J. W. HOWLETT.

Feather Renovator.

No. 25,647. Patented Oct. 4, 1859.

Fig. 1.

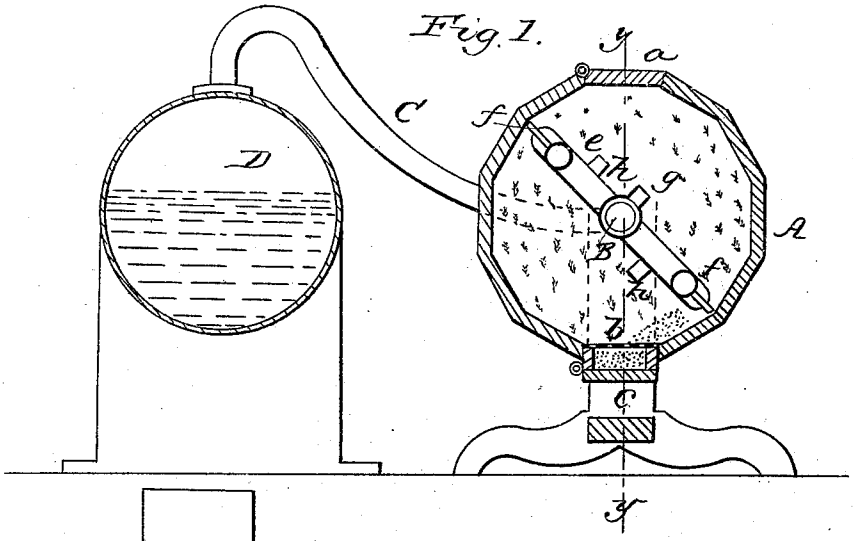
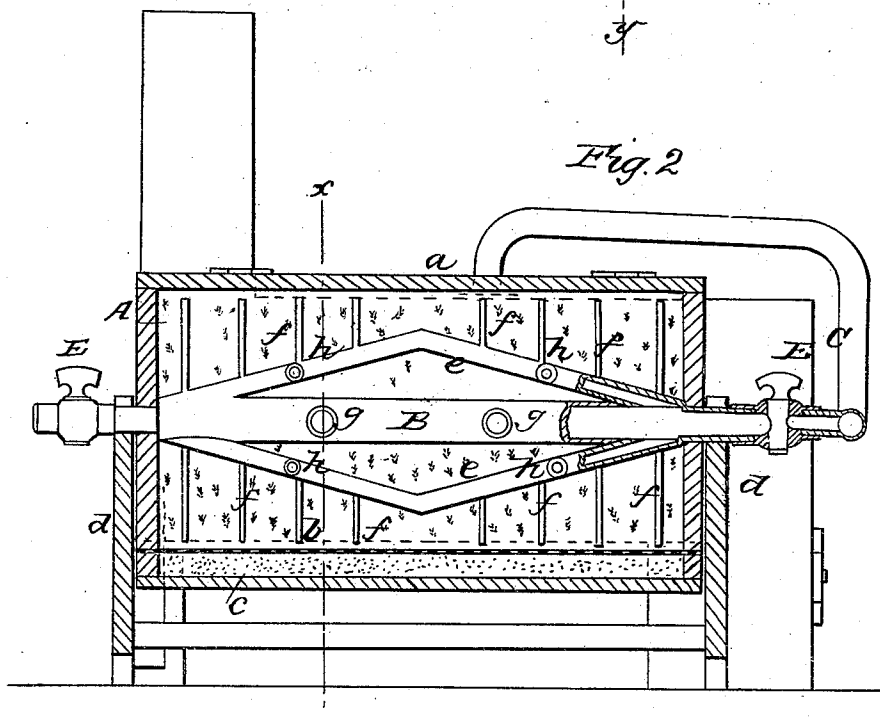


Fig. 2



WITNESSES

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INVENTOR

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J. W. HOWLETT, OF GREENSBORO, NORTH CAROLINA.

MODE OF DISINFECTING FEATHERS.

Specification of Letters Patent No. 25,647, dated October 4, 1859.

