2 Sheets—Sheet 1.

A. HICKS.

Preparing Feathers for Bedding.

No. 200,197. **Patented Feb. 12, 1878.**

Fig. 1.

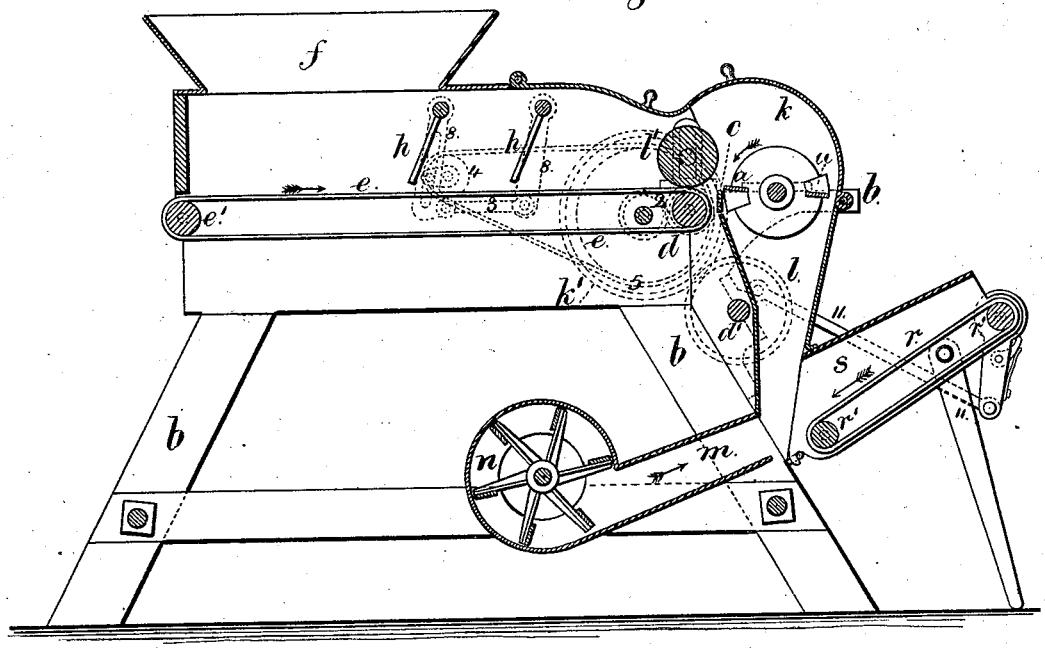
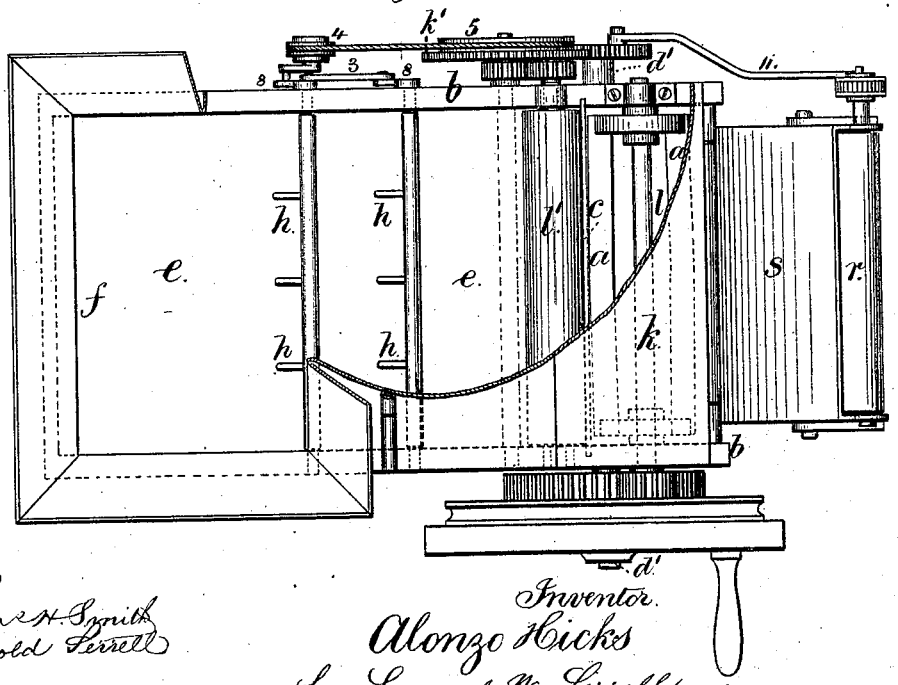


Fig. 2.



