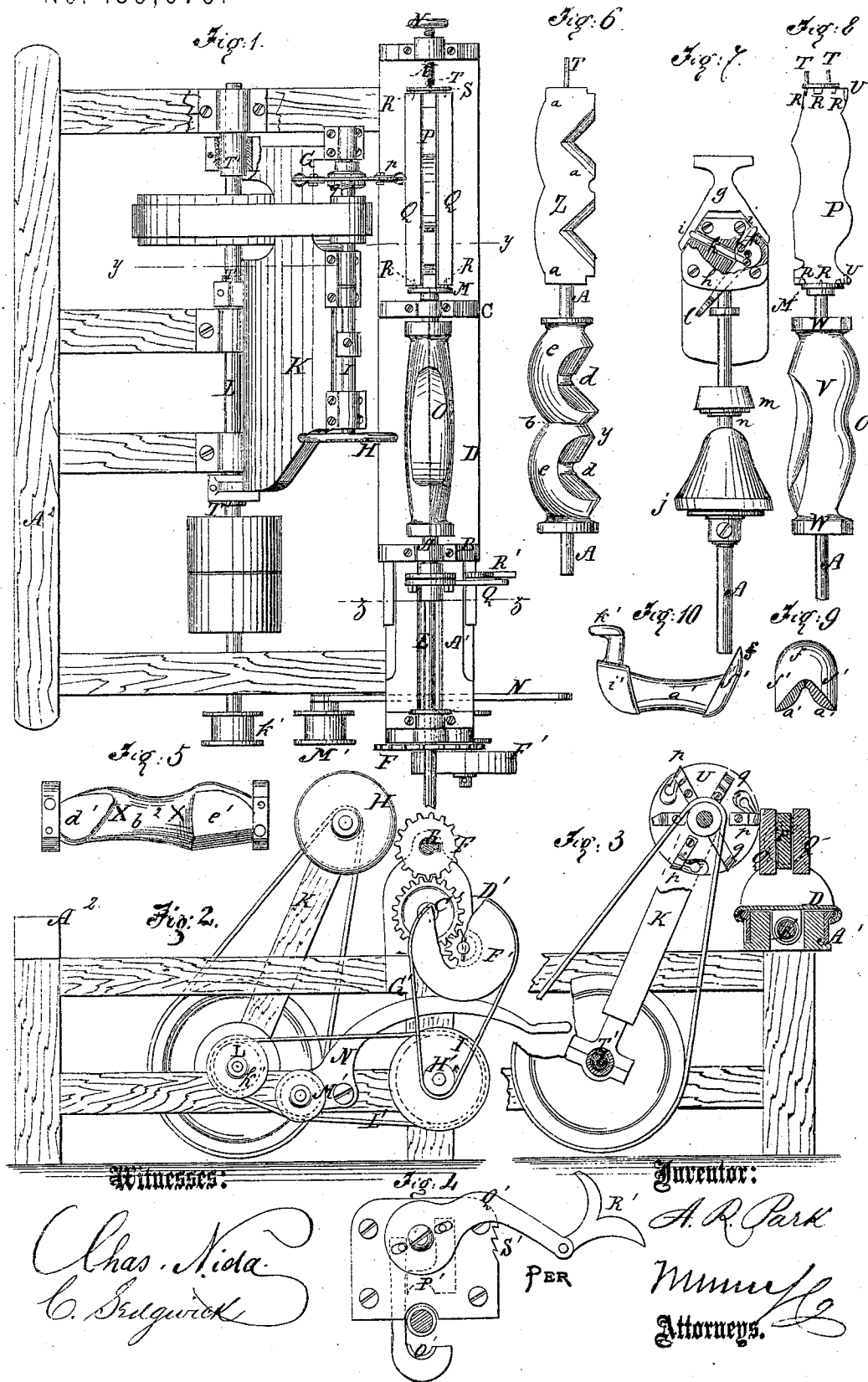


A. R. PARK.
Turning-Lathes for Wood.

No. 139,076.

Patented May 20, 1873.



UNITED STATES PATENT OFFICE.

ANDERSON R. PARK, OF COLUMBIA, TEXAS.

IMPROVEMENT IN TURNING-LATHES FOR WOOD.

