

J. SHUH.

Machines for Shaping Chair-Bottoms.

No. 156,504.

Patented Nov. 3, 1874.

fig. 1

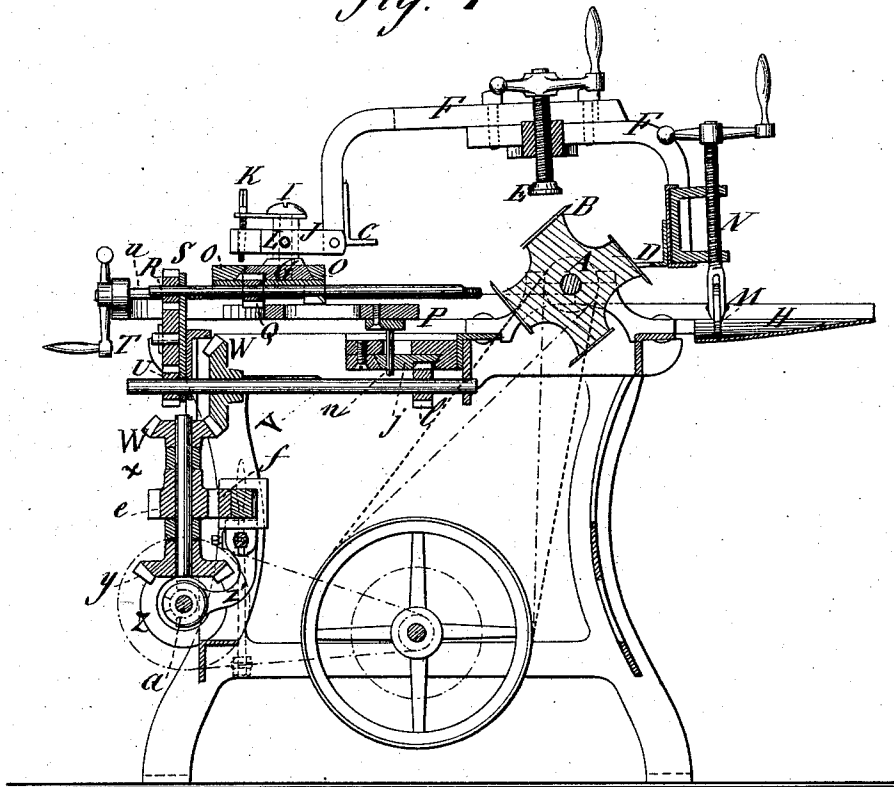
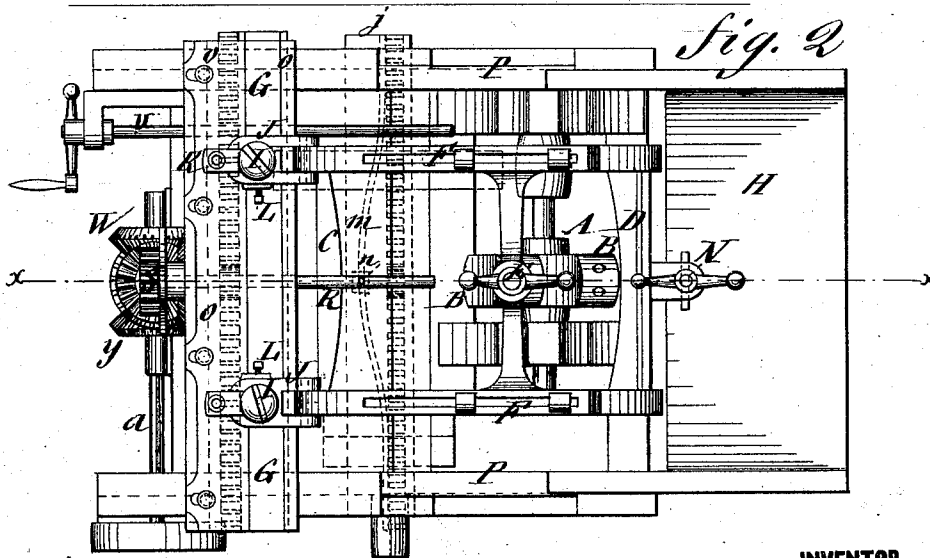


fig. 2



WITNESSES:

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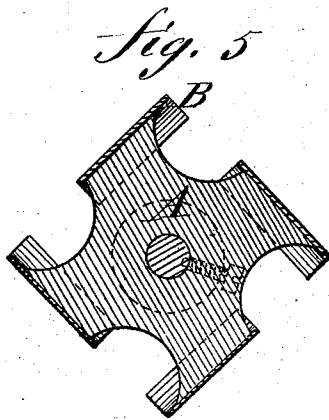
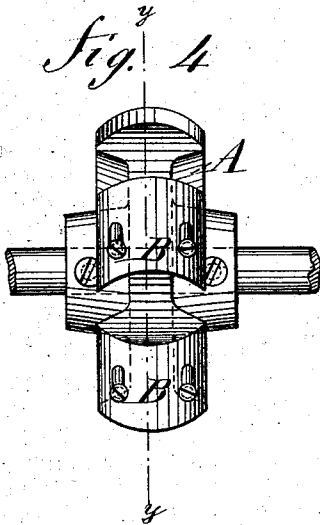
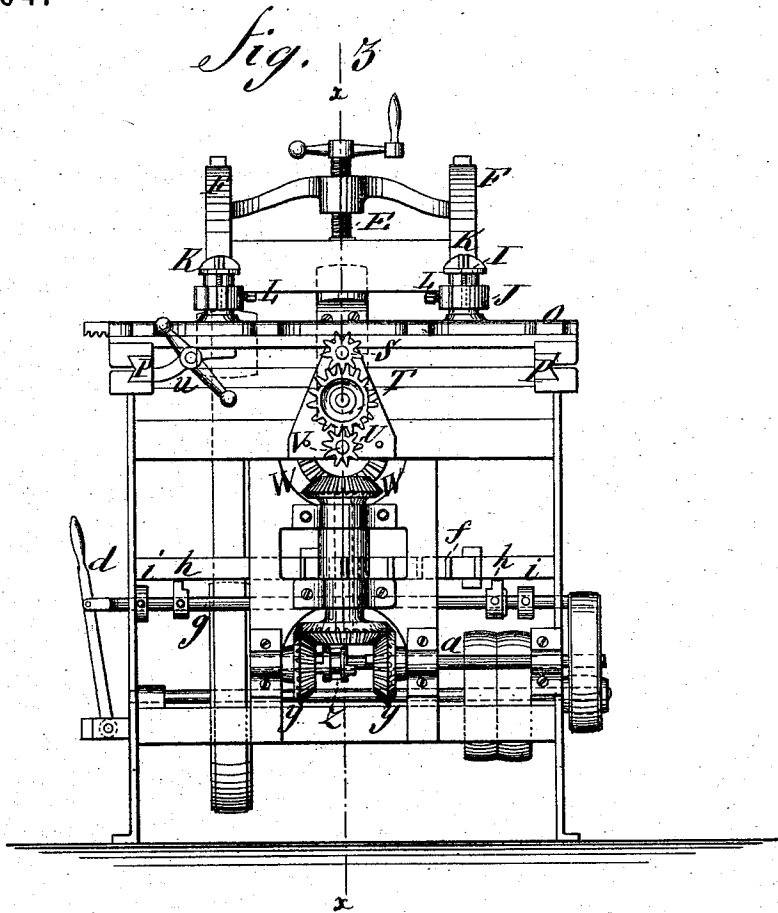
INVENTOR:

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Machines for Shaping Chair-Bottoms.
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UNITED STATES PATENT OFFICE.

JACOB SHUH, OF BERLIN, CANADA, ASSIGNOR TO HIMSELF AND JOHN SHUH, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR SHAPING CHAIR-BOTTOMS.

Specification forming part of Letters Patent No. **156,504**, dated November 3, 1874; application filed July 11, 1874.

To all whom it may concern:

Be it known that I, JACOB SHUH, of Berlin, in the Province of Ontario and Dominion of Canada, have invented a new Improvement in Machines for Shaping Chair-Bottoms, of which the following is a specification:

The machine is designed for hollowing and shaping the upper side of wooden chair-bottoms in an efficient, expeditious, and economical manner. It comprises mechanism for holding the plank of which the bottom is to be made upside down over a rotary cutter, and gaging it to the cutter so as to cut to the required depth and shape, both on the bottom and the back, and at the same time feed it forward and backward laterally, and also from front to rear, so that one tool will perform all the work. The holding contrivances are adjustable for seats of different sizes, as well as for varying the depth and form of the hollow.

Figure 1 is a sectional elevation of my improved machine taken on the line *xx* of Figs. 2 and 3. Fig. 2 is a plan view. Fig. 3 is a side elevation. Fig. 4 is a front elevation of the cutter; and Fig. 5 is a section of the cutter taken on the line *yy* of Fig. 4.

