

(No Model.)

2 Sheets—Sheet 1.

F. W. PROFFEN.
FEATHER RENOVATOR.

No. 249,395.

Patented Nov. 8, 1881.

Fig: 1.

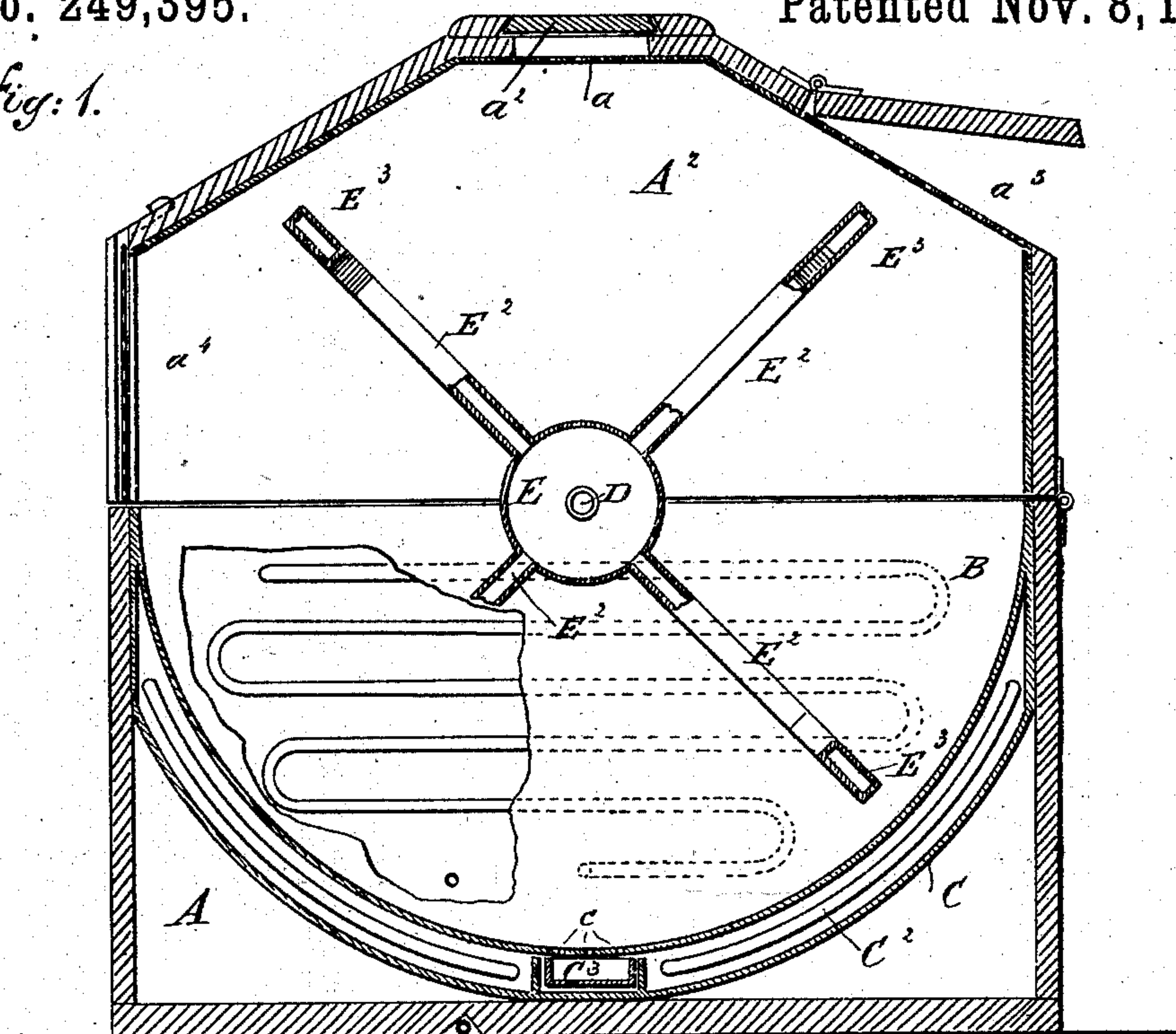
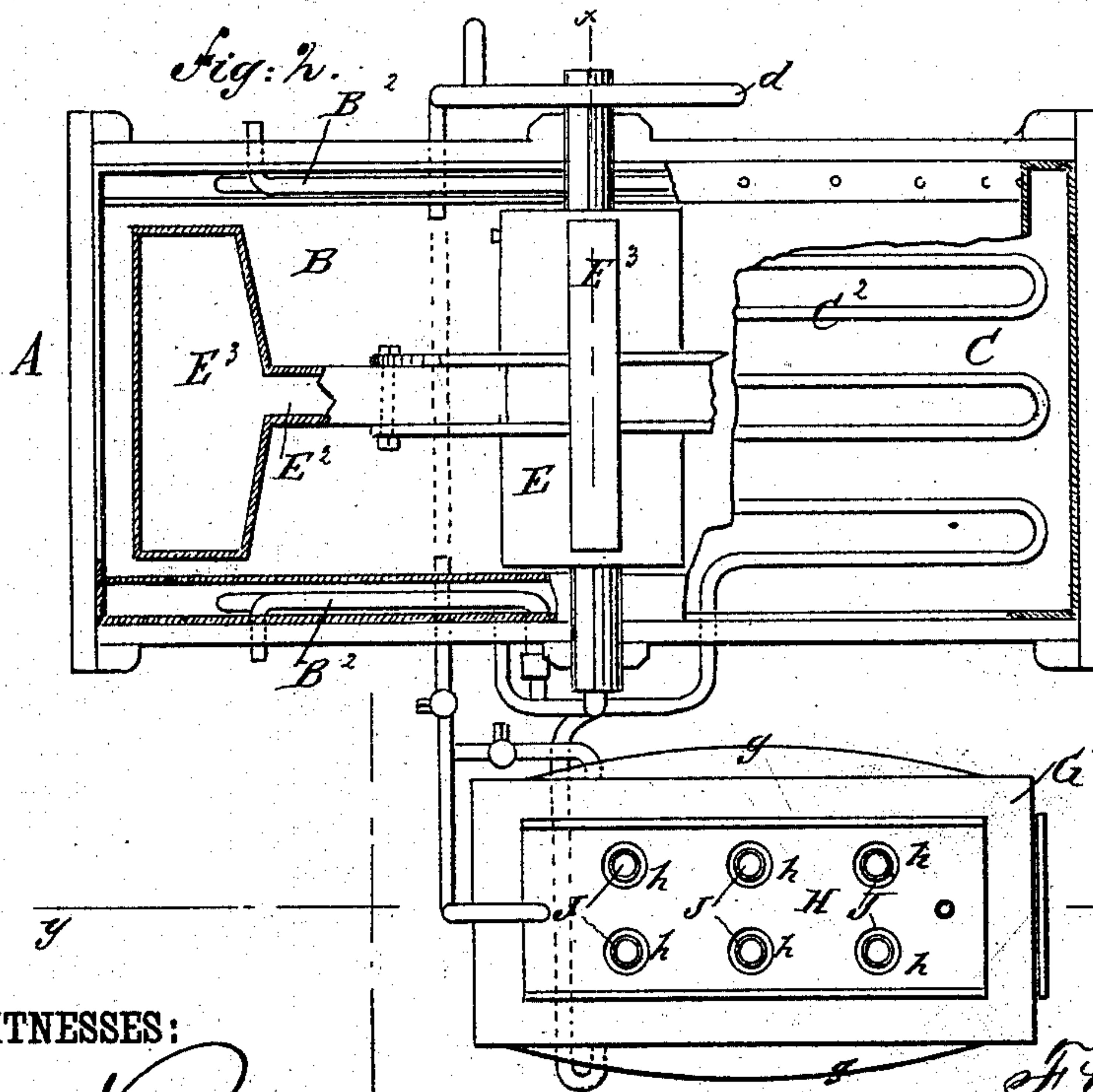


