(No Model.) 2 Sheets—Sheet 1.

J. ABBOTT.

Apparatus for Cleaning the Cylinders of Carding Machines.

No. 240,631. **Patented April 26, 1881.**

Fig. 2.

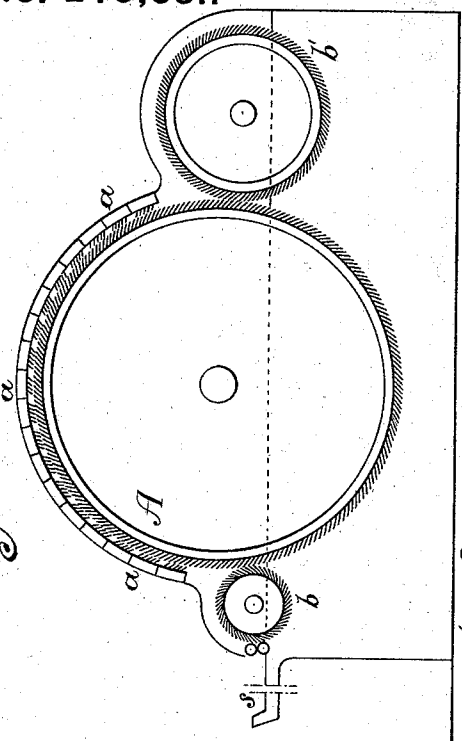


Fig. 3.

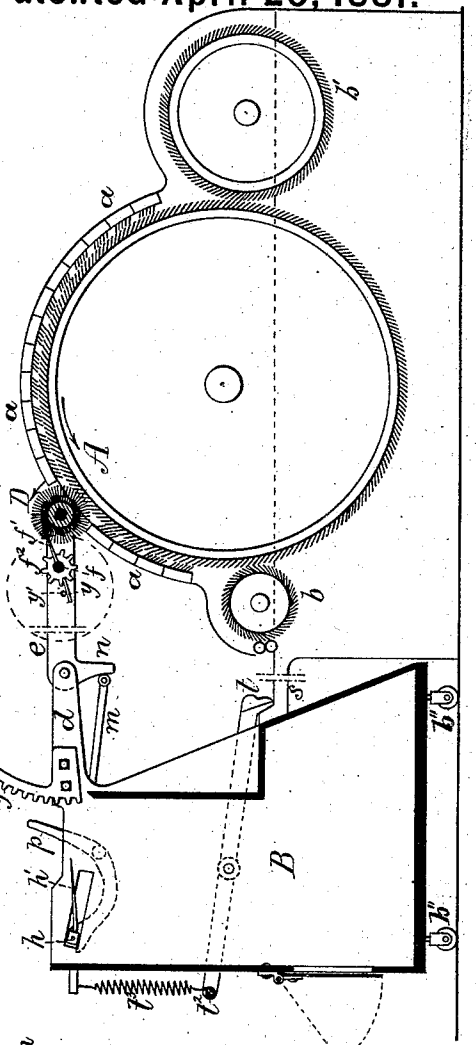


Fig. 1.

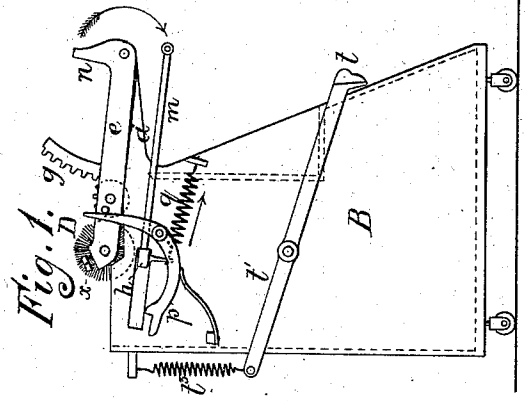
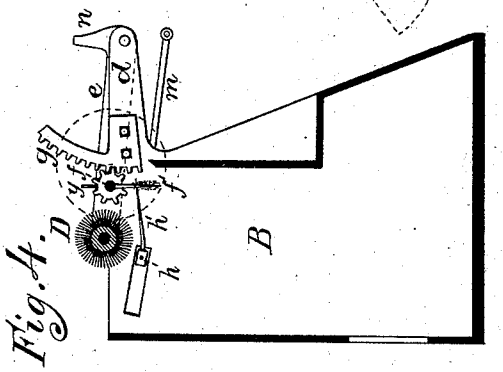


Fig. 4.



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Harry Smith

Inventor:
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(No Model.) 2 Sheets—Sheet 2.

J. ABBOTT.

Apparatus for Cleaning the Cylinders of Carding Machines.

No. 240,631. **Patented April 26, 1881.**

Fig. 5.