Similar letters of reference indicate corresponding parts.

A represents a rotary cutter-head with scoop or gouge shaped cutters B, over which the plank, being turned upside down, is to be held for hollowing out the bottom by resting at the front and rear edges on the brackets C and D, on which it is secured by the clamp-screw E. These brackets are supported, one at the front and the other at the rear of the cutter, by the extension arched bars F, which at one end are supported on a sliding carriage, G, and at the other end by the pattern-board H. To the slide they are connected by the standard I and adjustable blocks J, being pivoted to the blocks, and the blocks being fitted on the standards so as to shift up and down on them, and having set-screws K and L for adjusting and fastening them. They rest on the pattern-board by a wheel, M, on which they are adjustable vertically by a screw-rod, N, and they are contrived in two points with fastening-screws for shifting the brackets toward

and from each other for boards of different widths. The slide G is to move the plank along the cutter from side to side, and at the same time to feed it along the cutter from front to rear. It works laterally in a supporting-bed, O, which is attached to a frame, P, which carries the pattern-board H, and has a little movement toward and from the cutter-head, which, in combination with the lateral movement of the plank by the slide G, produces the curve of the back of the hollow of the seat. The slide G is worked forward and backward to move the plank over the cutter laterally by the pinion Q on the shaft R, which gears by pinion S, idle wheel T, and pinion U, with the shaft V, which gears by bevel-wheels W with vertical shaft X, which gears by reversing-pinion Y, and clutch Z, with the driving-shaft *a*. The motion reverses each time the plank moves its width along the cutter, and each time the plank is fed up for the next cut by the hand-fed screw *u*, which shifts the bed-frame O along the frame P. The motion may be reversed by the hand-lever *d*, but provision is made for automatically shifting it by the toothed hub *e* on shaft *x*, the sliding rack-bar *f*, and the shifting-rod *g*, connected to the lever *d*, the said rod having the arm Z' fixed on its middle portion and connecting with the sliding clutch Z, also stops *h*, by whose alternate contact with the rack-bar *f* the rod is reciprocated and a corresponding movement thereby imparted to the clutch Z through the connecting-arm Z'. Said stops are made adjustable on the rod to regulate the extent of movement of the latter according to the size of the chair-seat. Stops *i* are also mounted on the rod *g*, whose contact with the frame of the machine will prevent the rod sliding too far when moved or acted on by the rack-bar. This automatic operation of the reversing mechanism ensues when the machine is run at a speed necessary for doing its work, or even at a lower speed; but, of course, not when run very slowly, since the momentum of the moving or shifting devices is not then sufficient to carry the clutch proper over the "dead-point," or from one bevel-gear to the other. The shaft V also works a toothed slide, *j*, by a pinion, *l*, which slide has a cam-groove,

m, in which a stud-pin, *n*, of the frame *P* works to give a movement of the plank forward and backward relatively to the cutter each time it moves laterally to make the curve at the back of the hollow. The slot is curved, as shown in dotted lines in Fig. 2. The cutters are gouge-shaped for adapting them to hollow out the plank smoothly, and the cutter-head is contrived so as to be reversed, to be run in the opposite direction by crossing the belt for different forms of seats and different kinds of timber.

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

1. The combination of the plank-holding frame, pattern *H*, wheel *M*, laterally-traversing slide *G*, and feeding frame *O*, with a rotary cutter-head *A*, substantially as specified.

2. The combination of the cam-slide *j* with the laterally-traversing and feeding plank-holding frame and a rotary cutter-head, substantially as specified.

3. The adjustable plank-holding frame *F*, adjustable blocks *J*, and adjustable wheel *M*, combined with the rotary cutter-head *A*, substantially as specified.

4. The toothed cam-slide *j*, pinion *l*, shaft *V*, train *U T S*, shaft *R*, pinion *Q*, and toothed traversing-slide *G*, combined and arranged substantially as specified.

5. The combination of the cam-slide *j*, traversing and feeding slide *G*, reciprocating frame *P*, and the shafts *R V*, and operating train, substantially as specified.

6. The automatic reversing toothed slide *f*, toothed hub *e*, shifting-rod *g*, arm *Z'*, and adjustable stops, combined with shaft *X*, and the reversing-lever *d*, substantially as specified.

JACOB SHUH.

Witnesses:

C. L. PETERSON,

A. J. PETERSON.