Fig: h.



WITNESSES:

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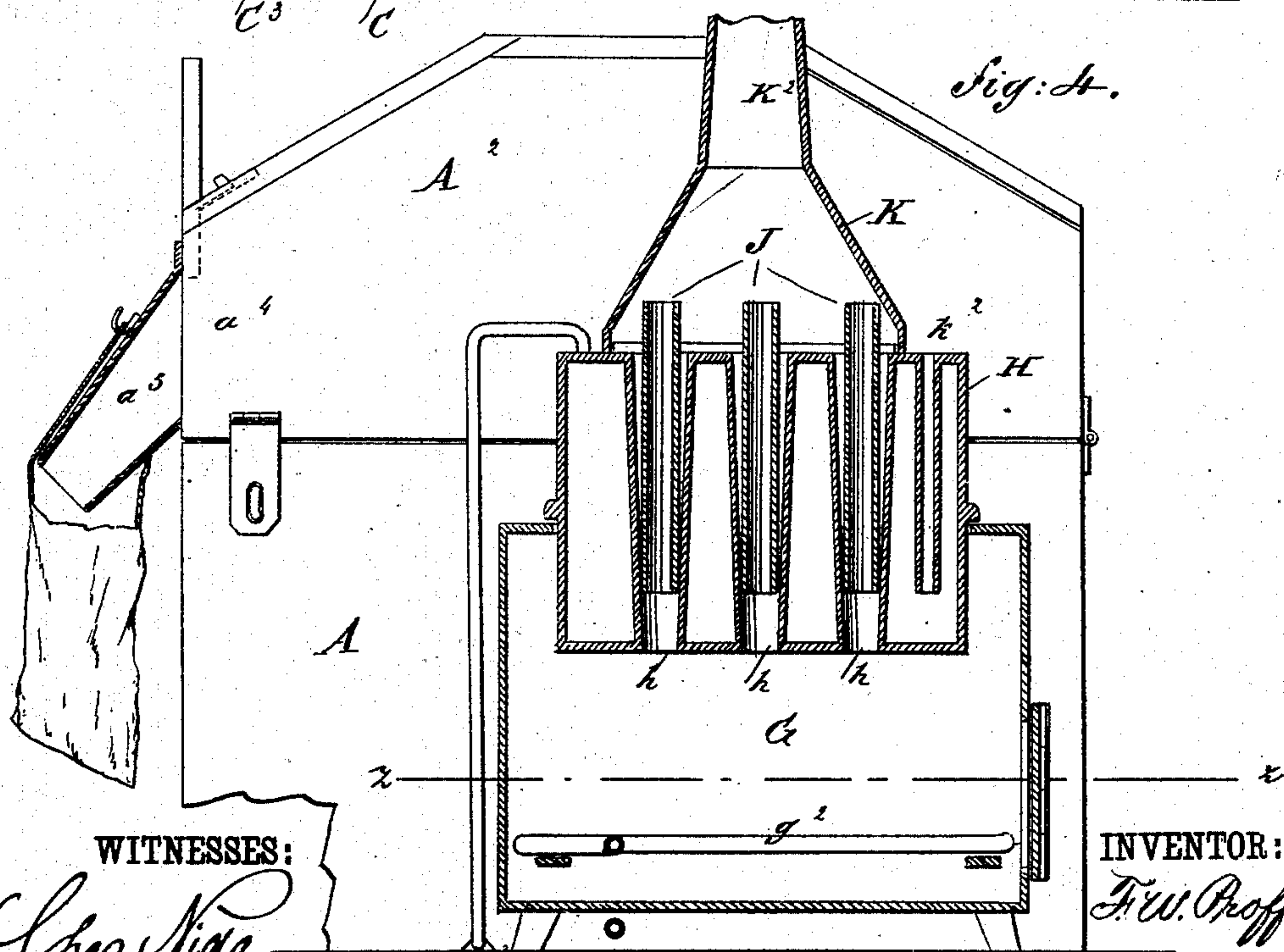
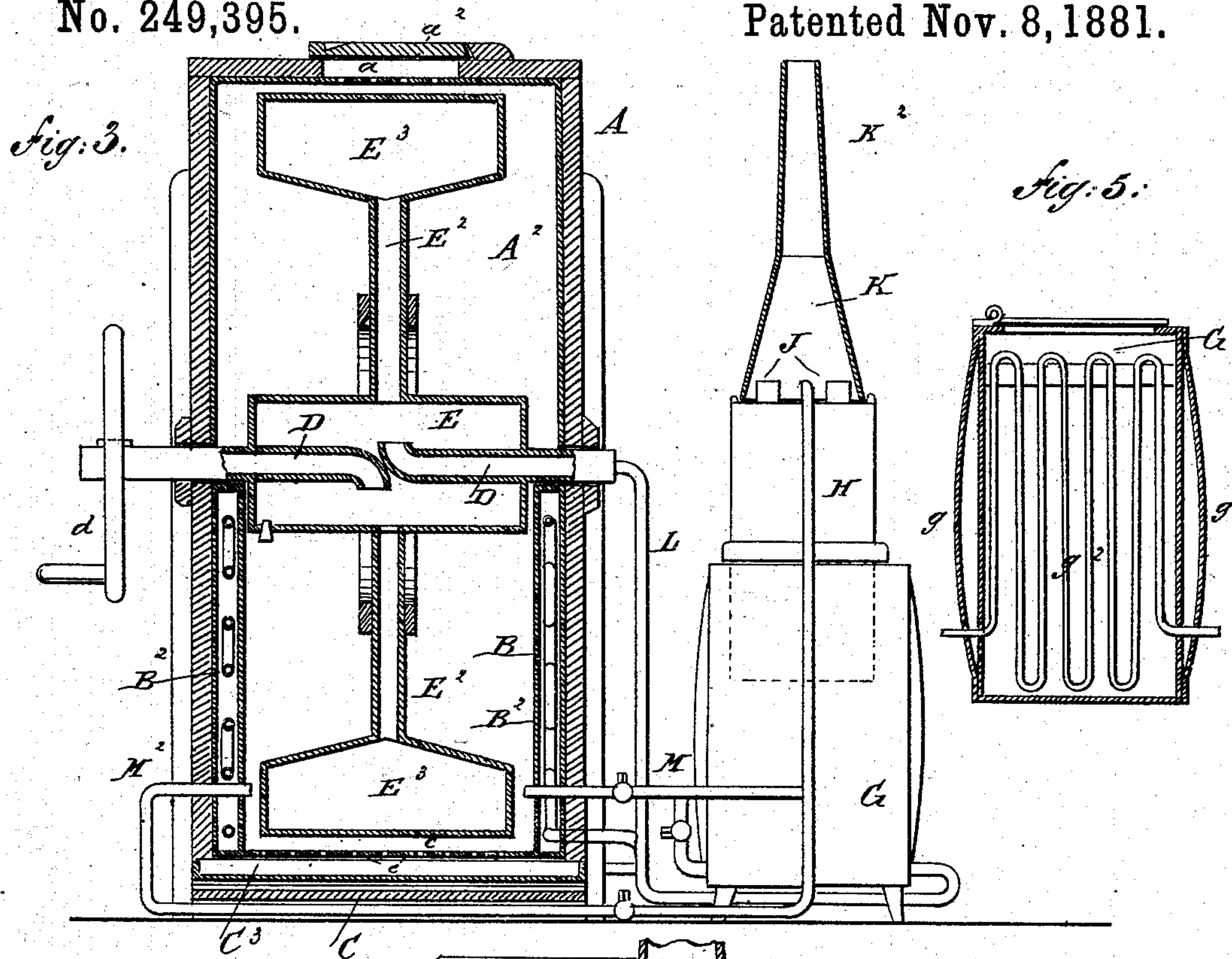
(No Model.)

