2 Sheets—Sheet 1.

A. W. MOORE.

Machine for Trimming Bristles.

No. 206,400. **Patented July 30, 1878.**

Fig. 1.

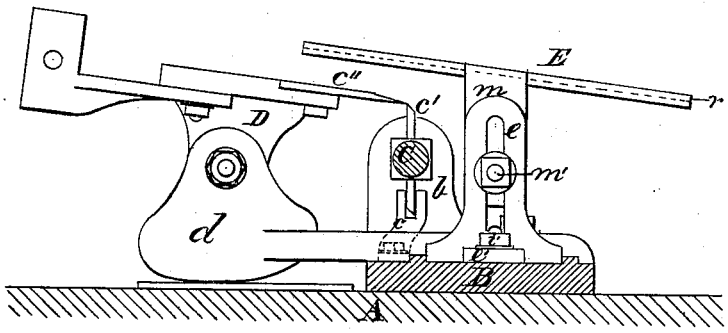
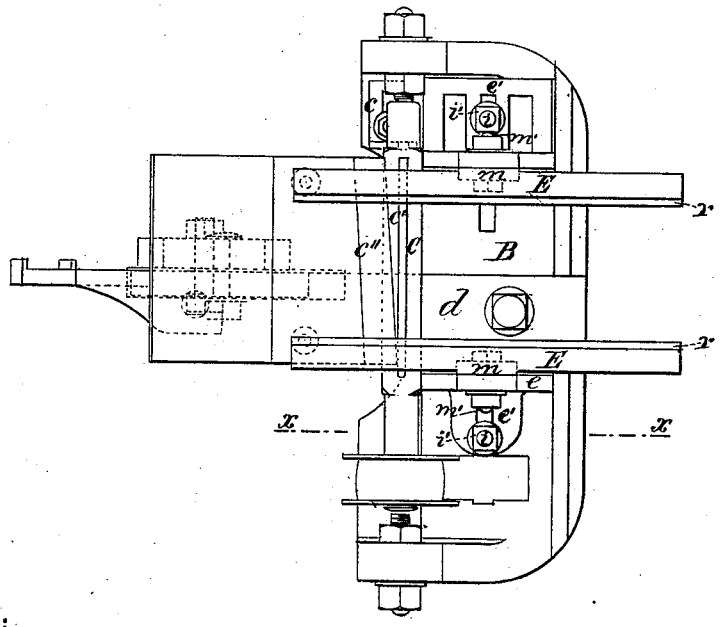


Fig. 2.



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2 Sheets—Sheet 2.

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Fig. 3.

