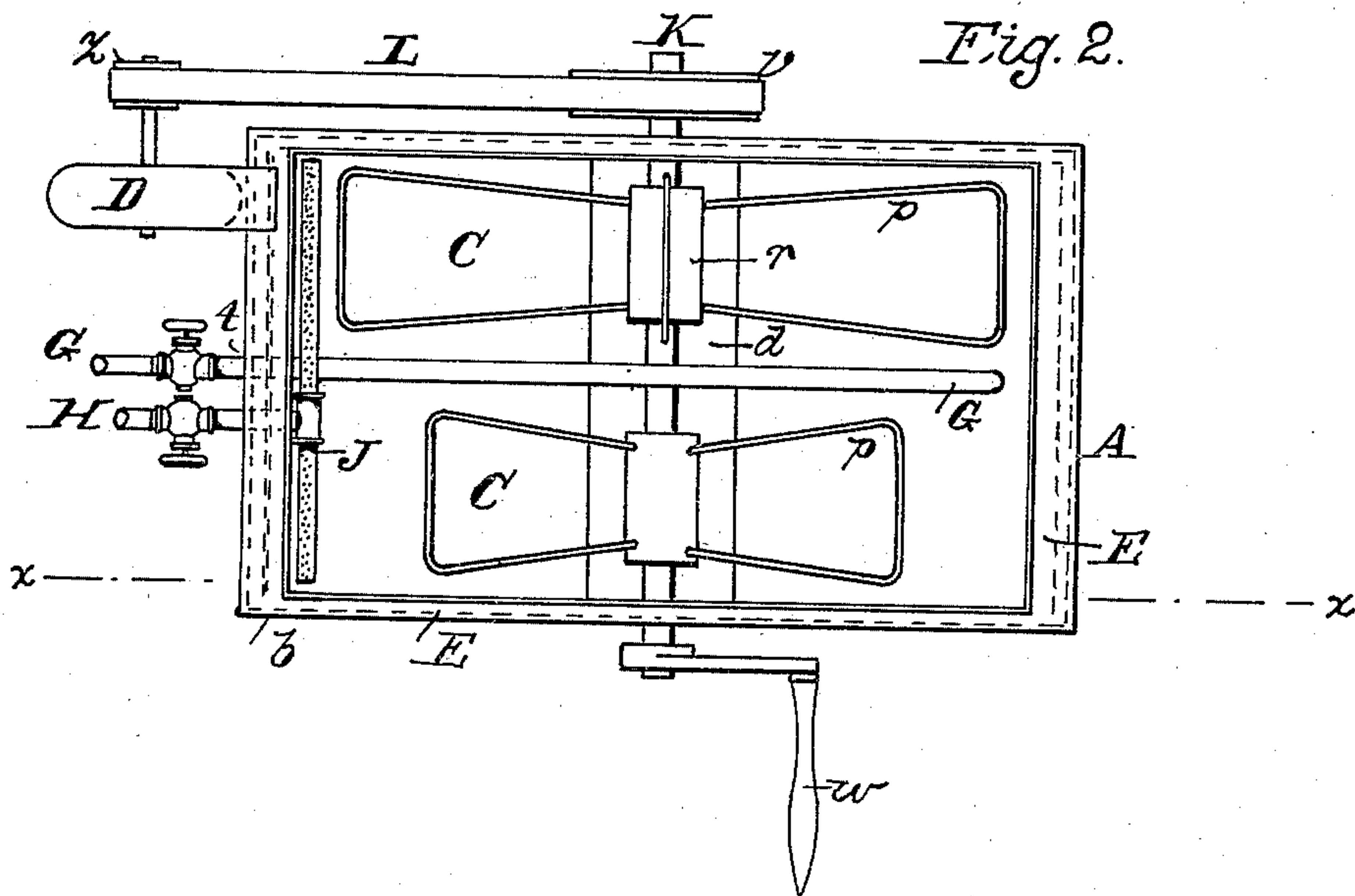