Specification forming part of Letters Patent No. **139,076**, dated May 20, 1873; application filed July 20, 1872.

To all whom it may concern:

Be it known that I, ANDERSON R. PARK, of Columbia, in the county of Brazoria and State of Texas, have invented a new and Improved Machine for Turning Saddle-Trees, of which the following is a specification:

The invention consists in the improvement of machines for turning saddle-trees, as hereinafter described and pointed out in the claims.

Figure 1 is a plan view of the machine, with a pattern and holding-plate for the wood to be turned, such as I use for turning the side pieces for the saddle on the under sides, a part being shown in section. Fig. 2 is an end elevation of the latter, with a part broken out. Fig. 3 is a section on the line *y y* of Fig. 1. Fig. 4 is a section on the line *z z*. Fig. 5 is a side view of the pattern I use for turning the said side pieces for the saddle on the outside. Fig. 6 is a side view of the pattern and holding-plates I use for turning the cantle. Fig. 7 is a side view of the pattern and holding-plate for turning the horn and pommel, the said plate being partly shown in section; a blank for a horn and pommel is also shown in this figure. Fig. 8 is a side view of the pattern and holding-plate shown in Fig. 1, the view being taken in a plane perpendicular to that of Fig. 1. Fig. 9 is a rear elevation of a saddle formed of the separate pieces which I produce in the lathe, and Fig. 10 is a side elevation of the same.

Similar letters of reference indicate corresponding parts.

The work and pattern carrying spindles A are mounted in the heads B C of a slide, D, and they are coupled, detachably, with the shaft E, which is splined in and slides lengthwise through its driving-wheel F, to move forward and back with the slide D; also to turn the spindle A. Between the housings B C the said spindle A carries the different patterns used for controlling the action of the cutter-wheel G through the medium of the guide-wheel H, the said guide-wheel and cutter-disk being both mounted on the shaft I, which is mounted in the swinging end of the frame K, which is mounted at the lower end in the axis of the driving-shaft L. The blanks or pieces of wood to be dressed are carried between the face-plate M and the

tail-center N on suitable carrier plates or forms, either attached to the said face-plate or fitted on an elongation of the spindle A, and differing in form according to the different kinds of work to be done.

In this example the pattern O and the carrying-plate P, which are represented in position in the lathe, and in side view in Fig. 8, are adapted in form for turning the side pieces for the saddle upon the under side. Said plate P consists of a long, thick, flat plate, with curved edges, as shown in Fig. 8, and is rigidly attached to the face-plate M, so as to extend along in the axis of the spindle A to the tail-spindle N. Two pieces of wood, Q, are applied to said plate P, one on each side, and made fast by the pins R R in the face-plate and loose plate S at the tail end, which is held on the end of plate P by pins T and the tail-screw N; said pieces of wood are also further held by the clips U on one edge of the plate P. The configuration of the pattern O, shown in Figs. 1 and 8, is such that each side V guides the cutter for shaping the under side of a side piece, *a'*, Figs. 9 and 10, two being turned at once, and it is made somewhat longer than the side pieces are to be, and provided at each end with a plane surface, W, which causes the cutter to leave corresponding places on the ends of the pieces Q, which are also longer than the turned side pieces are required to be for bearing fair on the sides of the plate P, where they are reversed thereon for having the outsides turned, which is effected in the same way, using the pattern X, represented in Fig. 5, in place of the pattern O. This pattern X, which is of the same form on the side not shown as on the side shown, has a curved depression, *b'*, in the sides to guide the wheel and cutter in making the concave form required for said sides, and it has the plane parts *d'* to produce corresponding parts in the sides for the notched part of the cantle to fit upon; also the plane parts *e'* to produce the counter parts thereof at the front ends of the side pieces for the prongs of the pommel to be fitted upon, as will be shown hereafter.

For turning the cantles the pattern Y and the carrier Z for the wood pieces to be turned are used, being put in the lathe in place of

the others removed, and two wood pieces being attached to the carrier Z, one on each side; but in this case I prefer to have the shaft extend through the carrier Z, or nearly so, instead of terminating at the face-plate M; but I use both the face-plates M and S, and besides I have stud-pins in the sides of the carrier for entering the sides of the wood pieces as a further means of staying them. As the cantles are shorter than the side pieces by more than half, a pattern-piece of the length of the one for use in turning said side pieces is long enough for repeating the cantle pattern, which I do, and thus turn out two cantles from one piece. Each part of the said pattern-piece Y, on either side of the center *b*, represents a complete pattern.