Witnesses
Chas. H. Smith
Harold Serrell

Inventor.
Alonzo Hicks
by Lemuel W. Serrell atty.

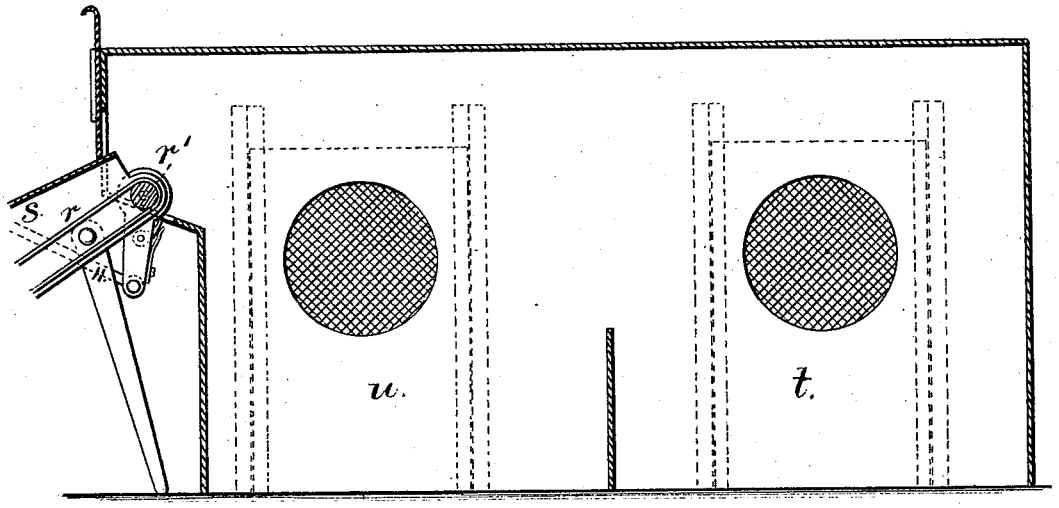
2 Sheets—Sheet 2.

A. HICKS.

Preparing Feathers for Bedding.

No. 200,197. **Patented Feb. 12, 1878.**

Fig. 3.



Witnesses

Chas. H. Smith
Harold Serrell

Inventor

Alonzo Hicks.

per Lemuel W. Serrell

Atty.

UNITED STATES PATENT OFFICE.

ALONZO HICKS, OF FLUSHING, NEW YORK, ASSIGNOR TO HIMSELF, MASON S. SEYMOUR, AND GEORGE W. QUACKENBOSS, OF SAME PLACE.

IMPROVEMENT IN PREPARING FEATHERS FOR BEDDING.

Specification forming part of Letters Patent No. **200,197**, dated February 12, 1878; application filed January 29, 1877.

To all whom it may concern:

Be it known that I, ALONZO HICKS, of Flushing, in the county of Queens and State of New York, have invented an Improvement in Preparing Feathers for Bedding, &c., of which the following is a specification:

Feathers have been prepared for mattresses by cutting up the large feathers of fowls and other birds and using them in addition to the small feathers.

The object of my present invention is to cut up the feathers in a rapid and reliable manner, and then to separate the heavy quills and refuse portions, and afterward to divide the feathers into different qualities adapted to different purposes.

