

(No Model.)

J. P. HILLARD.
COTTON WASTE PICKER.

No. 348,394.

Patented Aug. 31, 1886.

Fig. 1 -

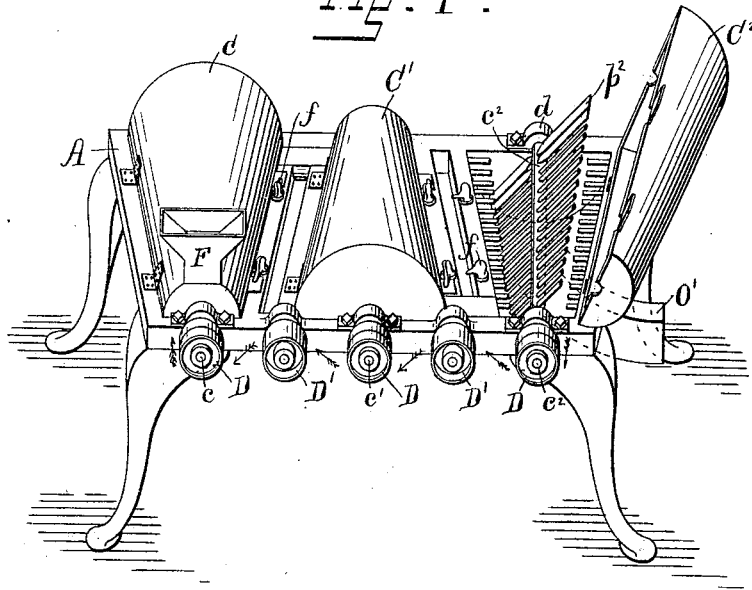
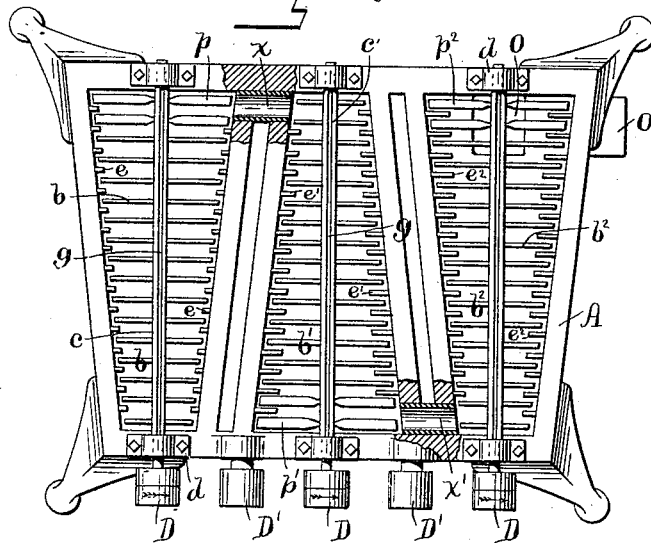


Fig. 2 -



WITNESSES:

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JAMES P. HILLARD, OF FALL RIVER, MASSACHUSETTS.

COTTON-WASTE PICKER.

SPECIFICATION forming part of Letters Patent No. 348,394, dated August 31, 1886.

Application filed September 9, 1885. Serial No. 176,563. (No model.)

To all whom it may concern:

Be it known that I, JAMES P. HILLARD, of Fall River, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Cotton-Waste Pickers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to that class of machines which are designed to separate and obtain the short fiber from the refuse or fluff of fiber-working machines.

The object of my invention is to provide an apparatus for the purpose of picking out and reclaiming the short fiber from the refuse and fluff, whereby the said short fiber is rapidly separated and secured, and the remaining thread-like material is lodged at fixed points, from whence it is readily removed.

Figure 1 represents a perspective view of the machine with the cover of one of the compartments thrown open. Fig. 2 represents a top plan view of the machine with the covers removed and part of the wood-work cut away to show the communicating passages.