To all whom it may concern:

Be it known that I, J. W. HOWLETT, of Greensboro, in the county of Guilford and State of North Carolina, have invented a new and Improved Means for Disinfecting Feathers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing, making a part of this specification, in which—

Figure 1, shows a vertical section of the mechanism used for effecting the object, taken in the line *x*, *x*, Fig. 2. Fig. 2, shows a longitudinal vertical section of ditto, taken in the line *y*, *y*, Fig. 1.

Similar letters of reference indicate corresponding parts in the two figures.

This invention consists in disinfecting feathers by placing the same within a suitable retort into which a combination of steam and chlorin gas is injected. The steam and chlorin gas being generated in a suitable boiler containing water and chlorid of lime or other substance or substances which would generate chlorin gas, and the whole arranged as hereinafter fully described, whereby the desired work may be thoroughly and expeditiously performed.

To enable those skilled in the art to fully understand and apply my invention I will proceed to describe it.

A, represents a steam boiler which may be constructed in any of the known ways, and B, is a pipe leading therefrom and communicating with a pipe C, on which a cylindrical retort D, is placed and allowed to turn freely. This retort D, may be of wood and of any suitable or desired size. The retort D, is provided with two doors *a*, *b*, at opposite sides of it, and the door *b*, when closed covers a wire screen *c*. The doors *a*, *b*, and also the screen *c*, extend the whole length of the retort. The pipe C, within the retort D, has tubes *d*, connected to and communicates with it, and to these tubes *d*, rods *e*, are attached. The pipes C, and also the tubes *d*, are perforated as shown at *f*. The pipe B, near its junction with the pipe C, is provided with a faucet *g*, and the pipe C, near its end is provided with a faucet E.

The operation is as follows. The boiler A, is supplied with water and chlorid of lime or other substance or substances from which chlorin gas is generated or evolved by heat. The chlorin gas combines readily with the steam, having an affinity for it, and the steam and gas enter the retort D, through the pipe B. The retort D, which contains the feathers to be disinfected may be rotated by any proper means so that the whole mass may be exposed to the action of the steam and gas which will be allowed to permeate through them. The steam serves as an efficient vehicle for the gas and causes it to act much more efficiently than if used alone. In the latter case the gas would require to be injected into the retort under pressure, thereby involving considerable expense in constructing an apparatus which would not be as efficient as the one herein described. After the feathers are fully acted upon by the gas, the steam and gas are cut off from the retort by turning the faucet *g*, the door *b*, is opened and the retort rotated until the whole mass of feathers within is perfectly dry.

Either the retort D, may be made to rotate on the pipe C, with its tubes *d*, and rods *e*, the latter serving as beaters, or both may rotate, as desired.

Among the advantages to be derived from my improvement are the following: 1st. The steam and gas being applied hot, through the bulk of the feathers by means of the valves in the cylinder and arms, every portion of the feathers is acted upon equally by the steam and gas in combination and they do not become saturated with water as is the case in Knowlton's plan, nor is the lime left upon the feathers, as is the case when a solution chlorid of lime is used. 2nd. The feathers not being as wet as in Knowlton's plan, and the whole apparatus being hot, when the valves are closed, and the steam and gas shut off, they may be dried and made perfectly light in a very short time. 3rd. The feathers being placed immediately into the steam chest, from the bed, the operation can commence immediately, it being more expeditious and cleanly than Knowlton's plan and there can be no loss of feathers. The gas can be generated separately, or suitable substances (chlorid of lime for instance,) placed in the boiler with the water for generating the gas and steam at the same time, but I claim the direct ap-

plication of chlorin gas and steam in combination to the feathers. The feathers being perfectly cleansed from all dust and foreign substances, before they are wet by the steam it is clear that when they are dried no dirt can remain, but in Knowlton's plan, he wets the feathers with a solution of chlorid of lime, without first cleansing them; it is certain that when they are dried the dirt will still remain.

I do not claim broadly the employment or use of chlorin gas as a disinfectant, neither do I claim separately the boiler and retort, but

I do claim as new and desire to secure by Letters Patent,

The injection of combined steam and chlorin gas among the feathers, substantially as herein shown and described.

J. W. HOWLETT.

Witnesses:
JOHN F. HOWLETT,
W. D. NOTTER.