2 Sheets—Sheet 2.

F. W. PROFFEN.
FEATHER RENOVATOR.

No. 249,395.

Patented Nov. 8, 1881.



WITNESSES:

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INVENTOR:

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UNITED STATES PATENT OFFICE.

FERDINAND W. PROFFEN, OF STAUNTON, VIRGINIA.

FEATHER-RENOVATOR.

SPECIFICATION forming part of Letters Patent No. 249,395, dated November 8, 1881.

Application filed March 12, 1881. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND W. PROFFEN, of Staunton, in the county of Augusta and State of Virginia, have invented a new and useful Improvement in Feather-Renovators, of which the following is a full, clear, and exact description.

My invention relates to an apparatus for cleansing and renovating feathers by means of steam.

The invention consists, first, in a novel construction, arrangement, and combination of the various parts of the apparatus which holds the feathers and cleanses and dries them; and, further, in a novel construction, arrangement, and combination, with said apparatus, of the furnace and boiler for generating the steam, and of the devices connected with it and with said apparatus, all as hereinafter more particularly described.

In the accompanying drawings, Figure 1 is a central vertical longitudinal sectional view of the apparatus for holding and renovating the feathers. Fig. 2 is a top view of the same with the cover removed. Fig. 3 is a transverse vertical sectional view at right angles to Fig. 1, as indicated by the line xx of Fig. 2. Fig. 4 is a side view of the apparatus shown in Fig. 1, with the furnace and boiler connected thereto, and shown in longitudinal vertical section taken in the line yy of Fig. 2. Fig. 5 is a horizontal section of the boiler taken in the line zz of Fig. 4.

