

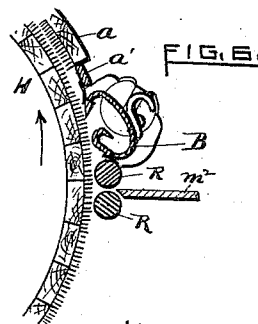
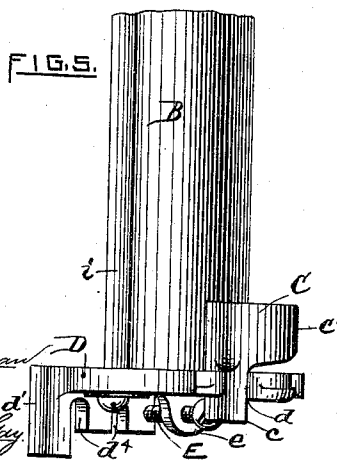
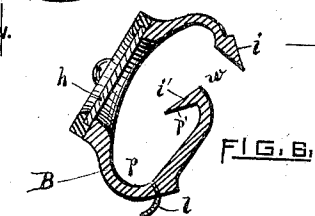
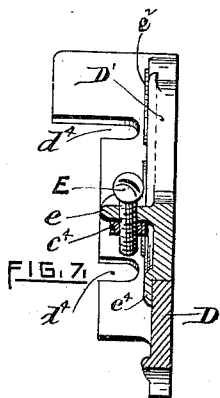
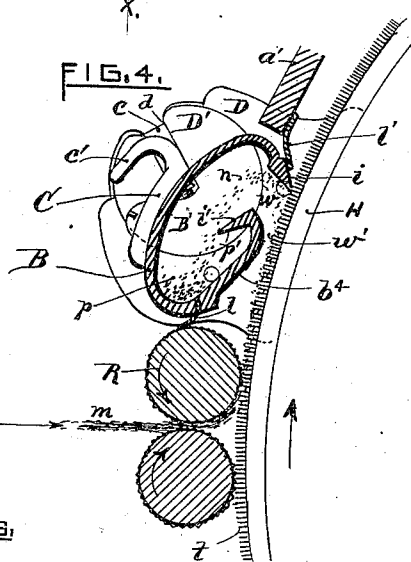
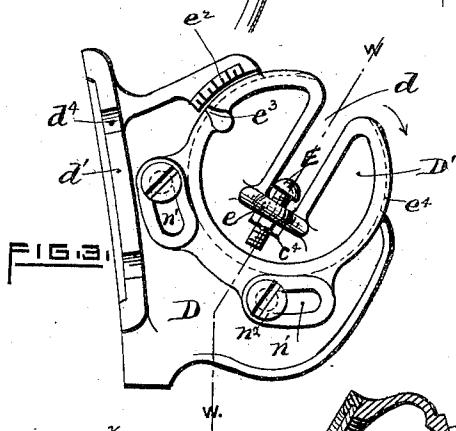
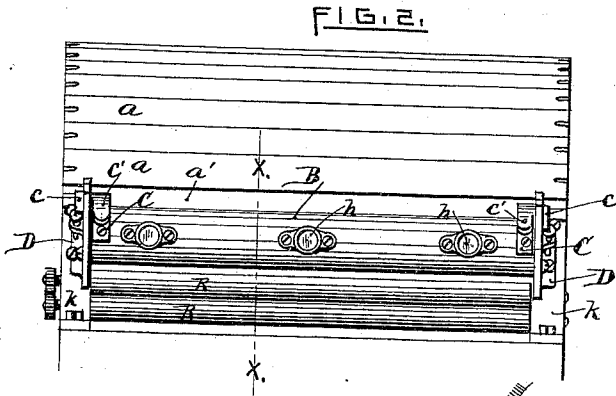
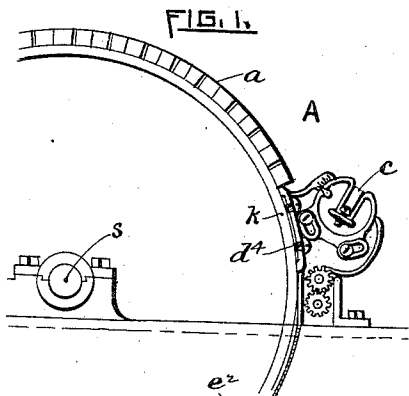
(No Model.)

S. D. KEENE.

MOTE AND DIRT COLLECTING ATTACHMENT FOR CARDING MACHINES.

No. 334,872.

Patented Jan. 26, 1886.



WITNESSES.

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UNITED STATES PATENT OFFICE.

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MOTE AND DIRT COLLECTING ATTACHMENT FOR CARDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 334,872, dated January 26, 1886.

Application filed August 6, 1885. Serial No. 173,705. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL D. KEENE, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Mote and Dirt Collecting Attachments for Carding-Machines; 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.

