S. E. Foster,

Making Chair Backs,

No. 20,918, Patented July 13, 1858.

Fig. 1.

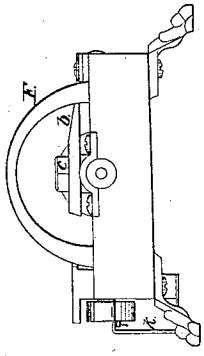


Fig. 2.

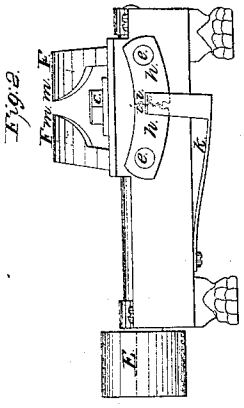


Fig. 3.

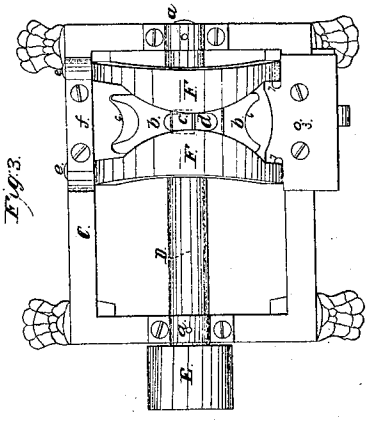


Fig. 4.

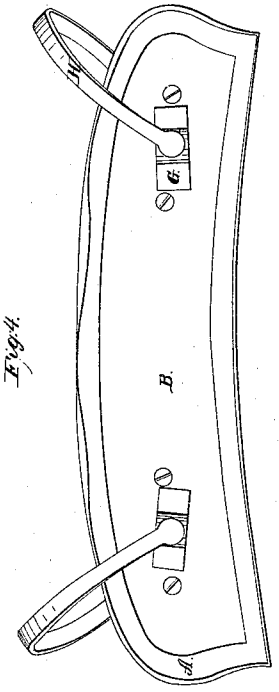
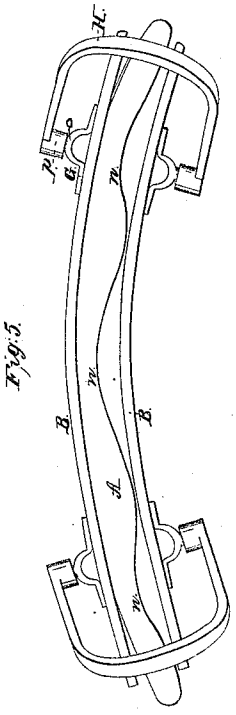


Fig. 5.



UNITED STATES PATENT OFFICE.

S. E. FOSTER, OF FITCHBURG, MASSACHUSETTS, ASSIGNOR TO THE WALTER HEYWOOD CHAIR CO.

MACHINE FOR MANUFACTURING CHAIR-BACKS.

Specification of Letters Patent No. 20,918, dated July 13, 1858.

To all whom it may concern:

Be it known that I, SAMUEL E. FOSTER, of Fitchburg, in the county of Worcester and State of Massachusetts, have invented an Improved Rest for Rounding or Beading the Backs of Chairs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is an end view of the machine; Fig. 2 a side elevation; Fig. 3 a plan; Fig. 4 a front view of a chair back with the pattern and clamps attached; Fig. 5 a plan of the same.

The curved piece of wood (shown at A Figs. 4 and 5) from which the back of certain kinds of chairs is made, is rounded or beaded on the edge, to do this rounding cheaply and expeditiously a machine has been employed in which a rapidly revolving cutter with a concave edge, cut the chair back to the required form, according to a given pattern, and left its edge rounded.

In this machine the patterns B (Figs. 4 and 5) attached to each side of the back, bore against fixed rests and guides on each side of the cutter, and while the back was of uniform thickness along the whole of its edge the rounding or convexing of its edge would be properly performed that is with the edge equally rounded off toward each face of the chair back, but if the stuff should vary in thickness throughout any portion of its length (as in Fig. 5) the center of the curve formed on the edge by the cutter will not coincide with the center of the material being worked, and even when the backs were all of a uniform thickness throughout each piece, the rests must be adjusted to suit each different lot of stuff as it might be thicker or thinner.

