(Model.)

J. M. PICKERING.

BRUSH TRIMMING MACHINE.

No. 268,278. Patented Nov. 28, 1882.

FIG. 1

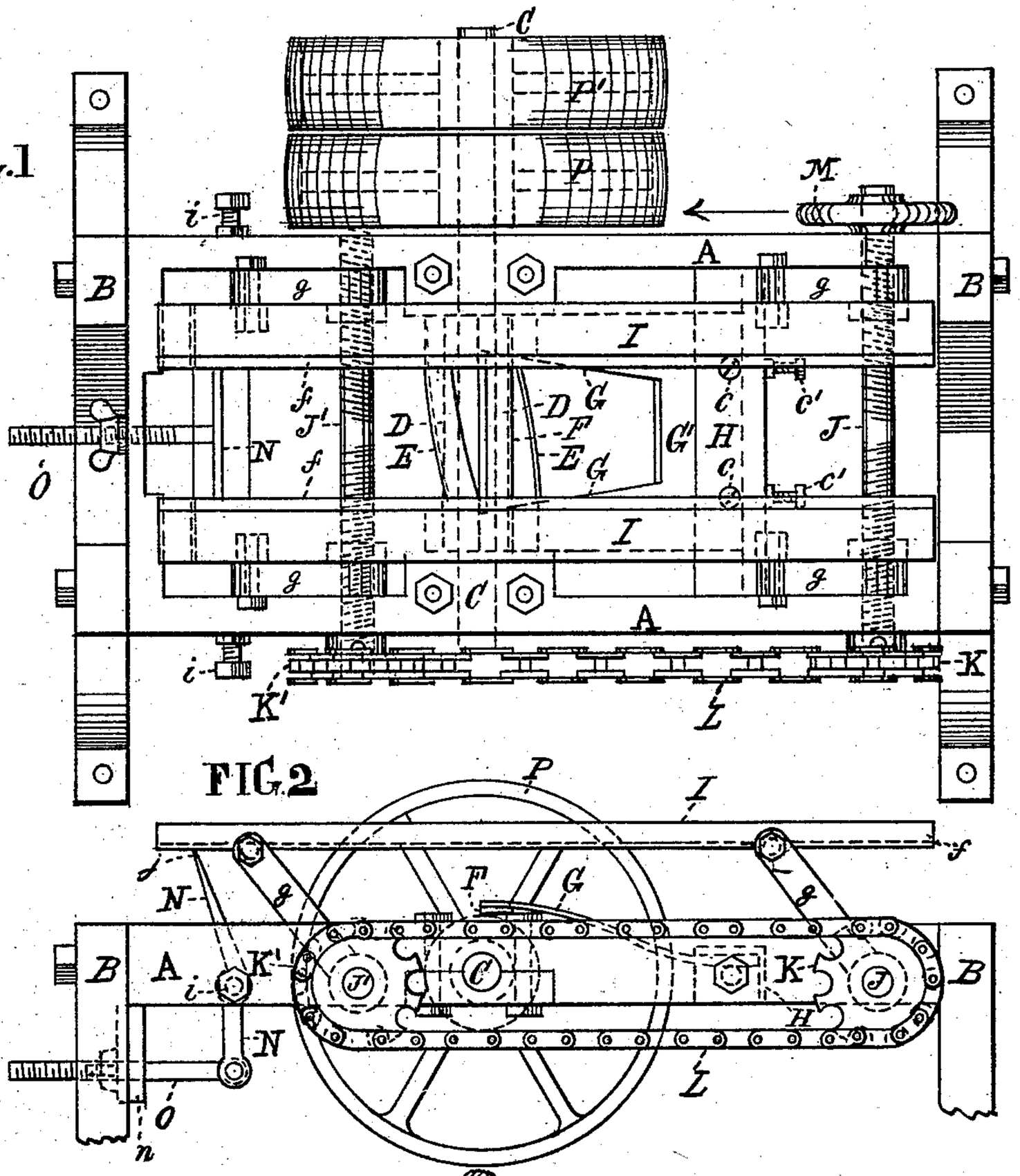


FIG. 2

FIG. 3

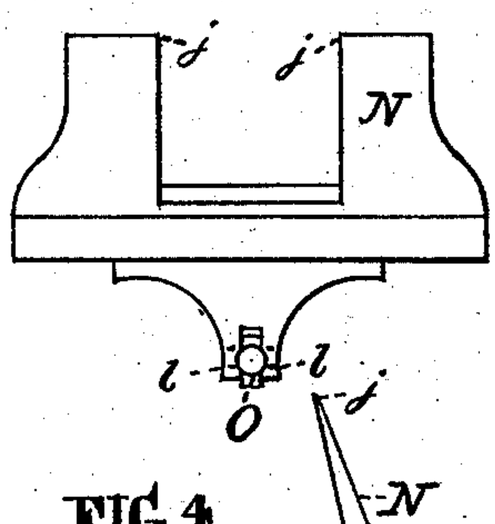
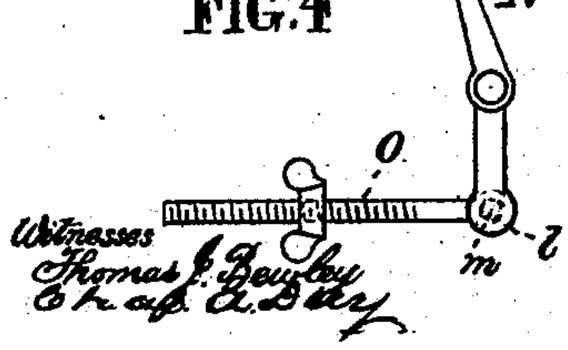


FIG. 4



Witnesses
Thomas J. Bewley
Chas. A. Bery

FIG. 5

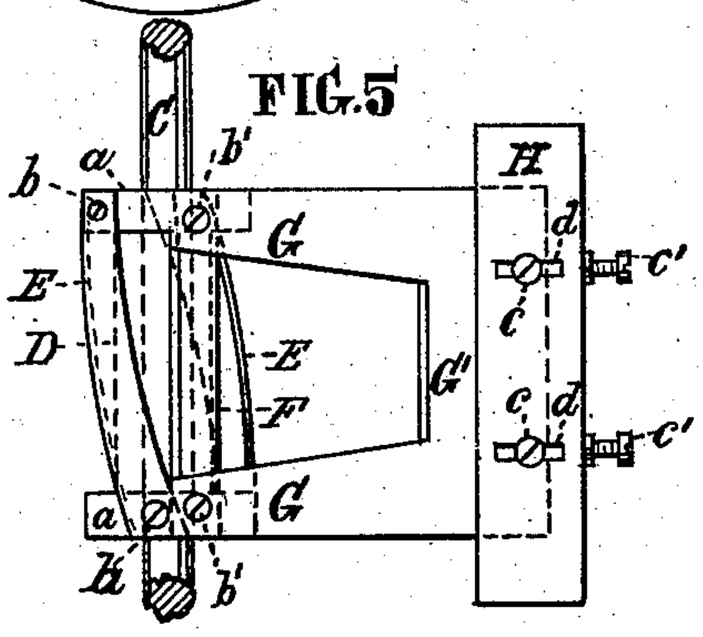
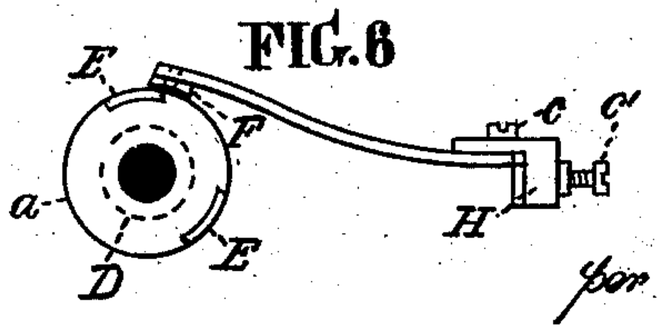


FIG. 6



Inventor
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per Stephen Ustick Attorney

UNITED STATES PATENT OFFICE.

JOSEPH M. PICKERING, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-THIRD TO MAYLIN J. PICKERING, OF SAME PLACE.

BRUSH-TRIMMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 268,278, dated November 28, 1882.

Application filed July 27, 1881. (Model.)

To all whom it may concern:

Be it known that I, JOSEPH M. PICKERING, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Brush-Trimming Machines, of which the following is a specification.

The essential features of my machine are as follows: The faces of the brushes are trimmed by means of a pair of twisted knives on a revolving shaft, the twist of the knives running in reverse directions to counteract the dragging cut, which, when the twist of the knives runs in the same direction as in other machines, causes an unevenness of the face of the brush. The stationary knife, against which the revolving knives cut, is automatically and evenly adjusted to them by means of twin springs, the resilient ends of the springs being firmly secured to the ends of said knife, the said springs being constructed and arranged as hereinafter fully described. The brush-stocks are held in position for trimming by means of parallel clamps, which are jointed to the upper ends of arms, which are connected at their lower ends to parallel shafts by means of right and left hand screw-threads, whereby to expand and contract the clamps to any desired distances apart to suit brushes of various sizes, the shafts being geared together in such a manner as to cause a uniform movement thereof, and thus a uniform movement of the clamps. The height of the clamps above the revolving knives is varied by means of a lever to any requisite height, as hereinafter fully described.

