

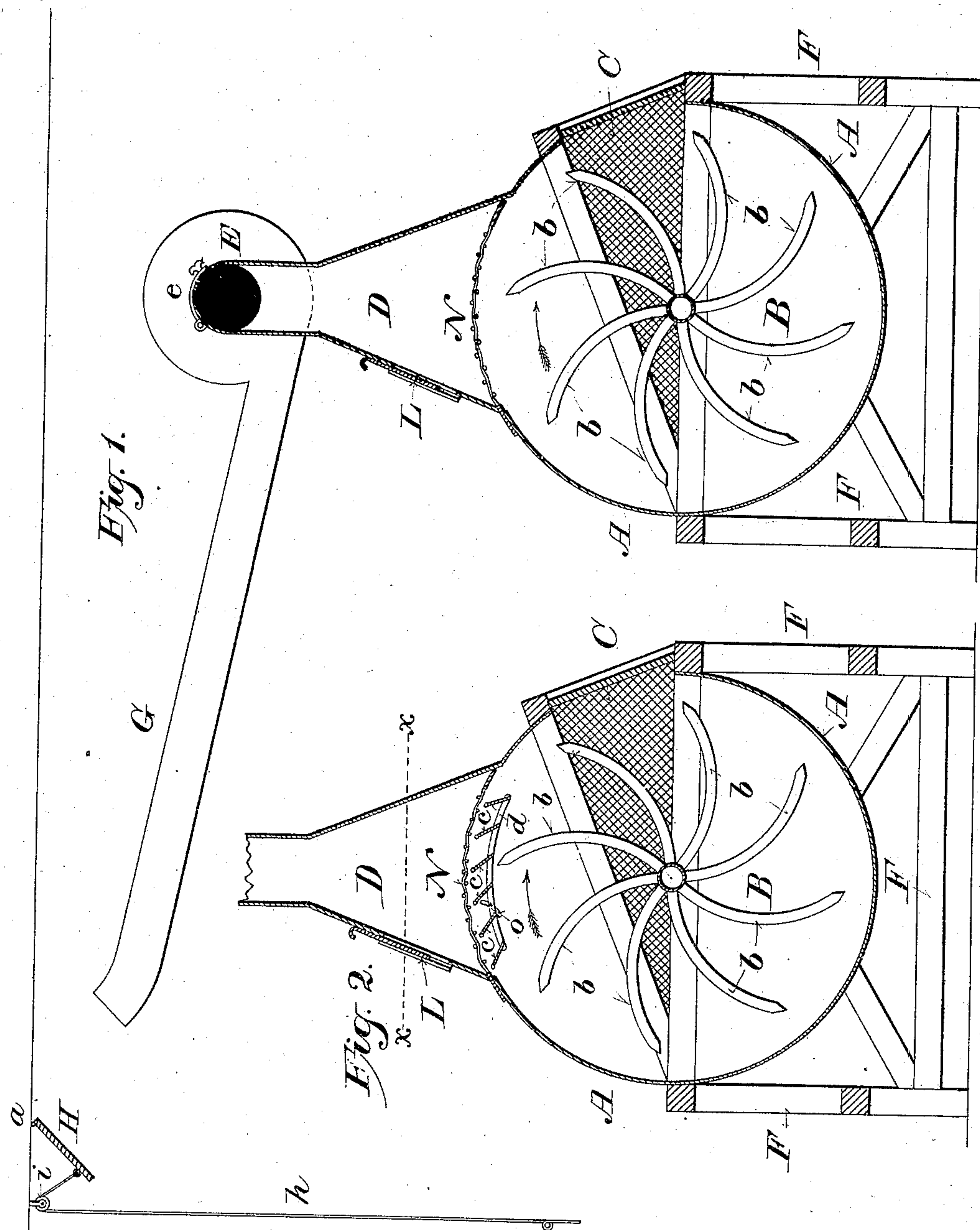
(No Model.)

2 Sheets—Sheet 1.

H. PENNER.  
FEATHER SORTER.

No. 335,144.

Patented Feb. 2, 1886.



Witnesses:

Chas. R. Goss.  
George Goll

Inventor:

Herman Penner,

By E. A. Bottom  
Attorney.

(No Model.)