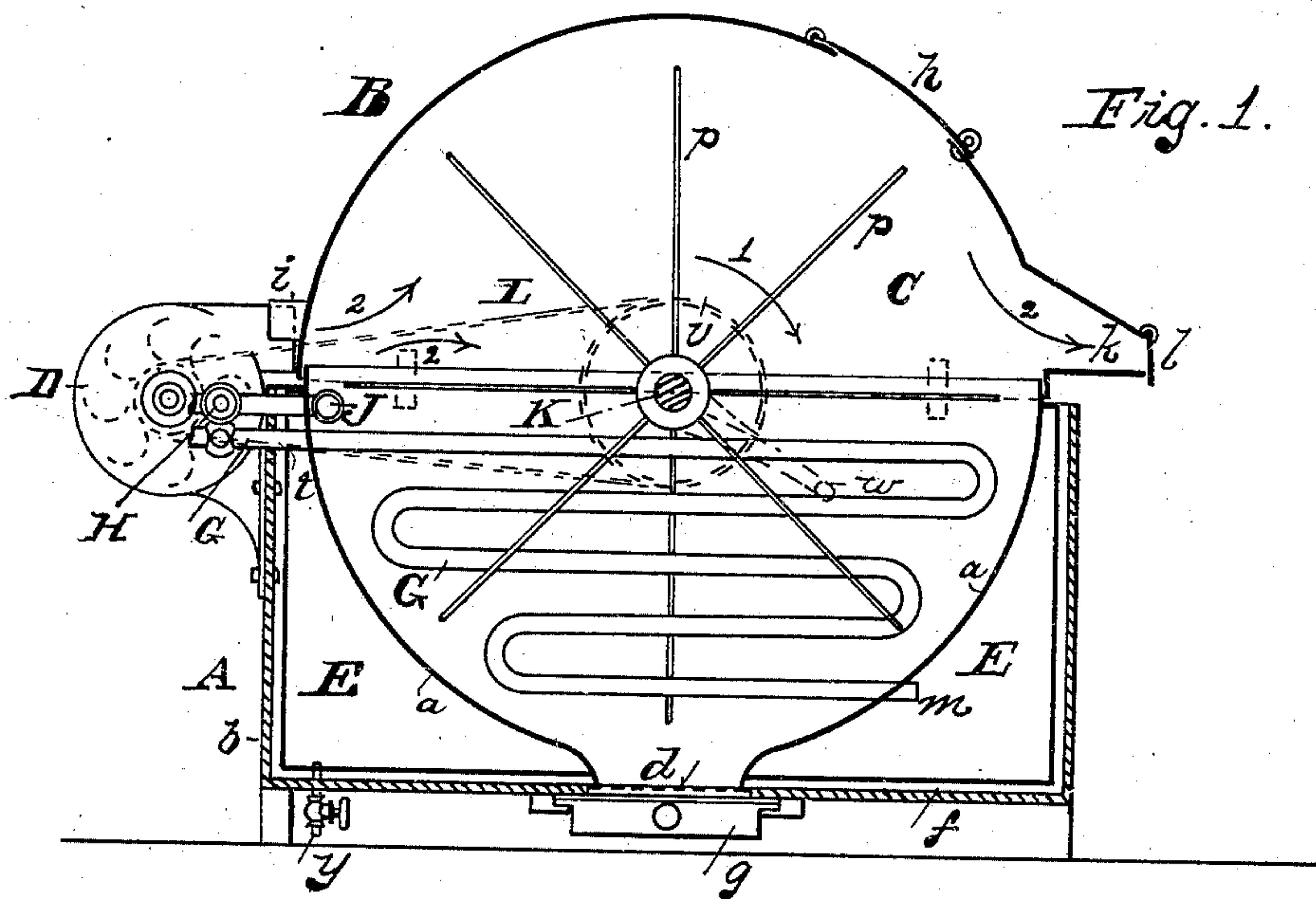


