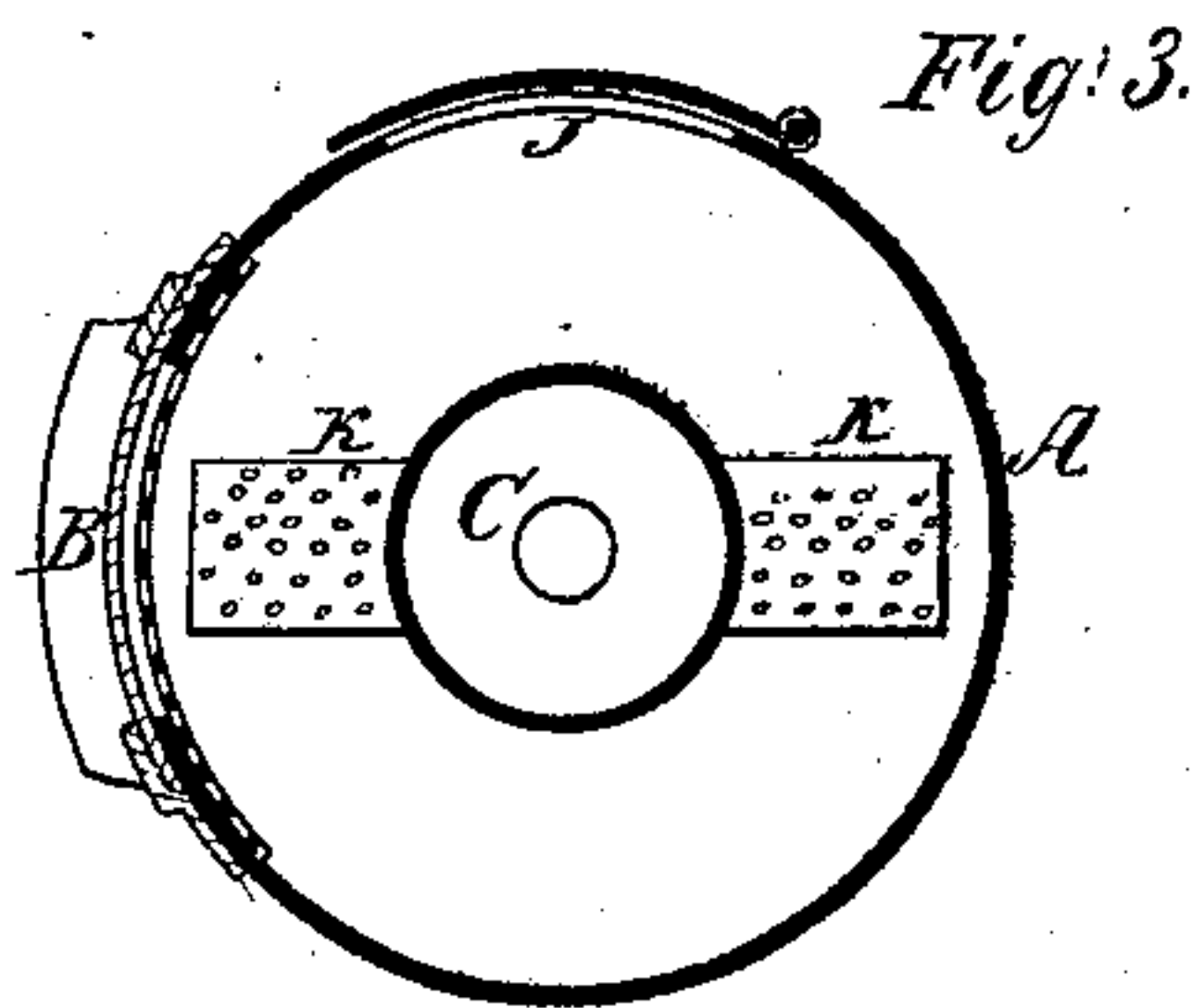
