

(No Model.)

H. EDWARDS & L. F. LONGMORE. COMBING MACHINE.

No. 583,896.

Patented June 8, 1897.

Fig. 1.

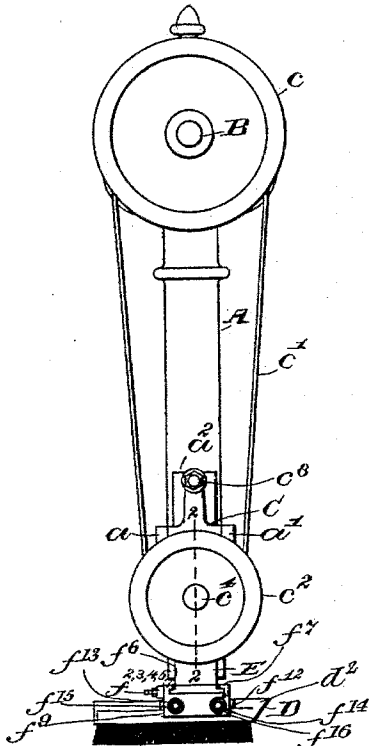


Fig. 2.

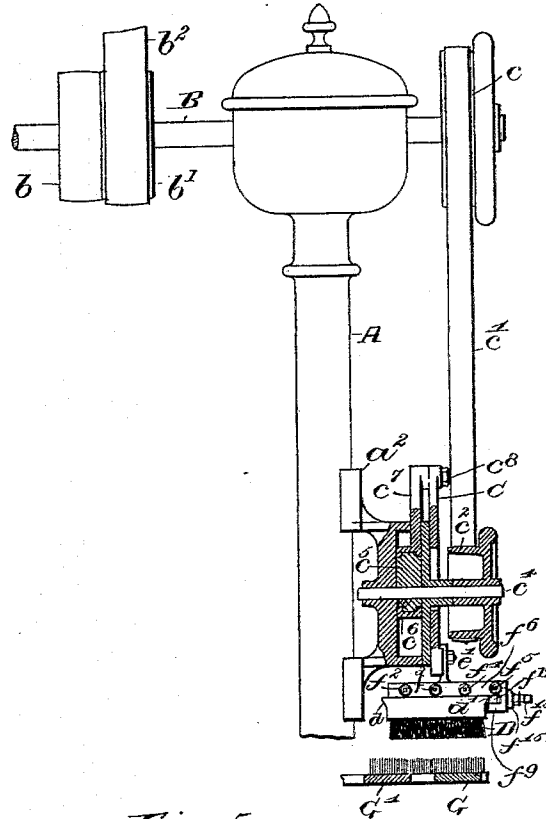


Fig. 3.

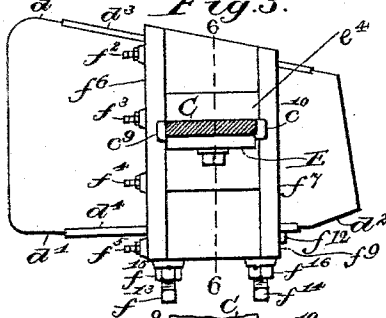


Fig. 5.

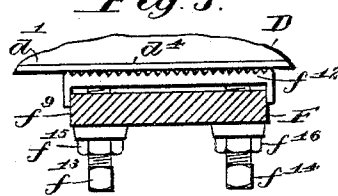


Fig. 4.

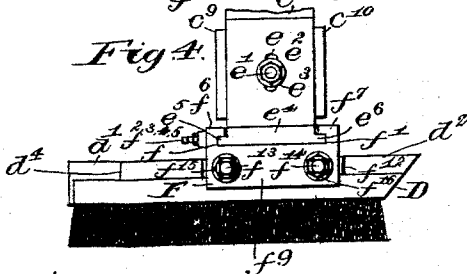
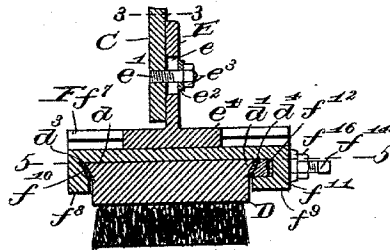


Fig. 6.