In the accompanying drawings, which make a part of this specification, Figure 1 is a plan view of my improved machine. Fig, 2 is a side elevation of the same, the lower part of the end frames, B B, to which the ends of the bed-plate A are confined, (to raise the bed-plate the proper height from the floor,) being broken away. Fig. 3 is a face view of the adjusting-lever N. Fig. 4 is an edge view of the same, having the regulating or adjusting screw O in connection therewith. Fig. 5 is a plan view of the spring-plate G′, having springs G G, knife F, and knife-stock D. Fig. 6 is an edge view of the same.

Like letters of reference in all the figures indicate the same parts.

A represents the bed-plate which supports the several parts of the machine.

B B are end frames, strongly bolted at their upper ends to the ends of the bed-plate.

C is a revolving shaft, having a stock, D, connected with its middle portion, the stock being provided with annular flanges *a a* at its ends, to which the twisted trimming-knives E E are secured by means of screws *b*. The cutting-edges of the knives are right and left, or in other words, run in reverse directions—that is to say, the forward end of one knife is at the opposite end of the stock to the forward end of the other, as seen more clearly in Fig. 5, whereby to neutralize the tendency of giving a drag cut, this tendency of the angle position of the knives being thus balanced by their reversed action, so as to trim the faces of the brushes as perfectly level as may be desired—a desideratum not hitherto attained.

F is a straight stationary knife, against which the revolving knives E E cut. It is confined to the resilient ends of the springs G G of the plate G′ by means of screws *b′*, the plate and springs being in a single piece, as shown in Figs. 1 and 5. The bearing of the knife F upon the peripheral faces of the knives E E is regulated automatically by the force of the springs G G, to suit any inequality of the faces of the cutters or knives, the force of the springs being varied as occasion may require by the tightening or slacking of the screws *c c*, which pass through the slots *d d* of the cross-bar H, which is firmly secured at its ends to the side pieces of the bed-plate A by means of screws, as represented. The cross-bar H is provided with set-screw *c′ c′*, which bear against the rear-edge of the spring-plate G′, to prevent the force of the revolving knives G G pushing the plate backward from its adjusted position.

I I are parallel clamps, having rabbets *f f*, in which the brush-stocks are placed and held for the trimming of the face of the brushes. The clamps are adjustable toward and from

each other in accommodation to brush-stocks of different sizes by their combination with the shafts or rods J and J′ and the arms *g g g g*, which project from the rods or shafts, the lower ends of the arms being connected with the shafts by means of right and left screw-threads and their upper ends with the clamps by means of screw-bolts, as shown in the drawings, or equivalent device. On one end of the shafts J and J′ are the chain-wheels K K′, connected together by means of the endless chain L, and on the opposite end of the shaft J there is a hand-wheel, M. By turning said wheel in the direction of the arrow the clamps are drawn toward each other, and by turning the wheel in the opposite direction they are caused to recede, so as to accommodate them to the size of the brush-stock. When so adjusted to freely connect the brush-stock a slight turn of the hand-wheel in the direction of the arrow is sufficient to clamp the stock tight enough to hold it in place during the action of the trimming-knives.

The lever N (shown in detail in Figs. 3 and 4) is hung on the fulcrum-pins *i i*, which have a screw-connection with the sides of the bed-plate A. The projections *j j* of the lever are rests for the clamps I I, whereby they are held in their adjusted position the proper height from the horizontal plane of lower flat surface of the stationary knife F. The lever is adjusted to give the proper elevation to the clamps by means of the screw-rod O, the inner end of which is jointed to the lower edge of the lever by means of the lugs *l l* and joint-pin *m*, the outer end resting in a suitable bearing in the strap *n*, which is fastened at its upper end to the end of the bed-plate, the adjustment of the lever being regulated by means of the nut *o*.

The cutter-shaft C is provided with a tight pulley, P, and a loose pulley, P′, at one end for the connection of the driving-belt.

I claim as my invention—

1. In combination with a revolving cutter-stock, a pair of twisted knives having the twist of the knives to run in reverse directions, or right and left, whereby to neutralize the tendency of the knives to drag the ends of the bristles toward the opposite side of the machine to that where they commence cutting, and thereby effect a level shearing or trimming of the face of the brush, substantially as described.

2. The combination of the automatically-adjustable knife F with the springs G G and revolving knives E E, substantially in the manner and for the purpose set forth.

3. The combination of the clamps I I with the shafts J and J′, having right and left screw-threads and being geared together substantially as described, and the clamps being connected with the shafts by means of the arms *g g g g*, substantially in the manner and for the purpose set forth.

4. The combination of the lever N, having an adjusting screw-rod O, with the clamps I I, for adjusting the height of the latter, substantially as described.

JOSEPH M. PICKERING.

Witnesses:
THOMAS J. BEWLEY,
STEPHEN USTICK.