

(No Model.)

2 Sheets—Sheet 1.

J. COOK.

MACHINE FOR SHAPING BRUSH BLOCKS OR BACKS.

No. 492,660.

Patented Feb. 28, 1893.

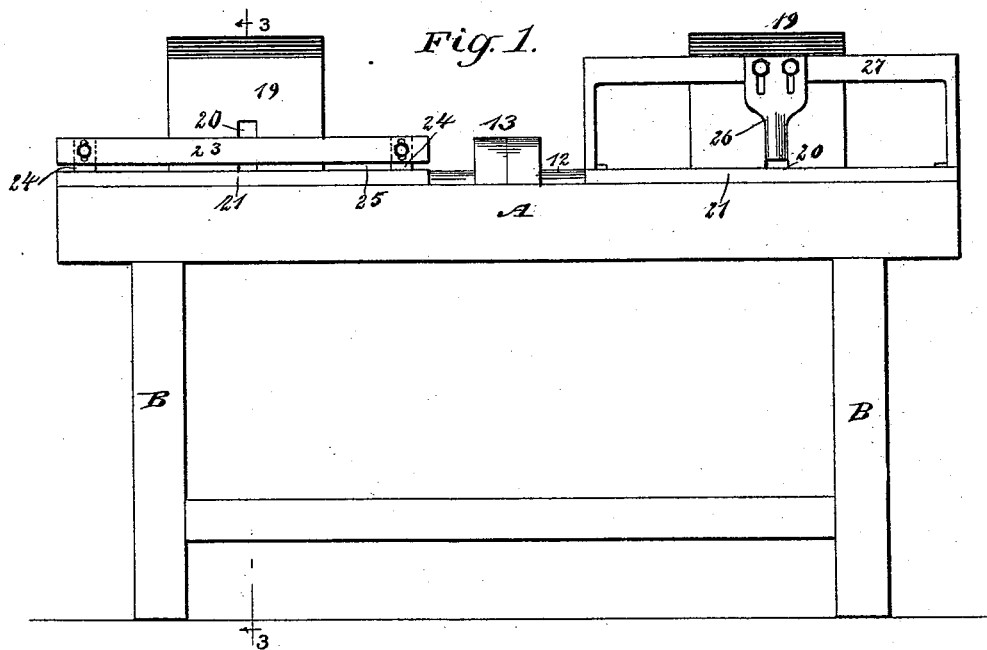
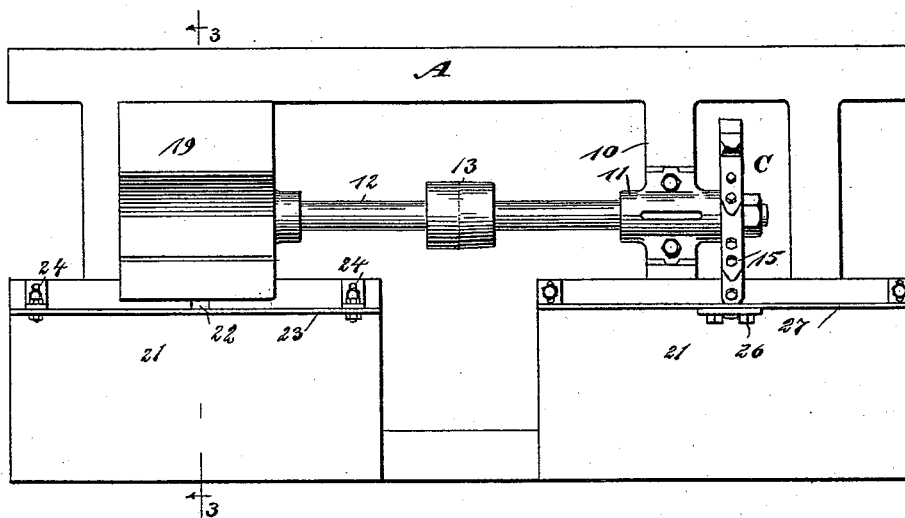


Fig. 2.



WITNESSES:

J. H. Griswell.
C. Sedgwick

INVENTOR

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ATTORNEYS.

(No Model.)