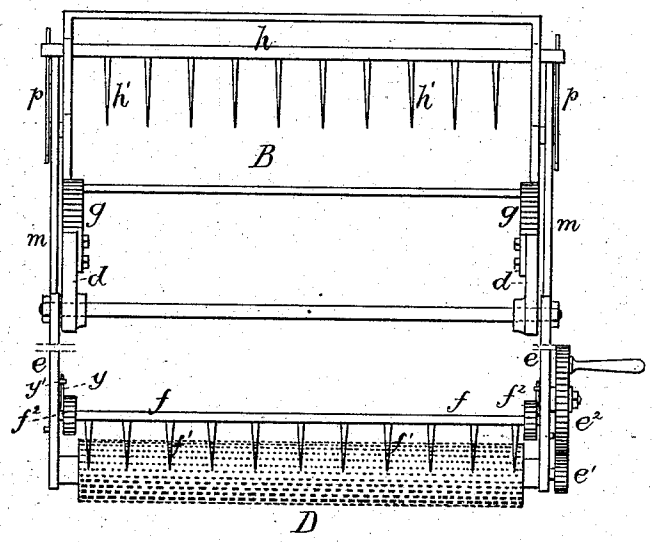
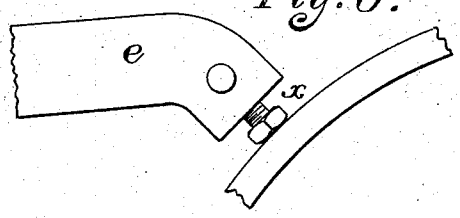


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN ABBOTT, OF PHILADELPHIA, PENNSYLVANIA.

APPARATUS FOR CLEANING THE CYLINDERS OF CARDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 240,631, dated April 26, 1881.

Application filed August 2, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOHN ABBOTT, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Apparatus for Cleaning the Cylinders of Carding-Machines, of which the following is a specification.

The object of my invention is to provide a portable apparatus whereby the cleaning of the cylinder-teeth may be effected more conveniently and rapidly than by the use of the usual hand-comb.

In the accompanying drawings, Figure 1, Sheet 1, is a side view of my improved device for cleaning the teeth of card-cylinders, the parts being in the position to which they are adjusted when the device is not at work; Fig. 2, a longitudinal section of a top-flat carding-machine in connection with which the device shown in Fig. 1 is intended to be used; Fig. 3, a longitudinal section, showing the cleaning device adjusted for cleaning the cylinder of the carding-machine; Fig. 4, a sectional view of part of Fig. 1, with some of the parts in a different position from that shown in said figure; Fig. 5, Sheet 2, a plan view of parts of Fig. 3; and Fig. 6, a detached view, drawn to an enlarged scale, of part of the device.

In Figs. 2 and 3, A represents the main cylinder of a carding-machine; *a*, the top-flats which act in conjunction therewith; *b*, the licker-in, and *b'* the doffer.

B, Figs. 1 and 3, is a box or receptacle mounted upon suitable casters, *b''*, and having at the top projecting arms *d d*, to which are pivoted arms *e e*, the outer ends of the latter having bearings for the shaft of a brush, D, composed of bristles set in a wooden block or cylinder in the manner adopted in making an ordinary bristle brush. One end of the brush-shaft projects beyond the arm in which the bearing is formed, and this projecting end of the shaft is provided with a cog-wheel, *e'*, which engages with a pinion, e^2, turning on a stud on the arm, and provided with a suitable handle or crank, by which its rotation may be effected. A transverse shaft, *f*, extends between the arms *e*, in the rear of the brush D, and is adapted to bearings in said arms, the shaft being provided with a series of teeth, *f'*, and having near each end a pinion, f^2, said pinions, under the circumstances described hereinafter, engaging with segmental racks *g* on the arms *d*.

To slots in the opposite sides of the receptacle B are adapted the opposite ends of a transverse bar, *h*, having teeth *h'*, the ends of the bar projecting beyond the sides of the receptacle and being connected to guided rods *m*, which are acted upon by projections *n* on the arms *e*, these projections, when the arms are adjusted to the position shown in Fig. 3, tending to thrust the bar *h* rearward, so that the projecting ends will engage with and be retained by the notched ends of spring-catches *p*, hung to the sides of the receptacle B. Springs *q* tend to draw the toothed bar *h* forward when it is released from the control of the catches *p*.

When the cleaning device is applied to the carding-machine, as shown in Fig. 3, it is retained by the engagement of the upturned ends of the projections *s* on the frame of the carding-machine, with the hooked ends *t* of arms *t'* pivoted to the sides of the receptacle B, the rear ends of these arms being connected together by a rod, t^2, acted upon by a spiral spring, t^3, the tendency of which is to elevate the rod t^2, and thus depress the hooked ends of the arms *t'*, and prevent them from being accidentally disengaged from the projections *s*.