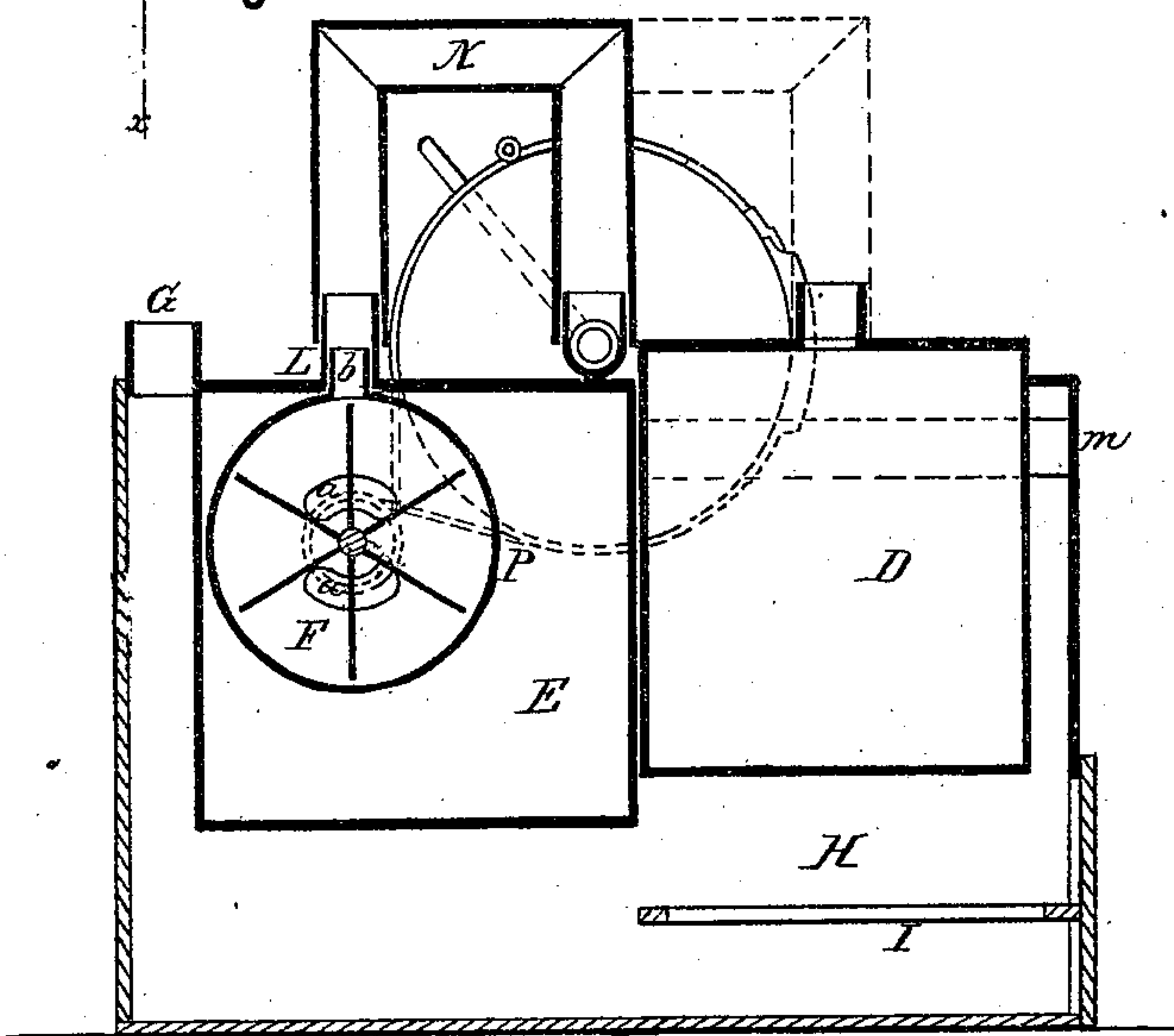