My present invention relates to machines for carding spinners' staple—as, for example, cotton, flax, wool, &c.; and it consists, essentially, in the novel form of the box or receptacle which receives and collects particles of dirt, motes, or other foreign substances combined with the staple.

It also consists in the adjusting device and frame therefor, whereby the collector is accurately adjusted with relation to the feed-rolls and carding-cylinder, the whole being attached to a carding-machine or engine above the feed-rolls, all as will be more fully hereinafter set forth, and claimed.

The objects of these improvements are to provide a carding-machine with an exteriorly-mounted box having an open side lying adjacent to the card-cylinder, means for adjusting the position of the box, and means for effecting its ready removal from the machine, said devices, when in use, serving to intercept and collect all or nearly all of the particles of extraneous matter that may have passed the "beaters" and entered the card-cylinder chamber combined with the fiber or staple. By means of these improvements the fiber is cleaned in a more thorough and inexpensive manner than heretofore. The issue of sliver being thus freed from said impurities is thereby materially increased in value. As the impurities are removed from the staple before being carried around the cylinder, the wire teeth or "clothing" of the latter, as well as the flats, may be kept in continuous use longer without grinding than has heretofore been deemed possible.

For the purpose of illustrating the invention I have prepared the accompanying sheet of drawings, in which—

Figure 1 represents, reduced, a partial end view of a carding-machine as provided with the improvements hereinafter claimed. Fig. 2 is a side or longitudinal view, in elevation, of the same, viewed from the feeding end. Fig. 3 is an enlarged end view of the frame or head which supports the collector, showing the adjusting device therefor. Fig. 4 is an enlarged transverse sectional view through the mote-collector box and feed-rolls, the view also showing a portion of the card-cylinder, the latter being covered with "wire clothing," as common. Fig. 5 is a partial plan view of the collector and its frame. Fig. 6 is a partial transverse sectional view taken on line *xx* of Fig. 2. Fig. 7 is a transverse sectional view taken on line *ww* of Fig. 3, and Fig. 8 is a cross-sectional view of the collector-box as taken through one of the "sights," the latter adapting the interior of the box to be inspected while in use.

The following is a more detailed description of the invention, including the manner of its construction and method of operation.

A, again referring to the drawings, designates a common form of carding-machine, such as are generally employed in cotton-factories, said machine being provided with the wire-covered cylinder *H* and feed-rolls *R*, the same being further provided at its front or feeding end with my improved adjustably-mounted metallic collector-box or receiver *B*. Said box is arranged immediately above and parallel with the upper feed-roll, *R*. The box *B* extends longitudinally across the machine, said box being hollow to form the chamber *B'*, a cross-section thereof approximating in outline the form of an elongated letter, *G*, the open side of the collector in use being placed adjacent to the card-cylinder. The upper portion of the box is provided with the longitudinal flange or edge, *i*, which is ground off true and smooth, the same being adapted to just clear the points of the wire teeth *t*, secured to the revolving cylinder. The lower portion of the box extends upwardly and terminates in the interior angular flange, *i'*, thereby forming between it and the shell the

pocket or recess p' , and also forming the narrow throat or opening w' between said shell and the cylinder H, all as fully shown in Fig. 4.

The said flanges i i' are separated by the narrow opening w , which permits the passage of the motes or other foreign matter into the chamber B'. Secured to the under side of the box is the strip of flexible leather l , or other equivalent material, the same having its free edge resting upon the top feed-roll.

D designate right and left end pieces or frames, which are secured to the heads k of the card. These pieces are provided with slotted screw-holes d' , formed in the flanges thereof, thereby adapting the frames D to be readily connected with or detached from the card, as desired. A circular-shaped opening is formed in each of the frames D, within which is loosely fitted the circular end D', having the slot or opening d therein, said end being further provided with the two short slotted openings, n' , formed in the edge or rim thereof. At the base of the slot d is a projecting ear, e , which is tapped to receive the adjusting-screw E, the latter being provided with the check-nut e' , as shown.

e^3 indicates a pointer formed on the upper portion of the circular end, the same being adapted to coincide with the short scale or gage e^2 , cast or otherwise formed in the frame D, all as fully shown in Fig. 3. By means of this gage the ends D', carrying the collector B, are adapted to be adjusted with relation to the frames D, the parts being secured in position by means of the screws n^2 , which pass through the elongated openings n' and are tapped into the frames D.

C designates a metallic handle or lifting-piece secured to each end of the collector-box, the same being elongated to form the overhanging portion c , which is adapted to rest freely in the slot d and be supported by the adjusting-screw E, before described.

a a designate the series of top-flats, and a' the deflector-board, the top-flats being covered with wire points, and mounted around the cylinder H, as common.

h indicates a glass-covered opening formed in the shell, (see Figs. 2 and 8,) by means of which the chamber B' may be examined by the operator or person in charge.

The adjustment of the collector-box both radially and vertically is effected by means of the screws E in connection with the pieces C, the projecting portion c thereof resting upon the said screws, as shown in Fig. 1. The parts C further serve as handles by which the box may be readily removed from the machine, and its contents discharged. The collector may be quickly and accurately replaced in position by the attendant without further adjustment.