The notch formed in the cantle-piece corresponding to the notch *d* of the pattern Y adapts it to fit upon the parts of the side pieces, corresponding to *i* of the pattern, when they are united in the A-shape indicated in Fig. 9; and the oval-tapered form produced opposite the notch by the part *e* of the pattern becomes the rear side and upper end, shown at *f*, Figs. 9 and 10. The notches or depressions in the opposite edges of the carriers are merely to allow the cutters to act unobstructedly, the edges of the pieces being turned in, these parts corresponding to the depressions or notches in the pattern. The pommel and horn are produced from a block previously sawed in the form represented at *g*, Fig. 7, which is applied to the shaft A and the carrier-block *h*, as shown, to be put in the lathe for being turned, the said shaft passing nearly through the hole, but not projecting so as to interfere with the application of the face-plate S, and the prongs *i* of the block embracing the tapered end of the carrier *h*, and receiving the steady-pins *k*, which are thrust out so as to penetrate them slightly by the lever *l*, to which they are pivoted eccentrically to its axis for the purpose, as clearly shown in Fig. 7. *j* represents the pattern for directing the cutters in turning this block *g*, by which the exterior form will be shaped to correspond with that of the pattern; the part *m* producing the lateral and front projection on the top of the horn, the part *n* the undercut portion below, while the other parts round and taper the parts below, leaving the under sides of the prongs *i* to embrace the side pieces in the part corresponding to *e'* of pattern X at the front end, as the notch of the cantle does the rear ends, when said side pieces are united, as shown in Fig. 9. The slide D is worked along the bed-piece A', whereon it is fitted to slide by a feed-screw, B', Fig. 3, having a wheel, C', which is turned by the pinion D', and it turns the wheel F, which turns the spindle E, Fig. 2. The pinion is geared with the driving-

shaft L by a pulley, F', belt G', pulleys H' I' K', and belt L'. M' is a belt-tightening pulley, and N' a lever therefor, by which the feed-screw and spindle are put in or out of gear. O' and P' represent the two parts of a divided nut used on the slide D, gearing or ungearing it with the feed-screw. P' is arranged above the screw, and O' below; they are arranged to slide toward and from the screw, and are connected by suitable shanks with a shifting-lever, Q', on opposite sides of its pivot, to be shifted simultaneously in either direction by said lever. R' is a double pawl, pivoted to the end of the lever, to be used both for fastening it up or down, by engaging with the rack S'.

In order to take the weight and friction of the frame K from the driving-shaft while having it pivoted in the same axis, I provide tubular extensions T' of the bearings of the said shaft, and pivot it on them, as shown.

To facilitate the rapid reduction of the pieces being turned, and at the same time have the finishing-cutters *p* on the cutter-disk G adjusted so as to finish and smooth the work properly, I provide the surfacing or roughing knives *q* on the side of the disk toward which the work moves, which said knives bow outward or in advance of the disk, and extend near to the periphery in such manner as to cut the whole depth necessary for roughing, leaving only a thin portion for the finishing-knives to remove, so that the work is completed by once running the pieces through.

I propose, in practice, to duplicate the slide D, pattern and carrying devices, bed A', and driving-gear on the opposite side of the frame, in place of the beam A², which is detachably connected, and have the said duplicate parts so arranged that, when one set is necessarily idle for shifting the work and patterns, the cutter-frame may be shifted over to the other set, and thus keep the cutters constantly running.

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

1. The combination, in a lathe for turning irregular forms, of a pattern, O, for the sides of the saddle, constructed as described, a carrier-plate, P, and suitable plates or holding devices M S, substantially as specified.

2. The combination, with the carrier *h*, of the steady-pins *k* and the lever *l*, substantially as specified.

3. The combination, with the feed-screw and the slide D, of the divided nut O' P', lever Q', double dog R', and racks S', substantially as specified.

ANDERSON R. PARK.

Witnesses:

J. S. ROGERS,
JOHN ADRIANCE.