Witnesses -
Kirkley Hyde.
Arthur S. Cutler

Inventors -
Henry Edwards &
Lewis F. Longmore,
By Albert M. Moore,
Their Attorneys.

UNITED STATES PATENT OFFICE.

HENRY EDWARDS, OF ANDOVER, AND LEWIS F. LONGMORE, OF LOWELL,
MASSACHUSETTS; SAID LONGMORE ASSIGNOR TO SAID EDWARDS.

COMBING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 582,896, dated June 8, 1897.

Application filed September 25, 1896. Serial No. 606,941. (No model.)

To all whom it may concern:

Be it known that we, HENRY EDWARDS, of Andover, in the county of Essex, and LEWIS F. LONGMORE, of Lowell, in the county of Middlesex, Commonwealth of Massachusetts, citizens of the United States, have invented a certain new and useful Improvement in Combing-Machines, of which the following is a specification.

Our invention relates to combing-machines; and it consists in the devices and combinations hereinafter described and claimed.

In the class of machines to which this invention relates the stock or wool is beaten by quick blows of a vertically-reciprocating "dabbing-brush" upon circular combs having vertical teeth or pins, two smaller combs being usually placed within a larger comb tangentially thereto and the adjacent parts of the combs revolving in the same direction about their respective centers, so that the wool being pressed upon the adjacent parts of the combs is drawn out or carded by the separation of these parts as the combs revolve. The brush has a wooden back perforated to receive bristles and is narrow at the point of tangency of the combs, and the sides of the body of bristles are diverging curves parallel with the curvature of the combs. The wool descends over an incline and is dabbed onto the combs as it leaves said plate in such a manner that the greatest resistance to the brush is on the narrow end of the same and tends to pry the brush off from the foot of the slide, to which said brush is commonly attached by screws, and to split the brush through the screw-holes and through the holes which receive the bristles and in which the bristles are retained by binding-wires. The brushes must be adjusted very carefully to the combs and to the point of contact of the combs, and when the screws which secure the brushes to the feet of the slides have become loosened larger screws must be substituted, which sometimes split the brushes, and sometimes when the screws (owing to carelessness) are too long the binding-wires are cut by them and allow the bristles to fall out. Sometimes the brush becomes partially detached from the foot and is thrown with violence onto the teeth of the combs, causing several hundred

dollars' worth of damage and several days of time lost in repairs. The only means of adjusting the brush laterally now in use is by removing the screws and inserting them in a new place. Such adjustment becomes necessary when the bristles have been worn in certain parts of the brush.

The object of this invention is to provide a means of readily and securely attaching the brush to the slide without danger of splitting the brush and means of lateral and vertical adjustment of the brush with reference to the combs.

In the accompanying drawings, Figure 1 is a side elevation of one of the vertical hollow posts of a "Noble" comb, showing the dabbing-brush provided with our improvement and the usual means of driving the dabbing-brush from a pulley on the main shaft; Fig. 2, a rear elevation of said post, part of the main shaft, the fast and loose pulleys, a brush provided with our improvement, and a vertical section on the line 2 2 in Fig. 1 of the slide-supporting bracket and the eccentric; Fig. 3, a plan of the brush provided with our improvements and a horizontal cross-section of the slide on the line 3 3 in Fig. 6; Fig. 4, an outside elevation of the brush and its attaching and adjusting devices and a part of the slide; Fig. 5, a vertical section on the line 5 5 in Fig. 6 of the brush attaching and adjusting devices; Fig. 6, a central vertical section on the line 6 6 in Fig. 3 of the brush and its attaching and adjusting devices.

The hollow vertical post A and a similar post at the other side of the machine support the main shaft B, provided with a fast pulley b and a loose pulley b', the fast pulley being driven by a belt b² from an overhead shaft. Another pulley c, fast on the shaft B, carries a belt c', which drives the pulley c², fast on the shaft c⁴, an eccentric c⁵ being also fast on said shaft c⁴ to give motion to the eccentric-strap c⁶ and eccentric-rod c⁷ and thereby to reciprocate vertically the slide C, which runs in guides a a' on the bracket a², secured to the post A, the upper end of said rod c⁷ being pivoted to said slide at c⁸. These parts are all of any usual construction and operation, except that the slide C usually is provided with a horizontally-extending foot, to the un-

der side of which the brush D is secured by bolts passing down through holes in said foot into the back of said brush, and except as hereinafter stated.