The angular adjustment of the flange portion i and throat w' with relation to the card-cylinder H is effected by means of the screws n^2 , which are first loosened until the desired position is attained, after which said screws

are made to firmly clamp the parts D D' together. By noting the relative position of the pointer e^3 and gage e^2 , corresponding to the throat-opening w' , the amount of the latter may be readily determined at any time.

The operation may be described substantially as follows: Assuming cotton m to be the staple used, the same is passed from the bat to the apron or trough m^2 , Fig. 6, from whence it passes between the feed-rolls R and onto the rapidly-revolving wire-covered card-cylinder H. Now, by reason of the rapid rotation of said cylinder, a current of air is produced just above the feed-rolls, which, together with the centrifugal force, tends to separate the motes and other impurities from the fiber, the latter at the same time, owing to its comparatively less weight, being carried around and removed from the cylinder, as usual. The motes n , Fig. 4, after passing the throat w , are intercepted by the flange i , which deflects them through the throat w and into the chamber B', the internal angular flange, i' , and its inclosed chamber p' , at the same time forming a barrier to prevent the escape of the lighter particles of the impurities from the box. The heavier particles rest upon the bottom of the chamber B' at p . The leather strip l at the base of the receiver serves to maintain a comparatively air-tight joint between the chamber and the top feed-roll, a corresponding strip, l' , serving to make a joint between the top of the collector and the front deflector-board, a' .

I am aware that it is not new to combine in a carding-machine a mote or dirt receiver with the feed-rolls, therefore I do not, broadly, claim such combination; but

What I do claim, and desire to secure by Letters Patent of the United States, is—

1. The collector-box or receptacle B, hereinbefore described, the same being substantially uniform in cross-section throughout its length and provided with the flange or deflector i and interior flange, i' , said flanges or ribs being separated from each other to form the longitudinal throat w , substantially as shown, and for the purpose set forth.

2. The collector-box B, herein described, provided with a lifting-piece, C, at each end thereof, in combination with end frames, D D', within which the box is mounted, and means, substantially as shown and described, for adjusting the box, the whole constructed and arranged substantially as described.

3. The mote-collector box B, herein described, provided with the longitudinal flanges i i' , forming the throat w , and the depending flexible strip l , in combination with the frames D D', supporting said box, the card-frame k , feed-rolls R, and means, substantially as described, whereby the said frames D D' are removably secured to the card-frame, the whole constructed and arranged substantially as shown and set forth.

4. The combination, with the frames k and feed-rolls R thereof, of the collector-box B, mounted in frames D D' immediately above

said feed-rolls, and means, substantially as shown and described, for attaching the frames D D' to said card-frames, the whole arranged substantially as shown, and for the purpose set forth.

5 5. The combination, with the carding-cylinder H, card-frames *k*, and feed-rolls R, of the mote-collector B, frames D', adapted to support the box B, and provided with slotted openings *n'*, frames D, means for adjustably
10 securing the frames D' thereto, consisting of screws *n*², passing through the slotted openings *n'*, formed in the said frames D', and means, as described, for attaching the frames D to the
15 card-frame, all substantially as shown and set forth.

6. The combination, with the mote-collector box B, provided with end pieces C, of the frames D, adapted to be detachably secured
20 to the card-frame above the feed-rolls, frames D', provided each with slots *d n'*, and an adjusting-screw, E, and screws *n*², passing through said slots *n* into the frames D, the whole constructed and arranged substantially
25 as shown and described.

7. The cylinder H, feed-rolls R, mote-collector box B, frames D' D, having the scale or gage *e*³ *e*², formed thereon, and means,
30 substantially as shown and described, for adjustably securing said frames D' D in position, in combination with the flexible strip, *l'*, deflector-board *a'*, carrying said strip, and the flexible strip *l*, secured to the under

side of the box B, the whole arranged and adapted for use substantially as shown and
35 hereinbefore set forth.

8. The improved mote-collector box B, herein described, provided with one or more glass-covered openings, *h*, ends D', each having the slot *d* and adjusting-screw E therein, frames
40 D, carrying said ends, and screws *n*², adapted to retain the box B and the ends D' in position, substantially as shown and described.

9. The herein-described attachment or mote-collector for carding-machines, the same consisting of the elongated hollow box B, which
45 is substantially uniform in cross-section throughout its length, the same being provided with the longitudinal flanges or deflectors *i i'*, a throat, *w*, separating said flanges and
50 communicating with the interior of the box, the box being substantially of the length of the feed-rolls, and further consisting of the slotted frames D', provided with screws E, for
55 adjusting the box with relation to the card-cylinder H, frames D, adapted to receive the frames D', and screws *n*², for retaining the same in position, substantially as shown and set forth.

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

SAMUEL D. KEENE.

Witnesses:

NELSON E. CHURCH,
THOMAS A. JENCKES.