To obviate these difficulties is the object of my present invention which consists in so arranging the rests that the center of the edge of the material being cut, shall always be directly over the center of the cutter, notwithstanding the varying thickness of the stuff at different portions of its length.

That others skilled in the art may understand and use my invention I will proceed to describe the manner in which I have carried out the same.

In the drawings C, is the frame of the machine, in suitable bearings *a* on which is carried the shaft D, driven by suitable power applied to the pulley E. This shaft has secured to it on each of its opposite sides a cutter *b* of the form shown in Figs. 1 and 3, which is attached by means of a screw *c* passing through a slot *d*, into the shaft, (which is left square at this part of its length). These cutters have their edges concave or of a circular form as at 6 (Fig. 3) so that as they are revolved in contact with the piece of stuff intended for a chair back, they will cut it away and form a smooth round edge or bead.

The rest which supports and guides the "back" will now be described. Two jaws F, of the form shown in Figs. 1, 2 and 3 vibrate on journals *e*, which have their bearings in the sides of the frame C, and are held in place by the caps *f* on one side, and *g* on the other side of the frame; the cap *g* is wider than the top of the frame *c*, and extends in toward the shaft D, on one side forming stops at 7, against which the jaws F bring up when they shut together, and on the other side it extends over the outer edge of the frame and serves to protect from chips and dust, the parts beneath it—on one side of the machine the journal *e*, of each of the jaws F, is prolonged beyond the frame C, and has attached to it an arm *h* (Fig. 2) the end of which is toothed, forming a segment gear *i*, which engages with the other arm. A spring *k* is secured to the under side of the frame C, and is bent up alongside the arms *h* and hooks over a pin 8 attached to one of the arms. As the jaws F are forced apart from each other, the toothed ends *i* of arms *h* are raised against the resistance of the spring *k*, which thus tends to press the jaws together.

The following is the manner in which this machine is operated: A pattern B (Figs. 4 and 5,) is clamped on each side of the piece of stuff to be formed into a chair back; the edge of each pattern is of the contour intended for the edge of the "back" but the patterns are somewhat smaller than the intended size of the "back" A. The piece of stuff is then run through the machine, between the jaws F, when the edge of the patterns will rest on the upper surface of the jaws, while the edge *m*, of each jaw presses against the face of the "back" just beyond the patterns, and the revolving cutters *b*, cut off the edge of the stuff as far as

the patterns allow it to descend; this gives to the finished back A, Fig. 4, the same form as the patterns clamped to it, and as the jaws F press equally against each side of the piece of stuff being cut they will keep it in such a position that a vertical plane passing through the center of the cutters at right angles to the shaft D shall intersect the piece A, midway between the two surfaces against which the jaws press, so that even when the thickness of the "back" varies (as at *n*, Fig. 5) throughout its length, the cutters *b* will form its edge with a proper bead, or with the middle of its convexity in the middle of its thickness.

The apparatus which I employ for clamping the patterns to the "back" will now be described. A piece G is attached in any suitable manner to the pattern B, it is formed as shown in Fig. 5, with a pin projecting from its highest part at *o*, which enters a socket *p* on the end of a spring clamp H. One such piece G is attached to each pattern near each end, and the spring H holds a pair of them between its two ends pressing the patterns tight to the back. The spring clamps H, pivot on the pins at *o*, so as to allow the clamp to be turned over the end of the "back" out of the way of the rests, as each edge is finished.

What I claim as my invention and desire to secure by Letters Patent is—

The within described rest consisting of two jaws, which are moved an equal amount on each side of a vertical plane passing through the center of the cutters, as the thickness of the stuff varies in the manner and for the purpose substantially as set forth.

SAMUEL E. FOSTER.

Witnesses:
C. BURLEIGH,
C. H. EMORY.