(No Model.)

W. J. CUMMINGS.
FEATHER RENOVATOR.

No. 370,454.

Patented Sept. 27, 1887.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM J. CUMMINGS, OF IPSWICH, MASSACHUSETTS.

FEATHER-RENOVATOR.

SPECIFICATION forming part of Letters Patent No. 370,454, dated September 27, 1887.

Application filed March 10, 1887. Serial No. 230,354. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. CUMMINGS, of Ipswich, in the county of Essex, State of Massachusetts, have invented a certain new and useful Improvement in Feather-Renovators, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical longitudinal section of my improved feather-renovator, taken on line *x x* in Fig. 2; and Fig. 2, a top plan view of the same with the cover removed.

Like letters of reference indicate corresponding parts in both figures of the drawings.

My invention relates more especially to that class of feather-renovators in which steam is employed for cleansing the feathers; and it consists in a novel construction and arrangement of parts, as hereinafter fully set forth and claimed, the object being to produce a more effective and otherwise desirable device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the body, B the cover, C the stirring-wheel, and D the blower, of the renovator.

The body consists of a rectangular-shaped box, *b*, provided with a screened opening, *d*, extending across the central portion of its bottom *f*, for the discharge of dirt and refuse from the feathers, and a drawer, *g*, disposed in slides beneath said opening, for receiving said refuse.

A steam-chamber, E, preferably composed of tin and having semicircular end walls, *a*, in longitudinal section, as best seen in Fig. 1, extends completely around the inner side of the body A, said chamber being provided with a waste-pipe, *y*, for carrying off the condensed steam.

The cover B, which is semicircular in form and is adapted to fit over the top of the chamber E, is provided in its upper portion with an opening for the reception of the feathers, which is closed by a hinged door, *h*, an open-

ing, *i*, in the rear to receive the mouth of the blower D, and a discharge-orifice, *k*, provided with a slide or hinged door, *l*, through which the feathers are blown into the tick of the mattress.

A steam-pipe, G, passes through the rear upper portion of the body A and chamber E, as shown at *t*, and opens into the lower portion of said chamber at *m*, said pipe being folded in the interior of the renovator, and serving as a radiator for heating the feathers, and also to supply steam to said chamber.

A steam-pipe, H, passes into the renovator just above the pipe G, and is connected with a horizontally-arranged perforated pipe, J, through which jets of steam are discharged into the feathers.

The stirring-wheel C consists of two sets of radially-arranged wire blades or stirrers, *p*, secured in hubs *r*, disposed on a shaft, K, on either side of the pipe G, said shaft being journaled in the sides of the body A and provided at one end with a crank, *w*, and at the other end with a driving-pulley, *v*.

The blower D is of the ordinary form and construction, and is secured to the rear end of the body A so that its mouth shall enter the opening *i* in the cover B. The blower is provided with a driving-pulley, *z*, connected by a belt, L, with the main driving-pulley *v*, by means of which it is operated.

In the use of my improvement the feathers to be cleansed are inserted in the renovator through the opening *h* and steam admitted through the pipe G until a sufficient degree of heat is attained in the chamber E. The belt L is then unshipped from the pulley *z* and the crank *w* turned, causing the blades *p* to revolve in the direction indicated by arrow 1 in Fig. 1, and the feathers to be thoroughly stirred about, after which steam is admitted through the pipe H into the perforated pipe J, to moisten and wash the feathers and cleanse them from dirt or refuse matter, the dirt falling through the screened opening *d* into the drawer *g*, whence it can be readily removed. When the feathers have been sufficiently cleansed, the belt L is adjusted on the pulleys *z* and *v* and the crank *w* again turned, causing the fans of the blower to revolve and force a current of air into the renovator in the direction

shown by arrow 2 in Fig. 1. This current causes the feathers as they are thrown up by the blade *p* to be carried out through the discharge-orifice *k*, around which the tick of the mattress or other article to be filled has been secured.

I do not confine myself to operating the blower in the manner described, as it may be entirely separated from the body of the renovator and driven in any suitable manner. Neither do I confine myself to constructing the blades *C* of wire, as they may be made of any suitable material and of any suitable form, although I deem wire preferable, as it does less injury to the feathers; nor to folding the pipe *G* in the manner shown and described, as it may be arranged in any other manner that will afford the necessary radiating-surface.

Having thus described my invention, what I claim is—

1. In a feather-renovator, the combination of an outer casing, a steam-tight chamber dis-

posed within said outer casing, an innermost feather-chamber, a steam-radiating pipe folded within said feather-chamber and discharging into said steam-tight chamber, a cover for said feather-chamber, and a stirring-wheel within said feather-chamber, substantially as described.

2. In a feather-renovator, the combination of an outer casing, a steam-tight chamber disposed within said outer casing, an innermost feather-chamber, a steam-radiating pipe folded within said feather-chamber and discharging into said steam-tight chamber, a cover for said feather-chamber, a steam-jet pipe within the feather-chamber, and a stirring-wheel within said feather-chamber, substantially as described.

WILLIAM J. CUMMINGS.

Witnesses:

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C. A. SHAW.