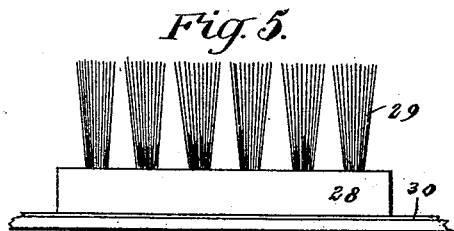
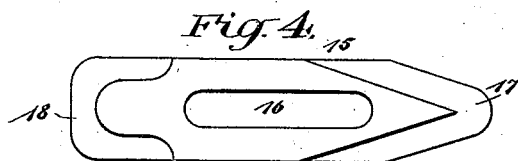
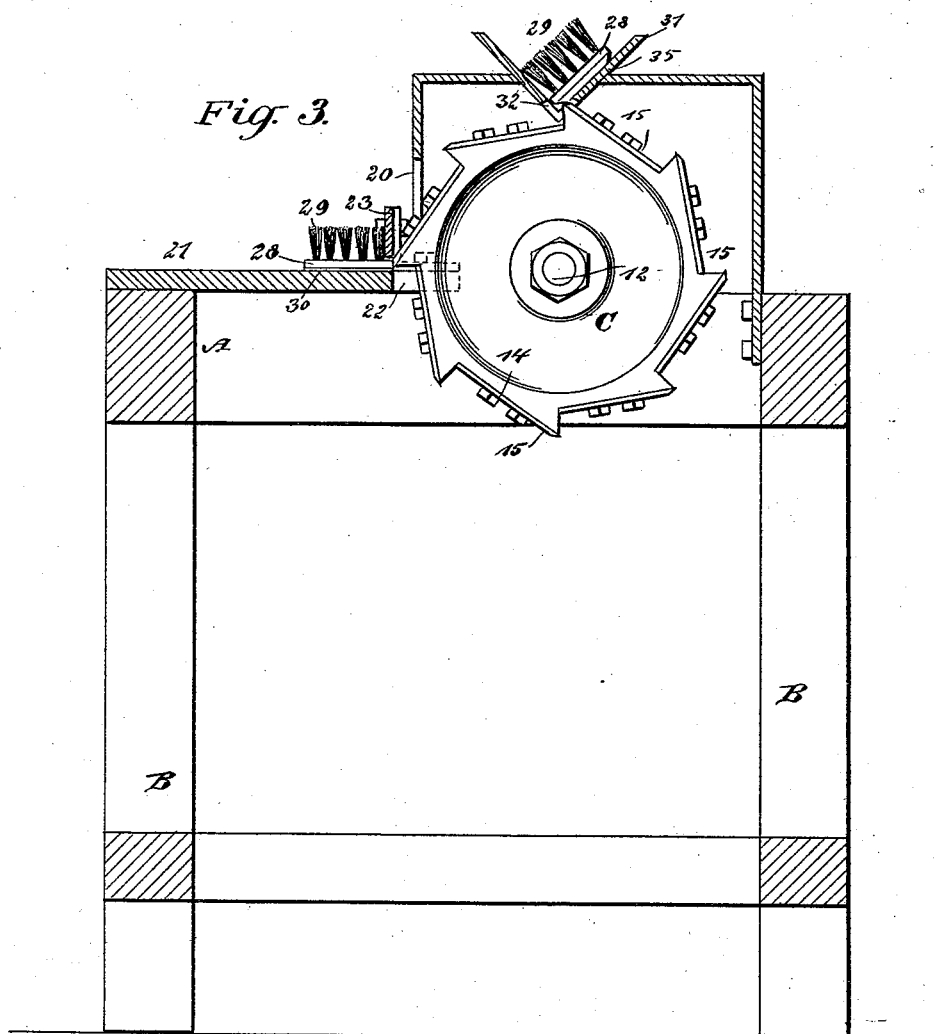
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UNITED STATES PATENT OFFICE.

JOHN COOK, OF TRENTON, NEW JERSEY, ASSIGNOR OF ONE-HALF TO DAVID
R. BROWN, OF SAME PLACE.

MACHINE FOR SHAPING BRUSH BLOCKS OR BACKS.

SPECIFICATION forming part of Letters Patent No. 492,660, dated February 28, 1893.

Application filed May 7, 1892. Serial No. 432,207. (No model.)

To all whom it may concern:

Be it known that I, JOHN COOK, of Trenton, in the county of Mercer and State of New Jersey, have invented a new and Improved
5 Machine for Shaping Brush-Blocks, of which the following is a full, clear, and exact description.

