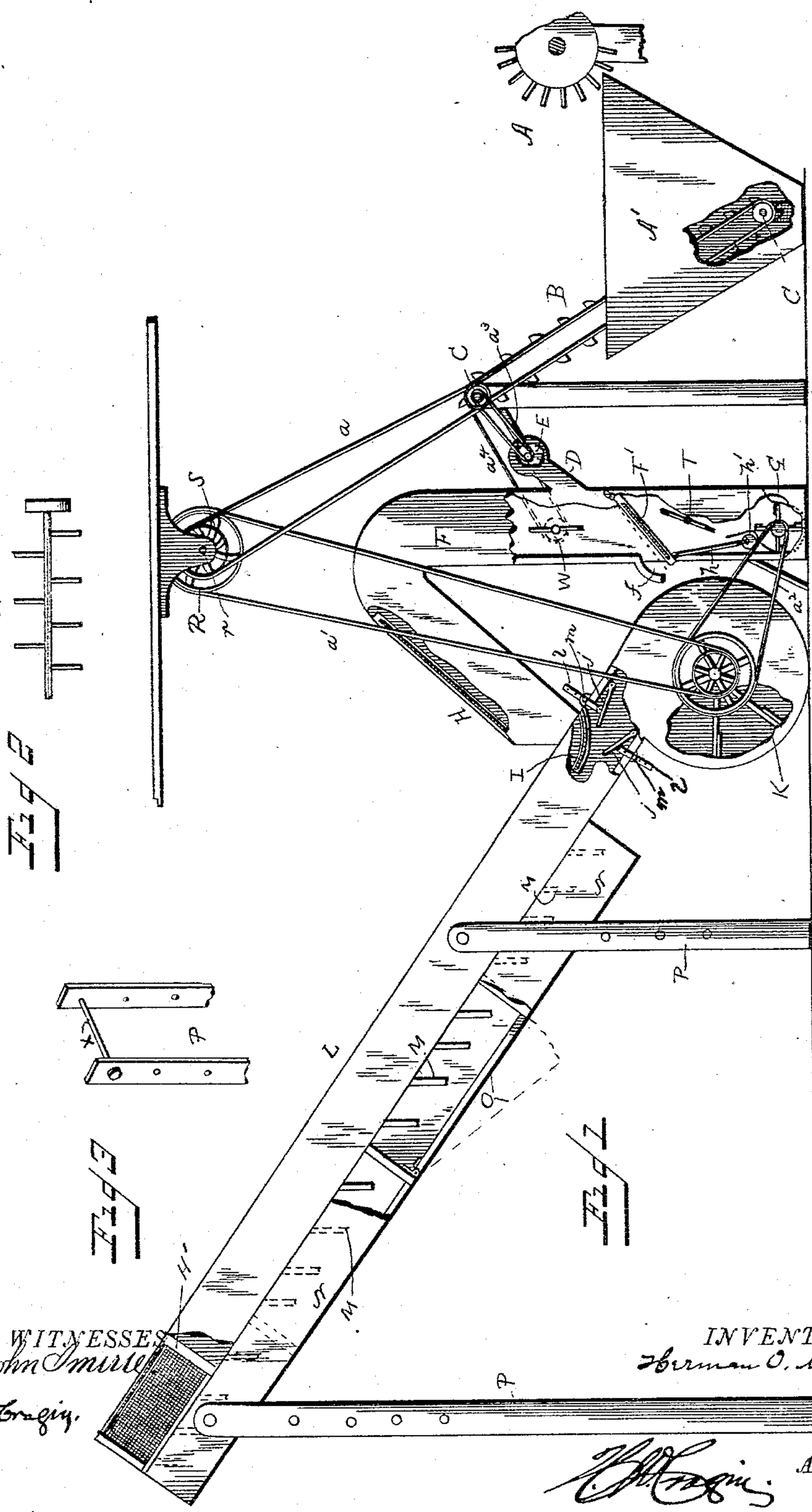
(No Model.)

# H. O. MOONEY.

## FEATHER RENOVATOR AND SORTER.

No. 387,800. Patented Aug. 14, 1888.




WITNESSES
John Smith.
A. H. Evans.

INVENTOR.
Herman O. Mooney.
by
A. H. Evans
Attorney.

# UNITED STATES PATENT OFFICE.

HERMAN O. MOONEY, OF FARMINGTON, NEW HAMPSHIRE.

## FEATHER RENOVATOR AND SORTER.

SPECIFICATION forming part of Letters Patent No. 387,800, dated August 14, 1888.

Application filed February 15, 1888. Serial No. 264,092. (No model.)

*To all whom it may concern:*

Be it known that I, HERMAN O. MOONEY, a citizen of the United States, residing at Farmington, in the county of Strafford and State of New Hampshire, have invented certain new and useful Improvements in Feather Renovators and Sorters; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

The object of my invention is to provide a simple and improved machine for sorting and renovating feathers by air-blast, the blast removing the impurities and causing the feathers of a like specific gravity to fall together into receptacles at the bottom of the longer chute.

The invention consists in details of construction described below, and pointed out in the claims.

In the drawings, Figure 1 is a side view partly broken away. Fig. 2 is a detail view of the clearer in the shorter chute. Fig. 3 is a broken detail view of the long-chute supports.

Like letters refer to like parts.

A is a picker, but it need not necessarily be used.