I make use of a feeding-belt to supply the feathers from a hopper to a revolving cutter, and a series of fingers between the hopper and cutter serve to keep back the mass of feathers and to straighten them, so that the quills lie lengthwise, or nearly so, of the belt, and are cut up in short sections by the revolving cutter. The feathers fall from the revolving cutter into a blast of air from a fan-blower, and the refuse quills and pieces pass down through the blast, the down is blown into the farthest receptacle, the small feathers into a receptacle nearer the machine, and the heavier feathers lodge upon a belt, that carries them back toward the blast, so that the small feathers that are entangled with the heavy pieces are separated by the current of air.

In the drawings, Figure 1 is a vertical longitudinal section of the machine. Fig. 2 is a plan of the same, with the covers partially removed. Fig. 3 is a section of the receiving-bins and part of the machine.

A rotary cutter, *a*, or cylinder of knives, is mounted in a frame, *b*, and driven by suitable power. It is preferable to employ knives that are placed slightly diagonally, so as to cut with a shearing action against the stationary blade *c*. Adjacent to this stationary blade *c* is the roller *d* of the endless belt *e*, passing also around the roller *e'*, and this belt is moved along at the proper speed by the gearing 2 that revolves the roller *d*. The power is preferably applied to the shaft *d'*, upon which is a wheel gearing to the wheel *k'*.

Above the endless belt *e* is a hopper, *f*, into which the feathers are to be suplied, and between the hopper and the rotary cutter there are one or more ranges of fingers, *h*, placed above the belt *e*. I have shown two such ranges of fingers upon cross-shafts, from which the fingers depend, and there are crank-arms 8 outside the frame of the machine, connected together by a link, 3, and moved by a crank-pin revolved by the belt and pulleys 4 5, as seen by dotted lines in Fig. 1. These fingers serve the twofold purpose of keeping back the mass of feathers, so as only to allow the proper quantity to pass along on the belt, and also of arranging the long quills or feathers lengthwise of the belt, so that in passing through between the swinging finger ends the quills will be straightened or turned into the proper position for the rotary cutting-shear to separate the feathers transversely into pieces of the proper length for use. The roller *l'* serves to hold the feathers as they move along to the rotary cutter.

The cut feathers are retained within the covers *k*, and fall through the trunk *l* into the blast of air issuing from the trunk *m* of the blower *n*, and the heavy quills and refuse pieces fall through the blast of air into any suitable receptacle. All the lighter materials pass off with the blast of air, over the belt *r* and through the trunk *s*, into a room or chamber containing two or more bins. The down falls into the most distant bin, *t*, and the small feathers into the bin *u* nearer to the machine. This separation may be continued to any desired extent, according to the number of bins and the strength of the blast.

The heavy or matted lumps of feathers that lodge upon the belt *r* are carried back toward the blast, so as to be blown apart by the current of air, and the lighter feathers are blown out, and the heavier ones and quills and refuse are delivered from the end of the belt that is nearest to the blower.

In order to move the belt *r*, a pulley and belt with a slow motion might be applied to one of the rollers *r'* of the belt *r*; but it will generally be preferable to employ a ratchet-wheel operated upon by a pawl-lever that is reciprocated or swung by any suitable device,

such as the crank pin and link 11, which gives a progressive backward movement to the belt *r*, for the purposes aforesaid.

The gearing or belts for connecting and driving the respective parts may be of any suitable character. I have shown in the drawings a convenient arrangement of parts for this purpose.

I claim as my invention—

1. The combination, with the hopper *f* and feeding-belt *e*, of detaining-fingers *h* and a cutter, for the purposes and as set forth.

2. The combination, in a machine for preparing feathers, of a cutter to separate the feathers transversely, an air-blast to act upon the cut feathers as they fall, a chamber containing two or more bins for the feathers, and mechanism for presenting the heavier portion of the feathers a second time to the action of an air-blast, substantially as set forth.

3. The belt *r*, having a gradual backward movement toward the blower *n*, in combination with such blower and the rotary cutter for separating the feathers, and the trunk for the air-blast, substantially as set forth.

Signed by me this 25th day of January, 1877.

ALONZO HICKS.

Witnesses:
GEO. T. PINCKNEY,
CHAS. H. SMITH.