My invention relates to a machine for shaping brush blocks or backs, and has for its object to provide a simple, durable and economic
10 mechanism whereby a brush block or back may be expeditiously, conveniently and safely manipulated in a manner to receive any desired or predetermined shape; and in which
15 also the bristles may be utilized as a former.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

20 Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

25 Figure 1 is a front elevation of the machine. Fig. 2 is a plan view thereof, and Fig. 3 is a vertical section taken practically on the lines 3—3 of Figs. 1 and 2. Fig. 4 is a detail plan view of one of the knives; and, Fig. 5 is an
30 end view of the brush block, illustrating the veneer attached thereto and undercut or trimmed at its edges.

A frame A preferably rectangular in general contour is supported in a horizontal position upon legs B of any approved construction. Cross bars 10, are located in the horizontal portion of the frame, and upon these cross bars are secured boxes 11 in which a shaft 12 is journaled, the shaft extending longitudinally of the machine. The shaft is provided with a driving pulley 13, and is adapted to carry one or more cutter heads C. In the drawings the shaft is illustrated as having two such heads attached, one at or near each
45 end.

The cutter head is best shown in Fig. 3 and is of practically circular shape, but the periphery of the head is stepped, forming a series of inclined planes 14, and upon each inclined
50 plane a knife 15 is mounted. The knives I

prefer to use are shown in plan view in Fig. 4 and form the subject of a separate patent. They are slotted in the center at 16 and attached to the cutter head C through said slots by means of set screws whereby they may be
55 adjusted longitudinally upon the inclined faces of the cutter head.

Another important feature of my invention is the essentially concealing or covering up of the cutter heads and its blades by means
60 of housings 19, so that the operator is at all times guarded thereby from personal injury from the rapidly revolving knives in presenting the brush block to be cut and shaped thereby. Each housing 19 is provided in the
65 front with a slot or opening 20 through which the knives pass when the machine is in operation and in front of each housing a table 21 is located, the table being also provided with slots 22 to admit of the passage of the
70 cutters.

Another important part of my invention is in the provision of adjustable vertical guides. The tables 21 are adapted to support the articles to be operated upon and also serve as
75 supports for the guides. At the left of Figs. 1 and 2 is shown a guide which consists of a plate of metal 23 attached to brackets 24 near its ends, the plate being vertically adjustable upon the brackets and the brackets laterally
80 adjustable upon the table. The guide 23 does not extend down to the table, but a space 25 is left between the lower edge of the guide plate and the table so as to allow the wood of the block to protrude through to the cutter. 85 This guide plate may be either straight or curved in the direction of its length to adapt it to the shape to be given to the brush block, and to that end it may be given any other shape that in practice may be found desirable. It operates to hold the block from slipping or moving vertically during the shaping of it by the cutter and manifestly it may be so shaped as to be used as a guide for producing the curvatures to be given the brush
95 block.

Another form of guide for performing another part of the shaping of the brush block is shown at 26 on the right hand of Figs. 1 and 2. This guide is located immediately
100

over the opening 20 in the housing 19, and is adjustably attached by slots and set screws at its upper end to a yoke-like frame 27, which frame is adjustably attached to the table 21.

- 5 The lower end of the guide 26, or that portion adjacent to the opening 20 may have a convex outer face or may be concave, flat or of other shape as the character of the work may demand. The curvature at its lower
10 end shown in the drawings, is provided to fit the shape of the depth of the brush.

- In Fig. 5 I have illustrated a brush block or back 28, having the bristles 29 inserted therein and a veneer 30 applied to the upper
15 face of the block.

- The machine is adapted to shape the blocks, or the veneers to the shape of the blocks, and in shaping a veneer, for instance, the bristles of the brush may be used as a former, or the
20 block itself may be employed for that purpose. If the bristles are to be used as a former, the guide in front of the head to be brought into action is elevated a sufficient distance above the table 21 to permit the projecting
25 edges of the veneer to pass beneath it and likewise the edge of the block or back, and the bristles of the brush are brought to bear directly against the guide. The machine being brought into operation it is then simply
30 necessary for the operator to turn the block in front of the cutters, keeping the bristles against the guide, and the veneer will be trimmed down close to the edge of the block or back, or may be made to project a slight
35 distance if desired, the shape of the veneer corresponding in every respect to the marginal contour of the bristles. Or the block may be used as a former, in which case the guide is elevated a sufficient distance only to permit
40 the veneer to extend inward to the knives, and the edges of the block are brought to bear against the guide.