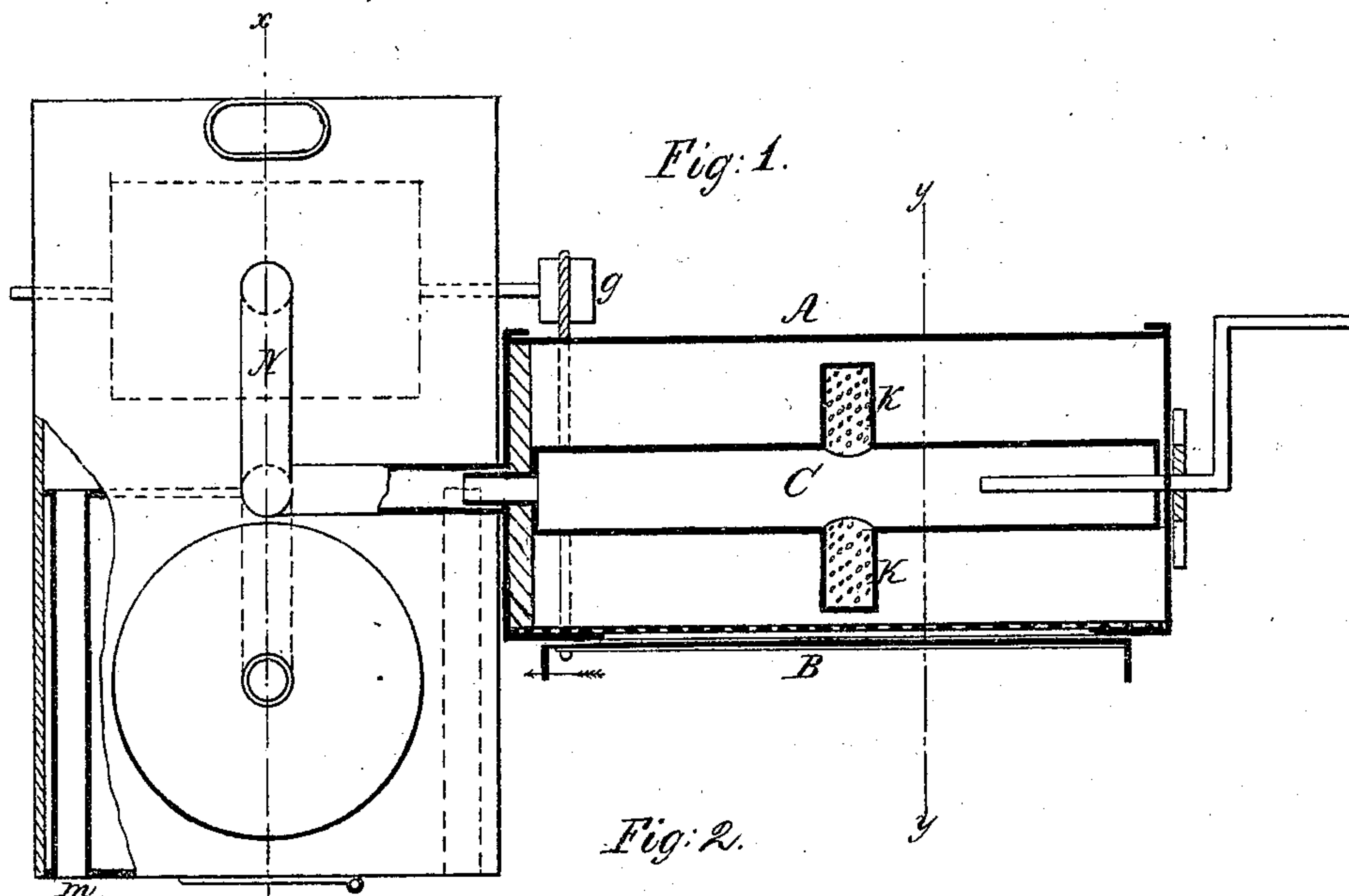