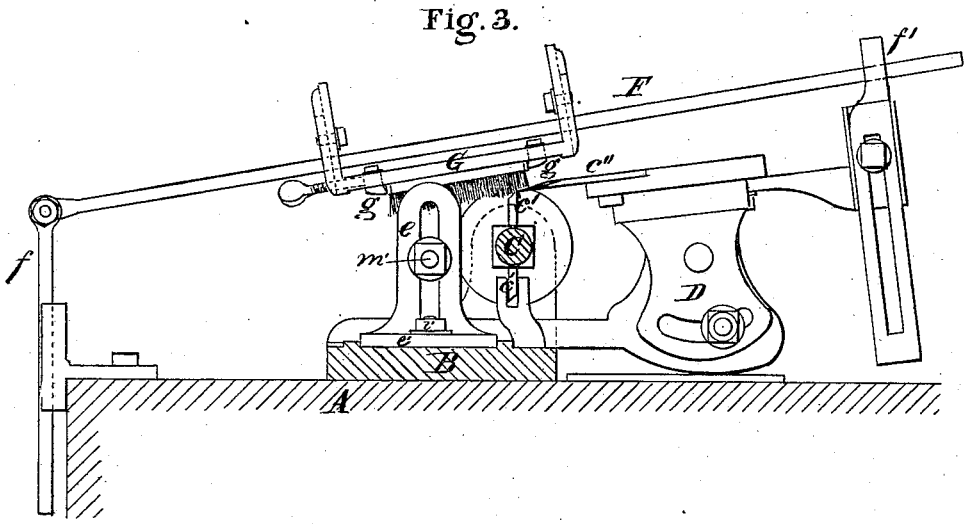
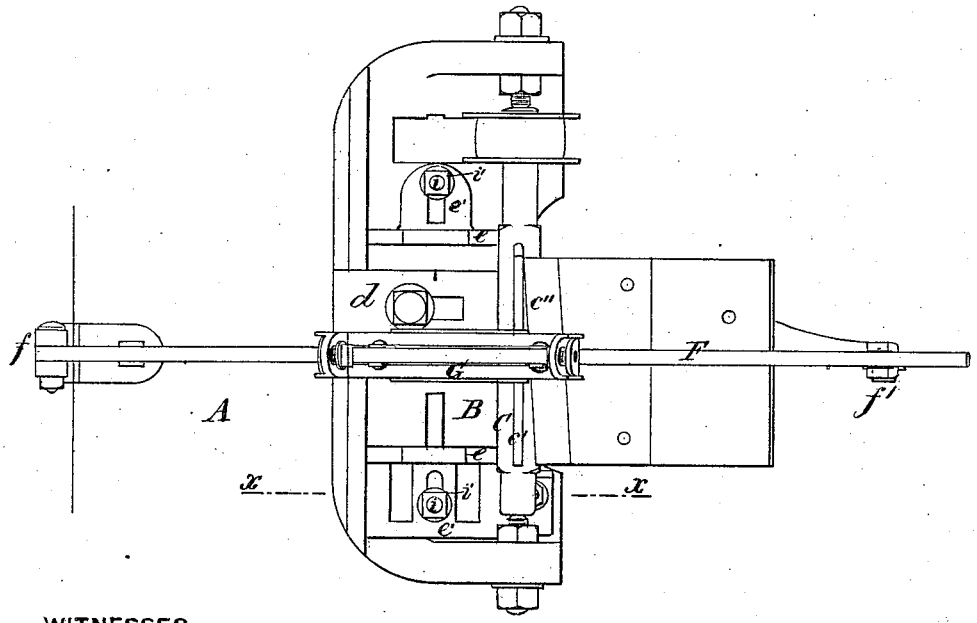


Fig. 4.



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UNITED STATES PATENT OFFICE.

ALFRED WILLIAM MOORE, OF LONDON, ENGLAND.

IMPROVEMENT IN MACHINES FOR TRIMMING BRISTLES.

Specification forming part of Letters Patent No. **206,400**, dated July 30, 1878; application filed March 23, 1878.

To all whom it may concern:

Be it known that I, ALFRED WILLIAM MOORE, of London, in the county of Middlesex, England, have invented certain new and useful Improvements in Machines for Cutting and Trimming the Hairs or Bristles of Brushes, of which the following is a specification:

My said invention consists in improvements in machines for cutting and trimming the hairs or bristles of brushes, whereby such operation is effected in an expeditious, perfect, and economical manner.

The apparatus is, by preference, mounted on a table of any desired form; and consists of a bed-plate provided with bearings, having mounted therein an axle or spindle furnished at one end with a drum or band-wheel. Through the center of the said axle or spindle is a longitudinal slot for the reception of a metal plate, which is passed through and fixed therein in such a manner that the longitudinal edges thereof, which are shaped and formed for the purposes of cutting, project in a corresponding manner on each side of the axle. A horizontal cutting-plate is so arranged that, on the before-described axle being caused to revolve, the cutting-edges of the plate held therein will alternately come into close proximity to the cutting-edge of the said horizontal plate, the respective plates being so arranged, and the cutting-edges thereof beveled in such a manner, that the said edges at first come into close proximity only at one side, and then gradually to the other side, as the axle revolves. The said horizontal cutting-plate is mounted by means of a center-pin and quadrant, to allow of its being tilted as the cutting-edge wears away, on a support so constructed that the base thereof can be moved on the bed-plate of the machine, and secured as required.

Above the cutting-plates are provided suitable supports or guides for the stock or frame of the brush, such supports or guides being so connected with uprights having vertical slots therein that they may be raised or lowered, or set at any angle, and secured in the desired position by means of screws and nuts. The said uprights may also be moved independently in a lateral groove formed in the bed-plate, in order to accommodate the supports or guides to any variation in the size of the stock or frame of the brush under treatment.