Similar letters of reference indicate corresponding parts.

A represents an oblong quadrangular box or wooden case, having a hinged lid or cover, A^2 .

B is a semi-cylindrical vessel, made of sheet metal, and resting in the box or case A.

C is a sheet-metal plate, curved in an arc parallel with the bottom of the vessel B, and resting in the box or case A below the vessel B, with a space between it and said vessel, in which space is a coil of pipe, C^2 .

In the bottom of the vessel B is a series of perforations, c , immediately under which is a removable pan or drawer, C^3 , resting on the plate C.

Between the semicircular sides of the vessel B and the inner surfaces of the sides of the box or case A are coils of pipe B^2 .

In the upper edges of the sides of the box

or case A and the sides of the vessel B are bearings, in which work a hollow shaft consisting of two pipes, D D, the inner ends of which nearly meet midway of the width of the vessel B and are turned upward and downward, respectively. To the hollow shaft thus formed is attached a drum or hollow cylinder, E, from which extend radial hollow arms E^2 , terminating in hollow paddles or beaters E^3 , said drum, arms, and beaters being made of sheet metal and steam-tight. One end of the hollow shaft is provided with a crank-wheel, d , for turning it.

In the top of the cover A^2 is an opening, covered by a screen, a , and provided with a removable door, a^2 . At the front end of the cover is an opening, a^3 , provided with a hinged door; and at the rear end of said cover is an opening, a^4 , provided with a removable sliding door. The cover A^2 is five-sided in its longitudinal section, and the screen a occupies the horizontal side, the opening a^3 a diagonal side, and the opening a^4 a vertical side. At the openings a^3 and a^4 provision is made for the attachment of screens, as hereinafter described, and at the opening a^4 provision is made for the attachment of a spout, a^5 , as shown in Fig. 4.

Steam is admitted to and passed through the apparatus from a furnace and boiler, which is preferably constructed and arranged as follows:

G represents a furnace or stove, made of iron, and provided with additional external bulging walls, g , so as to form air-spaces outside of the main walls. The grate is formed by a coil of pipe, g^2 . On the top of the furnace rests the boiler H, which is provided with five flues, h , of tapering form. In these flues rest cylindrical pipes J, which are covered by a pyramidal hood, K, terminating in a smoke-pipe, K^2 . The boiler extends below the top of the furnace, and the pipes J extend above the top of the boiler, and their lower ends extend nearly to the bottoms of the flues, where they are arrested by the tapering form of said flues. The boiler is also provided with a pipe, k^2 , which extends below the low-water line, so as to give warning by blowing off steam when the water falls too low. By means of the pipes J the flues h are prevented from being burned out.

The boiler is provided with pipes leading to the grate-coil g^2 , and also to the coils C^2 B^2 and the pipes L M M^2 .

The feathers to be renovated are introduced
5 into the apparatus through the opening a^3 .
Steam from the boiler for cleansing and renovating enters the vessel B through the pipes M and M^2 and comes in direct contact with the feathers therein. As the shaft D is turned by
10 the crank-wheel d the feathers are beaten, agitated, and separated, and all solid foreign substances are removed and drop through the perforations c to the pan or drawer C^3 . Steam
15 from the boiler enters and passes through the grate-coil g^2 , where it is superheated, and from thence it passes to the coils B^2 C^2 and through the pipe L to the hollow shaft D D , and from thence through the hollow arms to the paddles or beaters E^3 , heating the cylinder E , arms E^2 ,
20 and beaters E^3 , so as to dry the feathers which have been wet by the steam coming in contact with them. When the feathers have been thoroughly renovated and dried they are ejected through the spout a^5 into a tick or other receptacle.
25

When steam is not to be used and the feathers are only to be beaten and deprived of dust while dry, screens are placed at the openings a^3 and a^4 .

Having thus described my invention, I claim as new and desire to secure by Letters Patent— 30

1. In a feather-renovator, the heating-coil C^2 , arranged within case A and between the curved plate C and the bottom of vessel B , in combination with the heating-coils B^2 , arranged between the case and sides of vessel B , for the purpose 35 specified.

2. In a feather-renovator, the combination, with case A and vessel B , of the cylinder E , having hollow radial arms provided with the hollow beaters E^3 , and the hollow shaft, consisting of two pipes, D D , having their ends 40 turned in an opposite direction, for the purpose specified.

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Witnesses:

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JOHN G. HENSLEY.