- Again, in the construction of brushes without handles, that is, handles forming an extension of the body, the bristles may be set
45 in a block of any shape, and any desired outline may be given to the bristles. The block, with the bristles inserted is then taken to the machine, and the guide is adjusted so that the
50 block will pass readily beneath the guide, to be engaged by the knives of the cutter head, the bristles being brought to bear against the guide, will in this instance act as formers or shapers, and the block may be turned as rapidly as desired, and as turned will receive a
55 marginal contour corresponding to the contour of the bristles.

- If the brush block or back is to have a handle as an extension of the body, as in hair
60 brushes, for instance, the handle portion has applied thereto a former which at its margin is made to bear against the guides, and the handle, when the block has been presented to the cutter head and turned in front of it,
65 will partake of the shape of the former.

In order that the edges of the block may be beveled or chamfered when desired, a guide

in the form of an angular hopper 31 is located at the top of the housing 19, which hopper extends down through an opening in the top of
70 the housing in the path of the cutters 15; and the lower end of the hopper is provided with an opening 32, through which the cutters pass. Thus as shown in Fig. 3, when a block is placed in the angular hopper guide, one side
75 of which serves as a rest for the back of the block while the other operates as a stop for the edge thereof, the knives, as the heads revolve, pass upward through the slot 32 in the hopper, and bevel or chamfer the edge of the
80 block presented to them.

It will be observed that this machine is exceedingly simple in construction, the provision of concealed cutter heads and guides adapted thereto enabling an operator with
85 entire safety from injury to his person, to expeditiously and conveniently present brush blocks to the machine, manipulate the blocks in front of the cutters, and produce in a short space of time any desired shape of block,
90 and in the operation may work very rapidly either to the right or to the left with a feeling of entire security that he can not spoil the material upon which he is operating.

Having thus described my invention, what
95 I claim as new, and desire to secure by Letters Patent, is—

1. In a machine for shaping articles, where-in a rotary cutter head of disk-like contour is employed, the combination with a horizontal supporting frame, a table 21 therefor,
100 constructed with a single open space between them, and with connecting cross bars 10, journals 11 supported in said cross bars, a driving shaft 12 supported in said journals and projecting beyond the same, and on which the
105 cutter head is mounted; and a housing 19 practically inclosing the cutter head and provided with an opening 20 registering with the slotted opening 22 in the table, into which
110 the knife edge of the cutter head may pass in its rotation; substantially as described.

2. In a machine for shaping articles, the combination with a rotating cutter head of disk-like contour, the head having its periphery formed in a series of inclined planes,
115 knives located upon the inclined surfaces of the head, of a housing essentially covering the head and provided with an opening through which the knives pass as the head
120 is rotated, a vertical guide or gage 23 located in front of the opening, with means for adjusting the same vertically, whereby the block or the bristles in the block, presented to the
125 cutter head, may be made to serve as formers or patterns for the veneer or the block, as the case may be, substantially as specified.

3. In a machine for shaping articles, the combination with a rotary cutter head of disk-like contour having its periphery formed
130 with a series of inclined planes, and knives secured upon its inclined surfaces, of a table located in front of the head and having an opening in which the head rotates, a housing

practically inclosing the head and provided with an opening registering with that in the table, a vertically adjustable side guide 26 adapted to the form of the shape to be cut and located in front of the cutter head, and a slotted yoke-like frame 27 supporting the said guide 26, substantially as described.

4. In a machine for shaping articles, the combination with a cutter head of essentially disk-like shape, having its periphery formed in a series of inclined planes and provided with knives secured upon its inclined surfaces, of a table located in front of the head

and having an opening in which the head revolves, a housing practically inclosing the head and provided with an opening registering with that in the table, an angular hopper-shaped guide 31 projecting through the housing 19 in the path of the knives of the cutter head, the said guide being provided with an opening 32 for the passage of the cutters, substantially as described.

JOHN COOK.

Witnesses:

ROBT. B. BONNEY,
D. R. BROWN.