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UNITED STATES PATENT OFFICE.

JOHN J. WESTERFIELD, OF NEW BRUNSWICK, NEW JERSEY.

METHOD OF CUTTING CURVED MOLDINGS.

Specification of Letters Patent No. 16,197, dated December 9, 1856.

To all whom it may concern:

Be it known that I, JOHN J. WESTERFIELD, of New Brunswick, in the county of Middlesex and State of New Jersey, have invented a new and Improved Machine for Cutting Circular and Elliptical Moldings; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a transverse vertical section of my improvement, *a, a*, Fig. 2, showing the plane of section. Fig. 2, is a plan or top view of ditto. Fig. 3, is a vertical section of the elliptical bed. Fig. 4, is a plan or top view of the same.

My invention consists in the employment or use of an inclined bed, having a circular or rotating motion, and a conical cutter head with curved cutters attached, the whole being arranged and operating as will be hereinafter fully shown and described, so that circular and elliptical moldings may be cut with the greatest facility.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A, represents a rectangular frame which may be constructed in any proper manner to support the working parts.

B, represents the driving shaft of the machine, placed at one end of the frame A. This shaft has a pulley C, at one end, and a driving pulley D, at about its center; a smaller pulley E, is also placed on said shaft adjoining the pulley D.

F, is a shaft which is placed transversely in the lower part of the frame A, near its center. This shaft has a pulley G, upon it and a screw H, at one end. The screw H, gears into a toothed wheel I, which is placed on the lower end of a vertical shaft J, at one side of the frame A. The upper end of the shaft J, also has a toothed wheel K, upon it and this wheel gears into a segment rack L, which is secured to the edge of a quadrant frame M, on which a quadrant bed N, is placed. The frame M, is fitted or works on an inclined shaft O, attached to one side of the frame A, said shaft being the center on which the frame works; the

edge of the frame is grooved and fits over a segment way *a*, on the upper part of the frame A.

The frame M, and bed N, it will be seen, are inclined, the shaft O, being at right angles with it.

P, P, represent two guide-frames, one of which is attached to the upper end of the shaft O, and the other to a cross bar on the upper part of the frame A. These guide frames have each a sliding bearing *b*, fitted in them and a shaft Q, is fitted in said bearings. The bearings are raised and lowered by screws R, which pass through the upper ends of the guide frames and are attached to the bearings *b*. On one end of the shaft Q, a pulley *c*, is attached, said pulley having a belt *d*, passing around it, the belt *d*, also passing around the pulley C, on the shaft B. A belt *e*, also passes around the pulleys E, G, on the shafts B, F.

On the shaft Q, a conical cutter head S, is attached, and *f, f*, are the cutters secured to the head. The taper of the head S, corresponds to the inclination of the bed N, and the cutters *f*, are curved so as to form a portion of a circle, of which the center of motion of the bed N, and frame M, is the center. This will be understood by referring to Fig. 1.

The stuff T, to be cut, shown in red, is sawed out to the proper width and thickness and secured to the edge of the bed N, and motion being given the shaft B, in any proper manner, the cutter head S, is rotated and the bed N, and frame M, are turned so that the stuff T, is passed underneath the cutters which cut the molding.

In consequence of having the bed N, inclined and the head S, of conical or taper form and the cutters *f*, curved as shown, the circular molding is cut equally as well as the straight ones are cut in the machines used for that purpose, because each part of the cutters travels or moves with a speed proportionate to the portion of the stuff upon which it acts. In fact the operation is the same or analogous to a conical roller passing or working around upon a circular bed.

The head S, may be adjusted at different points upon the shaft Q, as desired, and cir-

cular moldings may be cut entire by placing a circular revolving bed U, upon a frame U¹, placed in an inclined position on the frame A, and elliptical moldings may be cut by
5 having an elliptical bed V, placed on the bed U, said bed V, being connected to the bed U, by a trammel W, see Figs. 3 and 4.

The above machine has been practically tested and operates well. It is designed to
10 be used for cutting oval and circular picture and mirror frames, or moldings therefor, and for similar purposes.

I do not claim the elliptical or oval bed V, connected by the trammel W, to the rotat-
15 ing bed U, for this is an old and well known

device for cutting and drawing or describing ovals, but

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

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The inclined bed N, either of quadrant, circular or elliptical form and the conical head S, provided with curved cutters *f*, arranged and operating conjointly as shown for the purpose specified.

JOHN J. WESTERFIELD.

Witnesses:

WM. H. HELM,
JNO. WALDRON.