In order to effect the cleaning of the teeth of the cylinder A a number of the top-flats *a* are removed, the receptacle B moved to the position shown in Fig. 3, and the arms *e* turned over, so that the brush D will occupy the opening made by the removal of the flats *a*, the ends of the bristles projecting between the teeth of the cylinder and almost to the bases of said teeth. The ends of the arms *e* are provided with adjusting-screws *x*, Fig. 6, which rest on the side frames of the carding-machine, and by the adjustment of which the extent to which the bristles penetrate the toothed covering of the cylinder A may be readily governed. The brush D, being applied to the teeth of the cylinder, as shown, is rotated by the attendant through the medium of the cog-wheel *e'* and pinion e^2, and at the same time the cylinder A is slowly turned, so as to bring new portions of its toothed covering under the action of the brush. The bristles of the brush D effectually remove the lint, seeds, and dirt from the teeth of the cylinder without offering

that resistance to the passage of the teeth which renders the use of a wire brush objectionable, the friction between the bristles and the teeth not being sufficient to prevent the free rotation of either brush or cylinder, and not being such as to wear or otherwise injure the teeth. The dirt and lint is stripped from the brush D by the teeth f' of the shaft f, said teeth projecting some distance beneath the surface of the brush, and preferably occupying the angle shown in Fig. 3 in respect to said brush, the teeth being retained in this position by the contact of pins y on the shaft f with stops y' on the arms e.

When the cleaning of the teeth of the cylinder has been completed the arms e are turned over to the position shown in Fig. 1, and the receptacle B released from the frame of the carding-machine and moved to the next machine to be cleaned. As the arms e are turned over the pinions f^2 on the shaft f engage with the segmental racks g, and a partial rotation is thereby imparted to said shaft f, so as to clear the teeth f' from the brush D and turn them to the position shown in Fig. 4. When the teeth f' have reached this position lugs on the arms e actuate the catches p, and thereby release the bar h from the control of said catches, the bar being then drawn forward, owing to the action of the springs q, so that the teeth h' will enter the spaces between the teeth f', whereby, when the arms e are again turned over to apply the brush D to the cylinder of another machine, the teeth h' will remove from the teeth f' the lint, seeds, and dirt which the latter teeth have received from the brush D. As the arms e reach the limit of their movement in the direction of the arrow, Fig. 1, the projections n on said arms act on the rods m and effect the retraction of the bar h until its ends are caught and retained by the spring-catches p.

A cleaning device such as that above described can be readily moved about and applied to one carding-machine after another, the cleaning of the teeth of the carding-cylinders being effected more thoroughly and rapidly than with the usual hand-combs, and without the exercise of skilled labor, a boy or unskilled attendant being competent to effect the cleaning of the cylinder with my improved device.

The machine has been especially adapted for cleaning the teeth of the cylinders of top-flat carding-machines, as shown and described; but it may also be used for cleaning the teeth of the cylinders of machines using strippers and workers in place of the top-flats.

I claim as my invention—

1. The within-described cleaning apparatus, in which a box or receptacle, B, mounted on wheels or casters, and provided with means whereby it may be locked to or released from the frame of a carding-machine, is combined with a brush and brush-operating gearing hung to the outer ends of arms e, pivoted at their opposite ends to said box or receptacle, whereby the brush may be turned from a position above the receptacle to a position in advance of the same, for acting on the upper portion of the card-cylinder, as set forth.

2. The combination of the carding-machine with a cleaning-brush, D, and a portable frame or receptacle having pivoted arms carrying the brush-shaft bearings, and provided with adjusting-screws x, adapted to rest on the frame of the carding-machine, as specified.

3. The combination of a portable frame or receptacle, B, a cleaning-brush, D, a shaft, f, having teeth f', arms e, pivoted to the frame or receptacle B, and carrying the brush D and shaft f, and means, substantially as described, whereby, on the movement of the arms e, the shaft f will be partially rotated and the teeth f' will be caused to engage with or will be disengaged from the brush, as set forth.

4. The combination of a frame or receptacle, B, having pivoted arms e, a brush, D, and toothed shaft f, carried by said arms, means for suitably rotating the shaft as the arms are turned on their pivots, and a bar, h, capable of moving longitudinally in the frame or receptacle B, and having teeth h', for engaging with and cleaning the teeth of the shaft f, as set forth.

5. The combination of the frame or receptacle B, having pivoted arms e, the brush D, and toothed shaft f, carried by said arms, a spring-actuated bar, h, having teeth h', and means, substantially as described, whereby, on the movement of the arms e in one direction, the bar h will be retracted and retained in its retracted position, and on the movement of the arms in the opposite direction will be released and permitted to move forward, as set forth.

6. The combination of a carding-machine having projections s with a portable frame or receptacle, B, carrying a cleaning-brush and provided with spring-arms t', having hooked ends t, as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN ABBOTT.

Witnesses:
ALEXANDER PATTERSON,
HARRY SMITH.