E. COLVIN.  
FEATHER RENOVATOR.

No. 87,145.

Patented Feb. 23, 1869.



Witnesses;  
Am. Morgan  
P. C. Dietrich

Inventor;  
E. Colvin.  
per *Wm. H. Co.*  
Attorneys.

# United States Patent Office.

ENOCH COLVIN, OF PAULET, VERMONT.

Letters Patent No. 87,141, dated February 23, 1869.

## IMPROVEMENT IN FEATHER-RENOVATOR.

The Schedule referred to in these Letters Patent and making part of the same.

### To all whom it may concern:

Be it known that I, ENOCH COLVIN, of Paulet, in the county of Rutland, and State of Vermont, have invented a new and improved Feather-Renovator; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

This invention relates to an improved apparatus for renovating feathers, and consists in the combination of devices for subjecting them to the action of steam and heated air, in the manner hereinafter described, whereby the feathers are cleansed and dried, and thoroughly renovated, in a single cylinder, as I will proceed to explain.

Figure 1 is a top or plane view of the machine, the revolving cylinder being shown in section, and part of the fire-box being broken away to show the position of the air-pipes.

Figure 2 is a vertical section of fig. 1 through the line *x x*, showing the steam-boiler and the hot-air chamber, and the fan-blower for forcing the hot air into the renovating-cylinder.

Figure 3 is a vertical section of fig. 1 through the line *y y*.

Similar letters of reference indicate corresponding parts.

A is the renovating-cylinder, which is formed of metal, or other suitable material, with a portion of its casing perforated, and with slide-shutters for closing the same, as seen in the drawing at B. This perforated portion (which may be more or less in extent, as may be desired,) is for allowing the hot air to escape, thereby producing a circulation of heated air among the feathers, and also for discharging the water of condensation when desired.

C is an interior cylinder, into which the steam and hot air are introduced from the boiler and air-chamber.

D is the boiler, and

E is the air-chamber.

F is the fan-blower, which is revolved within the cylindrical case P, which is arranged, as shown in fig. 2, within the air-chamber E, by a band or belt around the cylinder A, on the pulley *g*.

H is the fire-box.

*a a* are curved slots or openings, in the end of the cylinder P, through which the heated air is admitted from the chamber E, whence it is conducted, through the tube or neck *b*, attached to the periphery of said cylinder, into the pipe N.

G is the pipe, for the discharge of the smoke and gaseous products of combustion.

N is a pipe, bent to form two right angles, which is adapted to be shifted so as to conduct either the steam from the boiler D, or the heated air from the chamber E, into the cylinder C, as may be desired.

I represents the fire-grate.

The feathers are introduced into the cylinder A, around the interior cylinder C, through the aperture J, (seen closed in fig. 3.)

Steam is then conducted from the boiler D, through the pipe N, when adjusted for the purpose, into the interior cylinder C, and discharged, through the transverse perforated pipes K, into the cylinder A, among the feathers. The cylinder, with feathers, is revolved while steam is being thus discharged.

While the feathers are being cleansed by this process, the water of condensation is allowed to escape through a small pipe in the cylinder, or through the perforated portion at B.

When the feathers have been sufficiently steamed, the conducting-pipe N is changed from the neck of the boiler to a neck on the air-chamber, as seen at L, and the hot air is conducted into the renovating-cylinder, through the cylinder C and pipes K, for drying the feathers.

The air is allowed to escape through the perforations at B, so that a circulation is produced, and the moisture from the feathers is carried off by a continual current of air, which has been heated to the desired temperature.

This air is conveyed into the hot-air chamber, through the pipes *m*, on each side of the boiler.

The motion of the fan produces a constant current through the chamber.

It will thus be seen that, with a single cylinder, the feathers are steamed, and cleansed, dried, and thoroughly renovated.

The advantages of this arrangement, in regard to first cost and trouble in handling the feathers, will be readily understood by those who are acquainted with the subject.

Having thus described my invention,

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

In combination with the cylinders A C, arranged and operating as described, the boiler D, air-chamber E, and fan-blower F, arranged substantially as and for the purposes set forth.

ENOCH COLVIN.

Witnesses:

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