In the drawings, A designates the frame-work having ordinary supports and provided with cross-pieces to hold the several cylinders C C' C², which have solid imperforate walls and are suitably shaped like a truncated cone and are placed with their axes in the plane of the frame-work, and are so constructed that their upper halves, lying above the plane of the said frame-work, can be opened so as to expose the interiors of the cylinders. Within the cylinders, and in the lines of their axes, are the rotating shafts *c c' c²*, provided with the straight radial arms or beaters *b b' b²* on their opposite sides and which are graduated in their dimensions to conform to the shape of the cylinders in which they are rotated. The beaters or arms *b b' b²* are broadened out into fan-like proportions *p p' p²* at the larger ends of the cylinders, in the neighborhood of the openings of the communicating passages *x x'*, for the purpose hereinafter described. On the interior of the cylinders C C' C² are oppositely-fixed spines or projections *e e' e²*, lying in the plane of the frame A, and which are straight and suitably proportioned and placed so as to pass between the rotated beaters *b b' b²* in the operation of the

machine. The spines *e* are quite short and of the same length, but the spines *e' e²* are of graduated lengths. The shafts *c c' c²* pierce the cylinders C C' C² at both ends, and have bearings *d d* in the sides of the frame-work A. At one end these shafts are each provided with the pulleys D D, between which are placed the loose pulleys D' D' for guiding the band that is twined through the series of pulleys in the path indicated by the arrows, for the purpose of revolving the shafts *c c' c²* in the same direction. Each shaft *c c' c²* has a longitudinal groove, *g*, extending its entire length, for the purpose hereinafter stated. The cylinder C is provided with the funnel-shaped feed or hopper F. The covers of the cylinders are made fast, when closed, by the locks *f*. At the larger end of the cylinder C, and to one side on about the level of the shaft *c*, is a passage-way, *x*, lying against the frame A and leading to the next cylinder, C'. There is also a similar passage, *x'*, leading from cylinder C' to C². At the larger end of the cylinder C², and at the bottom, is an opening, O, from which runs a box or chute, O'.

In operating the machine the covers of the cylinders are closed and made fast. The arrangement of the pulleys D D and the loose pulleys D' D' and of the band passing around them, causes all the shafts *c c' c²* to turn in the same direction. The waste being fed into the hopper F falls upon the beaters *b*, which toss and throw it about the interior of the cylinder C and against the projections *e e*, which are all of the same length and quite small, to prevent entanglement of the long pieces of threads which are now in the waste and which are subsequently wound around the shaft *c*. By the motion of the beaters the waste is gradually carried to the larger end of cylinder, C, where the beaters *p p' p²* are shaped fan-like for blowing the short-fibered material through the passage-way *x* into the next cylinder C', the long threads in the meanwhile having been wound around the shaft *c*. The process is repeated in the next cylinder, C', and so on to the larger end of the last cylinder, where the fluffy material is blown through the opening O into the box O', from where it is gathered. The threads that become wound on the shafts *c c' c²* are readily taken off by running a knife along the grooves *g g* and cutting them loose.

The fan-shaped beaters $p p' p^2$ may be modified in form to produce a more efficient fan.

The construction and arrangement of the fixed spines $e e' e^2$ are an essential feature of the mechanism, and, in conjunction with the action of the rotated beaters $b b' b^2$, have a combing effect on the material passed between them.

By the very simple operations of my machine I can reclaim all the fiber that would otherwise go as waste refuse.

The machine is very simple in its construction, is easily kept in order, and has proved very efficient and rapid in the performance of the work it is designed for—saving much hand-labor.

There may be various modifications made in the several parts of my invention without a substantial departure from the spirit of the same, as herein described and claimed.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with a cylinder provided on the interior with graduated fixed spines, of a rotary shaft having graduated radial arms and a longitudinal groove thereon and placed in the line of the axis of the cylinder, substantially as described.

2. The combination, with a series of truncated

cone-shaped cylinders having shafts rotating in the same direction, and in the lines of their axes provided with radial arms and longitudinal grooves and having fixed spines on their interior walls, of communicating passages on a level with the shafts, and leading in order from the larger end of one cylinder into the smaller end of the next, and so on, and of the exit in the last cylinder and the box leading therefrom, substantially as described.

3. The combination, with the cylinder C, of the shaft c , provided with the arms b and the groove g , substantially as described.

4. In combination the series of cylinders C C' C², the spines $e e' e^2$ upon said cylinder-walls, the rotary shafts $c c' c^2$, formed with grooves g , the arms $b b' b^2$, the beaters $p p' p^2$, said arms and beaters upon said shafts respectively, the passages xx' , the feeding-hopper F, and the outlet-chute O', said cylinders mounted in the frame and co-operated substantially as described.

In witness whereof I have hereunto set my hand.

JAMES P. HILLARD.

Witnesses:

JOSEPH A. MILLER,

J. A. MILLER, Jr.