
Feather Renovator.

No. 939.

Patented Sept. 22, 1838.



Witnesses  
J. E. Germain  
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Inventor  
Sam. G. Ladd

# UNITED STATES PATENT OFFICE.

SAMUEL G. LADD, OF HALLOWELL, MAINE.

## MACHINE FOR CLEANING AND PURIFYING FEATHERS.

Specification of Letters Patent No. 939, dated September 22, 1838.

*To all whom it may concern:*

Be it known that I, SAMUEL G. LADD, of Hallowell, in the county of Kennebec and State of Maine, have invented a new and useful Improvement in Machines for Purifying Feathers and Cleansing the Same, and I do hereby declare the following is a full and exact description, viz:

The nature of my improvement consists in having a double horizontal cylinder, the outer one made of wood, copper, tin, or other metal, and the inner one may be made of sheet iron or other metal. The inner and smaller cylinder is placed at equal distance from the outer, so as to have say from four to five inches space between them,—one end of these cylinders is closed by a head made of metal affixed to each by soldering or otherwise, so as to be steam tight. The space or chamber between the two cylinders at the other end, is also closed by a metal rim or finish, also attached to each cylinder, so as to be steam tight. An oblong opening is made lengthwise under the lower or bottom part of the outer cylinder; and immediately above it, the inner cylinder is perforated with small holes. Around this opening, and between the two cylinders is a metallic finish, connecting the two cylinders, and made tight as the others. On the top of the two cylinders is another oblong opening. This opening passes through both cylinders into the interior or body of the machine. Around the opening is also a finish connecting the two cylinders tightly as the other. The space between the two cylinders thus form a completely steam tight chamber. To the opening on the top of the cylinder is fitted two covers, one of them is perforated with holes, the other is tight, these are used alternately, as occasion may require. A movable head or cover made of wood is fitted to the open end of the inner cylinder, and is secured to it by four bolts attached to the cover or head, and pushing into fastenings on the end of the cylinder. About one third of this head or cover is made to open and turn back on hinges. At the bottom of the metal head of the cylinder is a stop cock, communicating with the space or chamber between them, and midway from the bottom to the top of the same head, is a small hole communicating with the interior of the machine, or main body of the machine, where the feathers are put. Through

the center of the two heads a shaft passes, this shaft has arms or prongs attached to it, and also a crank on the wooden head ends.

*Mode of operation.*—Having inserted my shaft and closed and secured the wooden or movable head, I put the feathers into the machine through the opening in the top, and put on the perforated cover; I then let steam from a generator, or some apparatus for the purpose, into the small hole in the side of the outer cylinder, this fills the space between the two, and by its heat drives off any moisture that may be in the feathers; at the same time by turning the shaft and agitating the feathers, all dirt or dust is separated from them, and driven off through the perforations or sieve at the bottom. The dirt is thus prevented from adhering to the sides of the cylinder, it is caught by a movable box placed beneath, and thrown away. After thus heating and dusting them for a sufficient time, I remove the perforated top and put on the tight one, and let steam into the inner cylinder among the feathers, through the hole in the metallic end of the cylinder, until they are sufficiently moistened. I then shut off the steam in this place, and continue it into the space or steam chamber through the tube in the side, and turn the shaft till the feathers are dry. I then take the movable head, and the shaft at the same time, also the feathers into a box, and when cool pack them. In order to renew the steam, as well as to draw off the condensed steam in the chamber, I have recourse to the stop cock at the bottom of the cylinder in the mutual head.

For a more particular description, reference must be had to the accompanying drawings.

Figure 1 is a perspective view of the machine. A, is the cylinder about five feet long. The outer cylinder is about four feet diameter, the inner one about three feet four inches diameter. B, the movable head of wood or metal. C, the frame upon which the cylinder rests. D, the crank by which the shaft that agitates the feathers is turned. e, e, e, the bolts by which the movable head is fastened to the cylinder. f, f, two hinges which allow a part of the movable head to be turned back in order to examine the feathers within. G, the oblong opening on the top of the cylinder to admit the feathers, showing the perforated cover put on while dry-

ing the feathers after steaming. P, the orifice leading into the chamber between the cylinders to let in the steam.

Fig. 2 represents a longitudinal section of the cylinder, the movable head taken out. A, A, the outer cylinder. G, the oblong opening at the top to receive the feathers. H, H, the inner cylinder. I, I, the perforations, sieve or screen, at the bottom of the cylinder to allow the dust to pass off. R, the finish or rim connecting the two cylinders. S, S, S, S, the space or chamber between the cylinders into which the same is received during the operation of heating and drying the feathers. *l*, the orifice through which the steam is admitted among the feathers to moisten and purify them. *l*, the stop cock which is used to draw off the condensed steam.

Fig. 3, represents the shaft which passes

through the cylinder for stirring up or agitating the feathers. M, M, the main shaft. *n, n*, prongs or arms projecting from the main shaft. *o*, a screw on the end of the shaft, for retaining the crank D. 25

What I specifically claim as my improvement, and for which I ask Letters Patent is—  
The movable head applied, used and constructed substantially as herein described, by removing which I am enabled to cool and receive the feathers after the operation of cleansing is over. 30

In testimony that the within is a true specification of my said improvement, I have hereunto set my hand this eighth day of September 1838. 35

SAMUEL G. LADD.

Witnesses:

PAUL STICKNEY,  
S. K. GILMAN.