

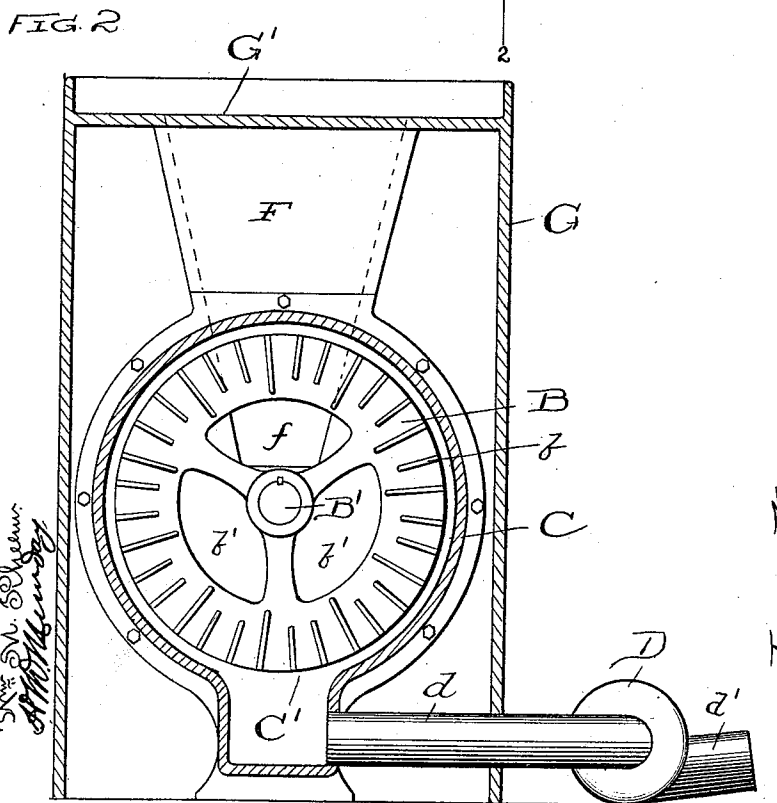
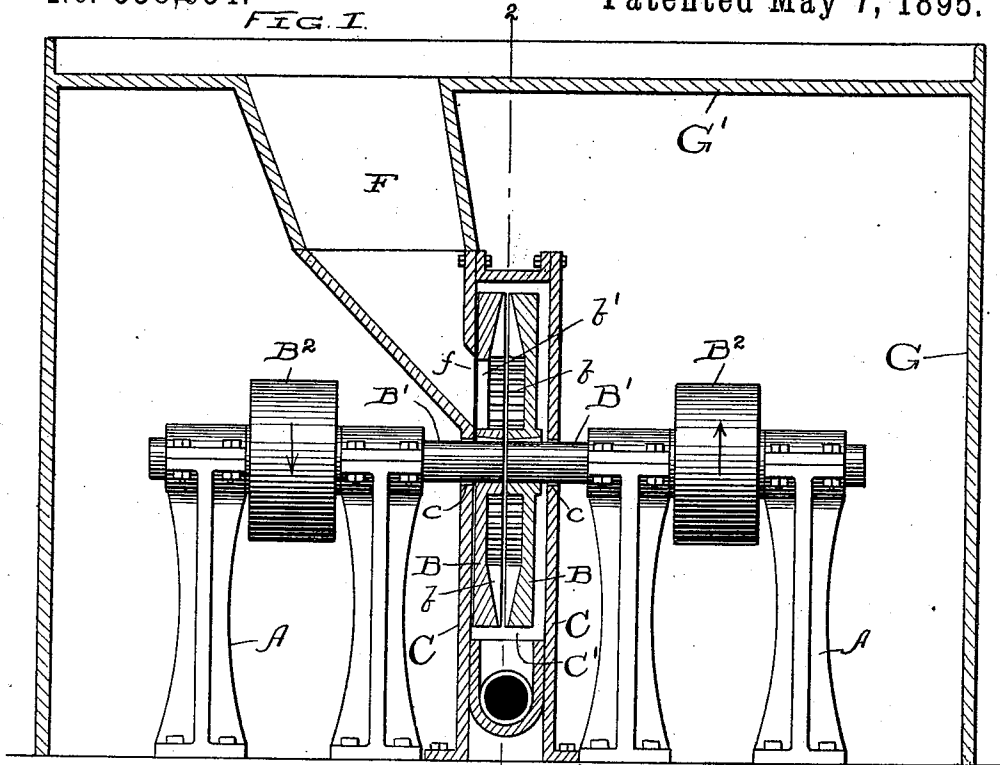
(No Model.)