A′ is a bin, into which the feathers may be placed directly, or they fall therein from the picker.

B is an endless feed-belt operated by pulleys C, which may be run by a belt leading to the pulley *s*, or in any suitable way, and the object of belt B is to carry the feathers from the bin to the hopper D. The latter opens into the upright chute or blast-flue F, and is provided with a wheel, E, for feeding the feathers evenly into said flue F, which may be twelve by thirty inches.

F′ is a screen filling the inside of flue F, and it has an up-and-down motion given to it by the connecting-rod *h*, attached rigidly to said screen and pivoted to an eccentric roll, *h′*, the latter being rotated by the friction of the moving belt $a^2$, upon which said roll presses. The connection between the rod and roll should be at a point about two inches above the center of the latter; but the throw of the rod *h* may be varied by changing the point of its attachment with said roll.

G is a blower, which should be about one foot in diameter.

*f* is simply a waste-chute opening out of flue F, and W is a slowly-moving clearer to carry back feathers too light to rise farther, when they will gradually be shaken out at *f*. At the top of the portion of this flue, which connects with the long flue L, is a screen, H, of any proper mesh.

I is a screen-chute to receive the feathers coming from flue F, and prevents them from falling in a body into the blast of blower K, which should be larger than blower G. To secure the proper effect of the blast coming from blower K, slant-boards *j* are provided, and they may be rendered adjustable by arms *l* and set-screws *m*. The flue L may be thirteen feet long, one foot deep, and thirty inches wide. At the end is a screen, H′, of proper mesh, which at that point kills the blast of blower K by allowing the air to escape, at the same time preventing the egress of any feathers reaching it. Below the bottom proper of flue L is a series of slant-boards or riffles, M, inclined at an angle of about forty degrees, the purpose of which will be spoken of below, and under said boards are feather receivers or boxes N, having drop-bottoms O.

P are standards for supporting and adjusting flue L at any desirable angle, said standards having perforations and a tie-rod, *x*, as shown. (See Fig. 3.)

A description of the operation will more fully and connectedly show the function of the various parts of the machine, and is as follows: The machine being set in motion, the feathers are placed in the bin, or fall therein from the picker. They are carried by the feed-belt to the hopper D and fed evenly by wheel E into flue F. They then fall upon the moving screen F′, the blast from the blower G carrying up the finer ones, the coarse and matted feathers, quills, and coarse dirt sliding over the said screen and out of opening *f*. The damper T is to direct the main blast toward wheel E and prevent coarse feathers clogging at the opening of chute D. The feathers mov-

ing on in the blast lose nearly all the dust and fine impurities which remain as they pass screen H, and then fall upon screen I in flue L, where they all start evenly from the same point, as they are prevented from falling bodily into flue L by the said screen I, being gradually and quickly caught by the heavier blast coming from blower K and carried up flue L. The blast not being too strong, the feathers begin to fall after leaving screen I, and are deposited in boxes N, according to their specific gravities, the heaviest falling first and the lightest going to the end of the flue, where the screen H' lets out the air and kills the blast without allowing any feathers to escape. As the screens H H' may be somewhat coarse, the dust in the flues at those points readily escapes. The slant-boards M, which can easily be made adjustable, prevent the blast from eddying into the boxes N. Thus the coarse and fine feathers mixed will not fall into the first box, but will fall according to their weight into the proper one, nor will the blast draw out feathers after they have been deposited. The boxes N having drop-bottoms, the feathers can be conveniently removed, and will be found to be graded according to fineness. When screens F' H H' get foul, they can be removed and new ones inserted, and of course the dimensions of the various parts may be varied at will. The machine is simple, economical, and efficient for really producing sorted feathers.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with a feather-supply and the long flue having a fan-blower, of an intermediate flue opening into the long flue in front of its blower, said intermediate flue having a fan-blower, a supply-chute, an opposite waste-chute, and a rising and falling screen for removing the coarser materials, as set forth.

2. The combination, with the inclined blast-flue L, the inclined feed-belt B, and feather-bin A', of the upright flue F, located between flue L and belt B, and having feed-chute D, feed-wheel E, fan-blower G, moving screen F' above said blower, waste-chute *f* opposite to feed-chute D, and stationary screen H above the point where flue F opens into flue L, as set forth.

3. The combination, with the intermediate blast-flue, F, of the blast-flue L, the latter being provided below the exit of the former with a screen-chute, I, adjustable slant-boards *j* below said chute, and a fan-blower in the rear of said boards, whereby the feathers do not fall bodily into flue L and the blast may be directed toward chute I, as set forth.

4. The combination, with the blast-flue F, of blast-flue L, having at its outer end escape-screen H', and at the bottom a series of boards, M, inclined forward at an angle and opening into subjacent boxes N, whereby the blast is prevented from eddying into said boxes and removing the feathers deposited, as set forth.

5. The combination, with the shorter blast-flue having a waste-chute, of the rising and falling screen F' and the rotary clearer W above said screen, as set forth.

6. The combination, with the shorter flue, F, having feather-supply chute D and waste-chute *f*, of the fan-blower G, the damper T above the latter, for directing the main force of the blast toward chute D, the rising and falling screen F', and the rotary clearer W, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HERMAN O. MOONEY.

Witnesses:
CHARLES J. LEAVITT,
CHARLES W. TALPEY.