Two ways of adjusting the lowest position of the brush are used. In some machines the foot is vertically adjustable on the slide. In others the pivot c^3 of the eccentric-rod is adjustable vertically on the slide. In the former case the slide is made in two parts, the lower one of which carries the foot and is provided with a vertical screw-threaded stud which passes through a fork on the upper part of the slide and is held by nuts and check-nuts turning on said stud above and below said fork.

We use a plate E, which is guided by vertical ribs $c^9 c^{10}$ on the slide C and is provided with a vertical slot e , through which projects a horizontal screw-threaded stud e' , fixed in said slide, so that said plate E may be adjusted vertically on said slide a distance determined by the length of said slot e . When adjusted, the plate E is secured firmly by a washer e^2 and nut e^3 , turning on said stud e' , as shown in Figs. 3, 4, and 6.

The plate E has a horizontal foot e^4 integral therewith and provided with lateral guides or flanges $e^5 e^6$, which are received in the grooves $f' f''$ of the cross-slide F, said cross-slide carrying the brush D and being adjustable on said plate to move said brush laterally into its proper position with reference to the outer comb G and inner comb G'. The cross-slide F after such adjustment is held rigidly by horizontal set-screws $f^2 f^3 f^4 f^5$, which turn in the grooved rib f^6 of said cross-slide and thrust against the foot e^4 of the plate E.

The sides of the back of the brush D are usually longitudinally curved to correspond with the sides of the mass of bristles—that is, into parallelism with the curvature of the combs near their point of tangency.

We make the sides $d d'$ of the brush-back straight, (except at the outer front corner d^2 of the outer side d'), but not parallel, but diverging backwardly and upwardly, as shown in Figs. 2, 3, and 6.

The side edges of the cross-slide are provided with downhanging ears $f^8 f^9$, between which the brush is inserted, one, f^8 , of which ears is beveled on its inner face at f^{10} parallel with the corresponding side of the brush, the other ear, f^9 , having a square groove f^{11} to receive a wedge-piece f^{12} , which is crowded by screws $f^{13} f^{14}$ against the outer side d' of

the brush to prevent said brush from moving in said cross-slide, the screws $f^{13} f^{14}$ being prevented from accidentally becoming loose by check-nuts $f^{15} f^{16}$, which turn on said screws against said cross-slide.

The sides of the brush are provided with armor-plates $d^3 d^4$ to receive the pressure of the wedge-piece f^{12} and the downhanging ear f^8 , as shown in Figs. 3, 4, 5, and 6, and to prevent the marring of said sides.

We claim as our invention—

1. The combination of the vertical slide, the foot, secured thereto, a cross-slide movable on said foot, and having downhanging ears, a brush, having beveled side edges to enter between said ears, one of said ears being beveled on the inner side to fit an edge of said brush, and the other of said ears having a groove, a wedge arranged in said groove and screws turning in said last-named ear to force said wedge against said brush.

2. The combination of the vertical slide, the foot, secured thereto, a cross-slide movable on said foot, and having downhanging ears, a brush, having beveled side edges to enter between said ears, one of said ears being beveled on the inner side to fit an edge of said brush, and the other of said ears having a groove, a wedge arranged in said groove, screws turning in said last-named ear to force said wedge against said brush, and armor-plates secured to the sides of said brush, to engage said beveled ear and said wedge.

3. The combination of the vertical slide, the foot, secured thereto, a cross-slide movable on said foot, and having downhanging ears, a brush, having beveled side edges to enter between said ears, one of said ears being beveled on the inner side to fit an edge of said brush, and the other of said ears having a groove, a wedge arranged in said groove, screws turning in said last-named ear to force said wedge against said brush, and an armor-plate provided with teeth or serrations and secured to the side of said brush to engage said wedge.

4. A dabbing-brush, having beveled sides and having armor-plates to protect said sides.

In witness whereof we have signed this specification, in the presence of two attesting witnesses, this 5th day of August, A. D. 1896.

HENRY EDWARDS.

LEWIS F. LONGMORE.

Witnesses:

ALBERT M. MOORE,
KIRKLEY HYDE.