J. BURTON.

PROCESS OF MANUFACTURING DOWN FROM FEATHERS.

No. 538,654.

Patented May 7, 1895.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN BURTON, OF HINSDALE, ILLINOIS.

PROCESS OF MANUFACTURING DOWN FROM FEATHERS.

SPECIFICATION forming part of Letters Patent No. 538,654, dated May 7, 1895.

Application filed November 2, 1894. Serial No. 527,696. (No specimens.)

To all whom it may concern:

Be it known that I, JOHN BURTON, a citizen of the United States, residing at Hinsdale, in the county of Du Page and State of Illinois, have invented a new and useful Improvement in Processes of Manufacturing Down from Feathers, of which the following is a specification.

My invention relates to the manufacture of artificial down from feathers.

I have discovered, and herein my invention consists, that short, stiff feathers, or pieces of feathers, which have heretofore been little utilized or considered as waste, may be practically utilized to great advantage in the manufacture of down by feeding or conveying such feathers in and by an air current between a pair of oppositely revolving disks furnished with cutting, tearing or disintegrating radial ribs; the cutting, tearing or disintegrating action of the oppositely revolving disks serving to reduce the quill, shaft or stiff portions of the feather to fine, elastic shreds or fibers without materially breaking, shortening or injuring the fibers of the web or vane portion of the feathers, while the co-operating action of the air current serves to feed or carry the feathers into, through and out of the disks and to keep the material properly distributed between the surfaces of the disks while being operated upon thereby, and to prevent the fine fibrous adhering material from matting, winding or wedging together and thus clogging the disks or their bearings and bursting or destroying the machine. The suction of the air current keeps the light, fine, fluffy fibrous material under perfect control while passing through and between the disks, so that its natural tendency to wind, mat or wedge together tighter and tighter, is effectually overcome.

In the accompanying drawings, which form a part of this specification, and in which like letters of reference indicate like parts in both views, Figure 1 is a central vertical sectional view of an apparatus for practicing my invention, and Fig. 2 is a vertical section on line 2 of Fig. 1.

In the drawings A represents the frame of the machine. B B are two oppositely revolving disks placed face to face in close juxtaposi-

tion to each other, and each furnished with a series of radial cutting, tearing or disintegrating ribs *b b*. The shafts B' B', to which the two disks B B are rigidly fixed, are driven in opposite directions by the driving pulleys B² B².

C is a case or shell surrounding the disks B B, the same having openings *c c* for the two shafts B' B'.

D is a fan for producing the air current or suction through the machine. This fan may be of any ordinary or well known construction known to those skilled in the art. The exhaust or inlet pipe *d* of the fan leads to the case or shell C and communicates with the chamber C', which may be termed the disintegrating chamber, as the disks B B are mounted in it. The discharge pipe *a'* of the fan leads to the bin or chamber where it is desired to deposit the manufactured down.

F is the feed hopper, its mouth or opening *f* communicating with the central feed openings *b' b'*, with which one of the disks B is provided near its hub or center.

G is a box or frame inclosing the machine, the top or cover G' of this box serving also as a feed table on which the feathers are deposited, and from which the operator feeds or shoves them into the hopper.

In operation the cutting, tearing or disintegrating disks B B are revolved rapidly in opposite directions, as indicated by the arrows in Fig. 1, and the fan D being set in motion so as to produce a strong suction or air current through the machine, the operator feeds or pushes the feathers into the hopper F. The feathers are then by the suction or air current conveyed into and between the two oppositely revolving disks B B near their center, and are then by centrifugal action and by the air current forced or conveyed radially outward and between the radial ribs *b b*, by the action of which the quill, shaft or stiff portion of the feathers are reduced to fine shreds or particles, thus reducing the whole mass of feathers to a uniform down-like product, consisting of fine, soft, elastic fibers; and the continued action of the air current serves to convey the finished product out of the shell C and from between the disks B B and discharge the same into the bin or

room to which the discharge pipe *d'* of the fan leads.

I claim—

5 The art or process of manufacturing down from feathers, consisting in feeding and conveying the feathers in and by an air current through an inclosing chamber and subjecting the same to a cutting, tearing or disinte-

grating operation while being so conveyed through such chamber, substantially as specified.

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Witnesses:

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