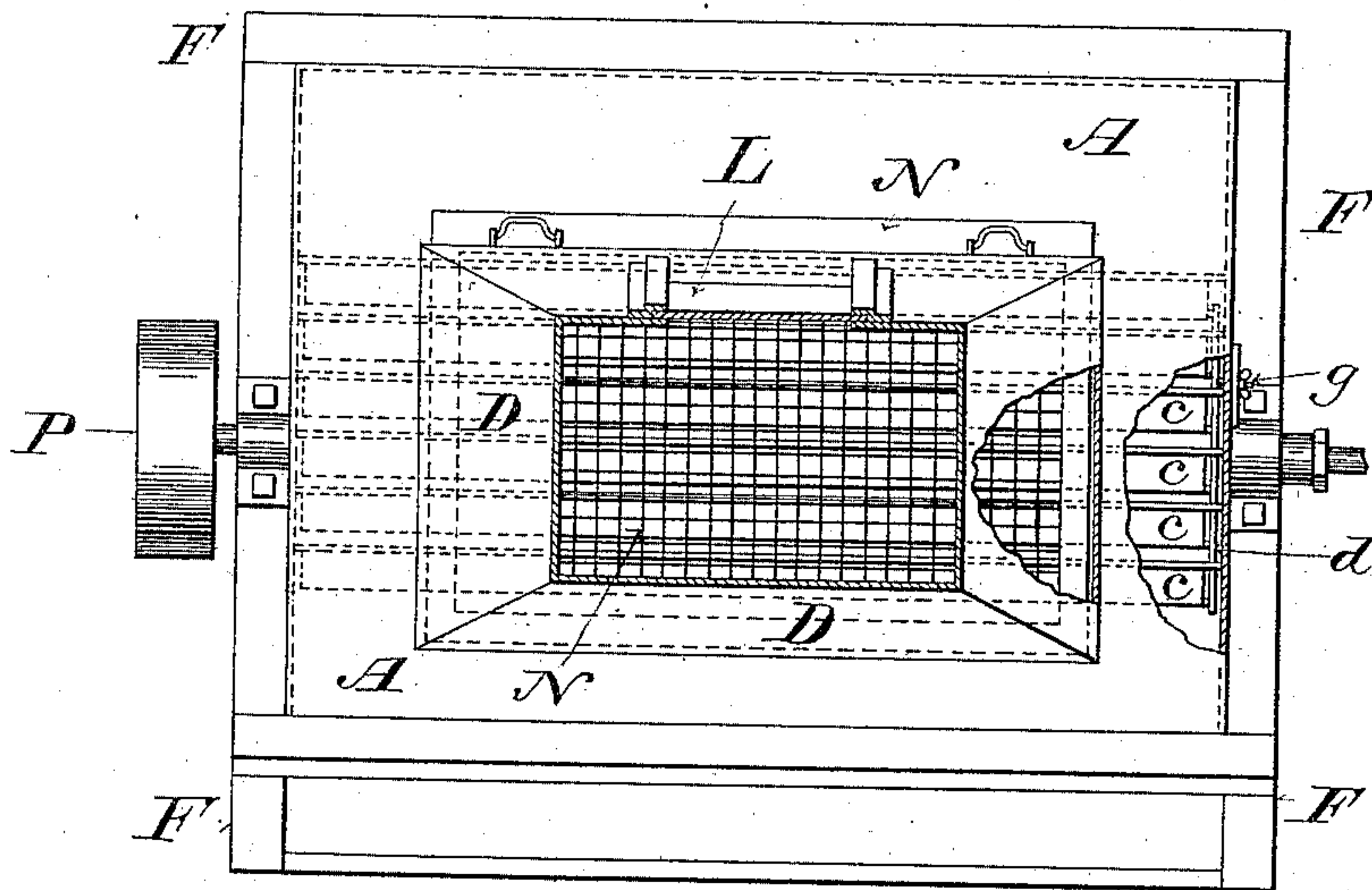
2 Sheets—Sheet 2.