The action of the machine is as follows: The supports or guides having been fixed at the desired height above the cutting-blades, the stock or frame of the brush is placed thereon, the hairs or bristles downward, and moved backward and forward, while at the same time the axle is caused to revolve. The length to which it is desired the hair or bristles should be cut having been regulated by raising or lowering the supports or guides, as before described, any hairs or bristles projecting beyond such length will come between and be cut off by the cutting-edges of the plates. The surface of the hairs or bristles may in this manner be cut perfectly level, or to any desired angle or angles.

When it is desired to give a rounded surface to the hairs or bristles of the brush, the above-described supports or guides are removed; and above the plates, and at right angles to the cutting-edges thereof, is placed an inclined rod, the lower end of which is hinged or pivoted to a vertical slotted bar, which is connected with a support, attached to the front of the table by means of a screw-pin and nut, in such a manner that the slotted bar, and consequently the lower end of the rod, can be raised or lowered, as may be desired. The upper end of the inclined rod rests in a recess in the upper part of a slotted bar connected with the back part of the horizontal plate, and which bar may be raised or lowered in the same manner as that already described. Upon the above-described rod is loosely placed a ring or collar, to the lower part of which is attached a frame; or the said rod may be passed through slots in bars attached to the frame, the position of the rod in such slots being regulated by means of screws or other suitable contrivances. The frame is provided on the under surface with holders or clutches, for the purpose of securing the stock or frame of the brush, the distance between such holders or clutches being made adjustable by means of nuts and screws, for the purpose of accommodating the same to any variation in the size of brush under treatment. On the brush having been secured in the manner above described, with the hairs

or bristles downward, it is placed immediately above the cutting-edges of the plates. The machine is set in action, and by oscillating the frame laterally on the inclined rod and moving it up and down the same the desired form will be given to the surface of the hairs or bristles of the brush.

When it is desired to give a concave, convex, or corrugated surface to the brush, the inclined rod is bent or formed accordingly, as will be well understood.

I will now proceed to refer to the annexed drawings, from which the nature of my said invention will be more clearly understood.

Figures 1 and 2 show the apparatus as arranged for cutting flat surfaces. Fig. 1 is a side view of the apparatus, taken through the line *x x* in Fig. 2. Fig. 2 is a plan of the same. Figs. 3 and 4 show the arrangement of apparatus employed for cutting rounded surfaces. Fig. 3 is a side view of the apparatus, taken through the line *x x* in Fig. 4. Fig. 4 is a plan of the same.

The same letters refer to similar parts in the several figures.

A is the table; B, the bed-plate, and *b* the bearings. C is the axle. *c* is a stop for preventing the same being moved when not in use; *c'*, the cutting-plate, fixed in the axle, and *c''* the horizontal cutting-plate. D is the quadrant, and *d* the support. E E are the supports or guides for the stock of the brush when it is desired to cut the bristles to a flat surface. These guides or supports E E are parallel bars, having the inner edges, or their upper surface, rabbeted or recessed, as shown at *r*, to receive the opposite edges of the brush-stock, and when placed on said guides the brush-stock may be reciprocated longitudinally by hand, so that the downward-projecting bristles are carried across the cutters. Each of the guides or supports E has projecting downward from its outer edge a slotted arm, *m*, which is adjustably connected to a slotted standard, *e*, by means of a bolt, *m'*, provided with a suitable nut, so that the guides may be adjusted upward or downward, according to the length to which it is desired to cut the bristles. Each of the standards *e* has a laterally-projecting slotted base, *e'*, through which projects a screw-threaded pin, *i*, from the bed-plate B, and, said pin being provided with a nut, *i'*, the standards may be adjusted toward or from each other, according to the width of the brush-stock which is to be placed upon the guides.

In Figs. 3 and 4, F is the inclined rod, one end of which is hinged to the bar *f*, the other end resting on the bar *f'*. G is the frame for holding the brush, and *g* the holders or clutches of the same.

I claim as my invention—

1. The combination of the revolving cutters *c'*, the support *d*, adjustable to or from the said cutters, the quadrant or standard D, pivoted to said support and adjustable thereupon, the cutting-plate *c''*, and suitable guides for a brush in its movement to bring its bristles in position to be cut by said cutters and cutting-plate, substantially as set forth.

2. The combination, with a suitable cutting apparatus, of the rod F and the brush-carriage G, oscillating laterally thereupon, substantially as and for the purpose set forth.

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