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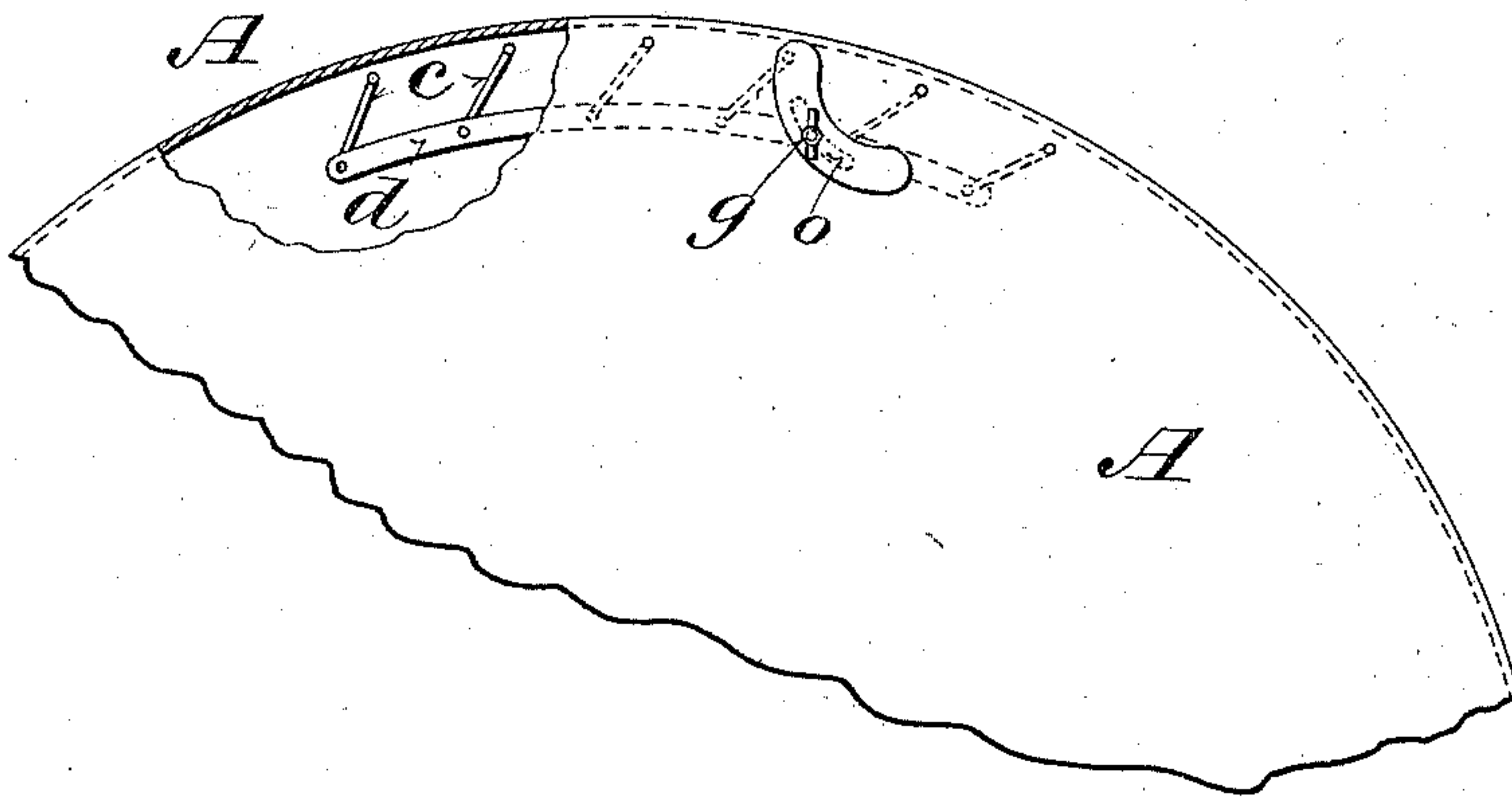
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*Fig. 3.*



*Fig. 4.*



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# UNITED STATES PATENT OFFICE.

HERMAN PENNER, OF MILWAUKEE, WISCONSIN.

## FEATHER-SORTER.

SPECIFICATION forming part of Letters Patent No. 335,144, dated February 2, 1886.

Application filed June 15, 1885. Serial No. 168,687. (No model.)

*To all whom it may concern:*

Be it known that I, HERMAN PENNER, of the city of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Feather-Sorters; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to that class of machinery employed for separating the coarse quilled feathers and heavy impurities from the down and fine feathers, and for grading the latter according to their size and weight.

It consists, essentially, of a hood designed to be applied to any of the cleansing and renovating machines commonly used, or to any convenient form of agitating device, said hood being provided with a screen or slats and connected with a blower.

In the accompanying drawings like letters refer to the same parts in the several figures.

Figure 1 is a transverse vertical section of my improved sorter applied to a common form of renovator. Fig. 2 is a like section of a portion of the device shown in Fig. 1, showing longitudinal slats in connection with the screen in the hood. Fig. 3 is a horizontal section on the line *x x*, Fig. 2; and Fig. 4 is a detail view of the device for adjusting the slats at or near the opening into the hood.

A represents the cylindrical case of an ordinary renovator to which my improvements are applied. It is mounted upon a suitable frame, F, and is provided, in the usual way, with a rotary agitator, B, having radial arms *b b*, and axially journaled in said case A. Openings or screens C are provided in the ends of said case A, or in any other convenient part thereof, to allow the dust and dirt in the feathers to be expelled therefrom when this part of the machine is used as a renovator.

P is a driving-pulley mounted upon the protruding end of the shaft of agitator B, as shown in Fig. 3.

For the purpose of cleansing and renovating feathers steam-jets are provided within

the case A, and the arms *b b* and shaft of the agitator B are made hollow to receive steam.

As these parts have no essential connection with my improvements, it will not be necessary to particularly show or describe them herein.

That part of the machine hereinbefore described is common in renovators in general use, and I make no claim thereto *per se*.

My improved sorting and grading device or attachment may be described as follows:

D is a large pyramidal hood, formed of any suitable material—such as sheet metal—and mounted upon case A, over a large rectangular opening therein, and communicating at the top with the central opening in an exhaust-fan, E, Fig. 1.

G is the blast-pipe leading from said fan, and having at its discharging end an upward curve or bend, so as to direct the blast therefrom against an adjustable leaf, H, horizontally hinged to the ceiling at *a*, and supported at any desired inclination thereto and to said blast by a cord, *h*, which passes over a pulley, *i*, depending from the ceiling, and is fastened to said leaf H at or near its lower edge.

*e* is a door opening, in the usual way, into the draft-pipe of said blower, and L is a slide controlling an opening in the side of hood D, Figs. 1 and 2.

N represents a coarse removable wire screen, placed, as seen in the drawings, through an opening in the side of hood D, over the large opening therefrom into case A. I provide a number of these screens N, of varying coarseness, according to the sizes or grades of feathers desired.

*c c* are adjustable slats, pivoted at their ends in case A, longitudinally thereto, and preferably just below screen N, Figs. 2 and 3. They are connected at one end by a rod, *d*, through which they are set at any desired inclination by means of the screw and clamp nut, *g*, protruding through a curved slot, *o*, formed in the end of case A, Fig. 4.

The slats *c c*, if desired, may be placed above the screen N, or both screen and slats may be located above their position shown in the drawings in hood D without changing the principle or operation of my invention.

My sorting device may be used as an at-



tachment with various styles of renovators embodying the essential features shown in the drawings, or it may be made as a distinct and complete machine for that purpose. When it is applied to a renovator, the opening into the hood D is closed during the operation of cleansing and renovating by inserting in the place of screen N a tight slide or shutter.

The operation of my improved device may be described as follows: The feathers, having been previously cleaned and renovated, either by the same or a separate machine, and put in readiness for sorting and grading, are placed within case A, a screen, N, having meshes of the proper size to permit feathers of the desired size to pass through it, is interposed between said case and hood D, and the blower E and agitator B set in motion. The latter, revolving in the direction indicated by the arrows, Figs. 1 and 2, causes the feathers to circulate in the same direction, and as they pass the opening into hood D the draft produced by blower E draws the lighter and smaller feathers up through screen N into said hood and blower, from which they are discharged through the blast-pipe G against the inclined leaf H, while all heavy impurities and coarse feathers are retained in case A. The inclination of said leaf H is so adjusted by means of cord *h* as to give the proper direction to the draft, and to cause the feathers to be deposited as desired, the lighter ones falling farther from, and the heavier ones nearer to, the machine, thereby arranging themselves according to their weight.

The draft through hood D is regulated by varying the speed of blower E and opening the door *e* and slide L more or less, as required.

To insure against quills being drawn through the screen N into the hood D, the inclined longitudinal slats *c c* may be used in connection with said screen, although they are not indispensable to the successful operation of the machine. The slats may also be used alone in place of screen N, although I prefer to use the two in connection, as before described.

When the machine is in operation, the coarse quilled feathers naturally take the direction indicated by the arrow, Fig. 2, and should the draft through the hood D be sufficient to draw them up against the slats *c c* they will strike against the forwardly-inclined faces of said slats and be withdrawn into case A by the agitator B, or the current produced thereby.

I am aware of the patent granted January 2, 1877, No. 185,824, to Isaac L. Fisher, for feather-renovating machines, and I do not claim the device therein shown, in which a blower is connected by a horizontal pipe directly with the renovator-case; but

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

1. The combination, in a feather-sorter, of the case A, provided with an air-supply opening, C, agitator B, hood D, mounted upon and communicating at its base with the interior of said case, and blower E, connected with the upper part of said hood, so as to produce an upward draft through the same, substantially as and for the purposes set forth.

2. The combination, in a feather-sorter, of the case A, having an air-supply opening, C, agitator B, hood D, mounted upon and communicating with the interior of said case, blower E, connected with the upper part of said hood, so as to produce an upward draft through the same, and screen N, interposed between said case and blower, substantially as and for the purposes set forth.

3. The combination, with a feather-receptacle having opening or openings C and an agitator, B, of the hood D, mounted thereon over an opening therein, screen N, slats *c c*, blower E, and discharge pipe or opening, substantially as and for the purposes set forth.

4. The combination, in a feather-sorter, of the case A, having an air-supply opening, C, agitator B, hood D, mounted upon and communicating with the interior of said case, blower E, connected with the upper part of said hood, so as to produce an upward draft through the same, and the regulating slide or shutter L, substantially as and for the purposes set forth.

5. The combination, with a feather-receptacle, A, having opening or openings C, of the hood D, mounted thereon and communicating therewith, blower E, blast-pipe G, and leaf H, substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

HERMAN PENNER.

Witnesses:

CHAS. L. GOSS,  
M. E. BENSON.