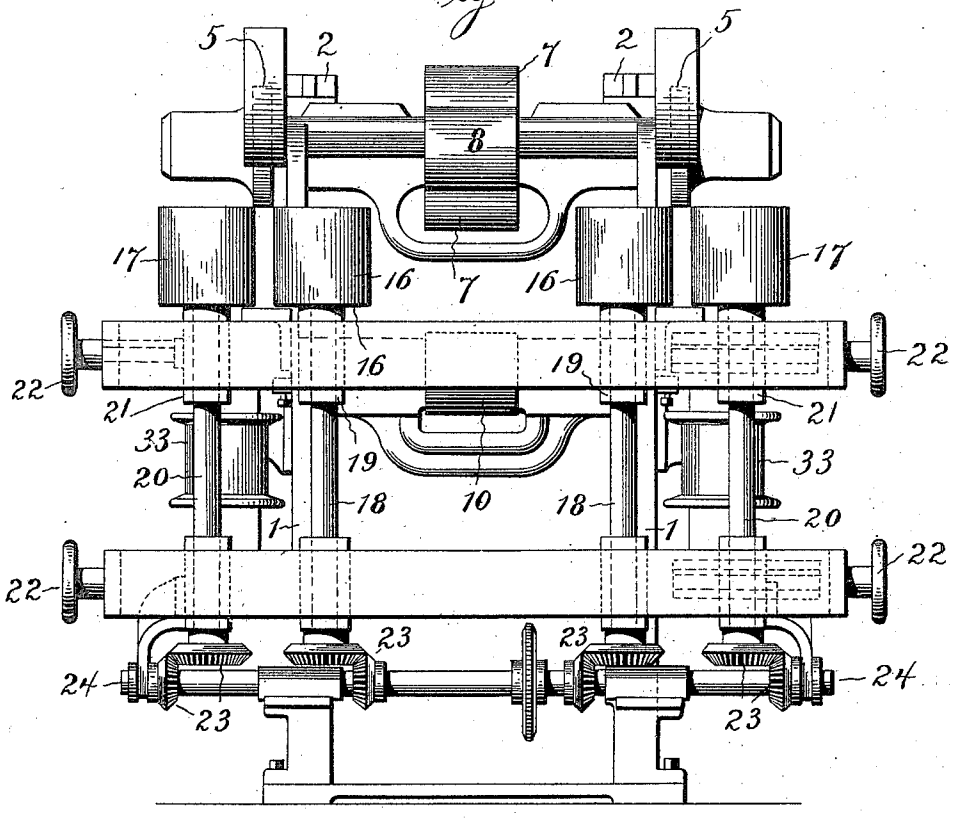
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F. E. PARK.

TONGUING AND GROOVING MACHINE.

No. 600,842. Patented Mar. 15, 1898.

Fig. 1.



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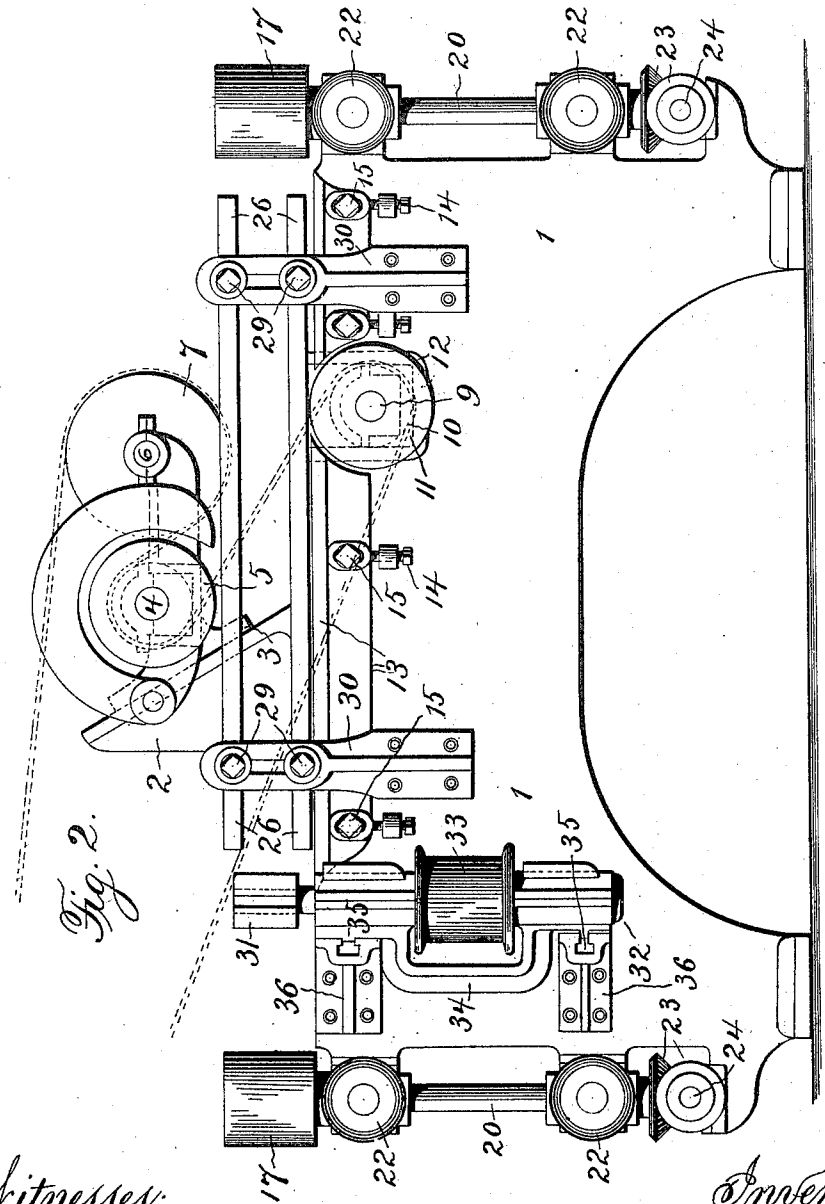


Fig. 2.

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(No Model.) 3 Sheets—Sheet 3.

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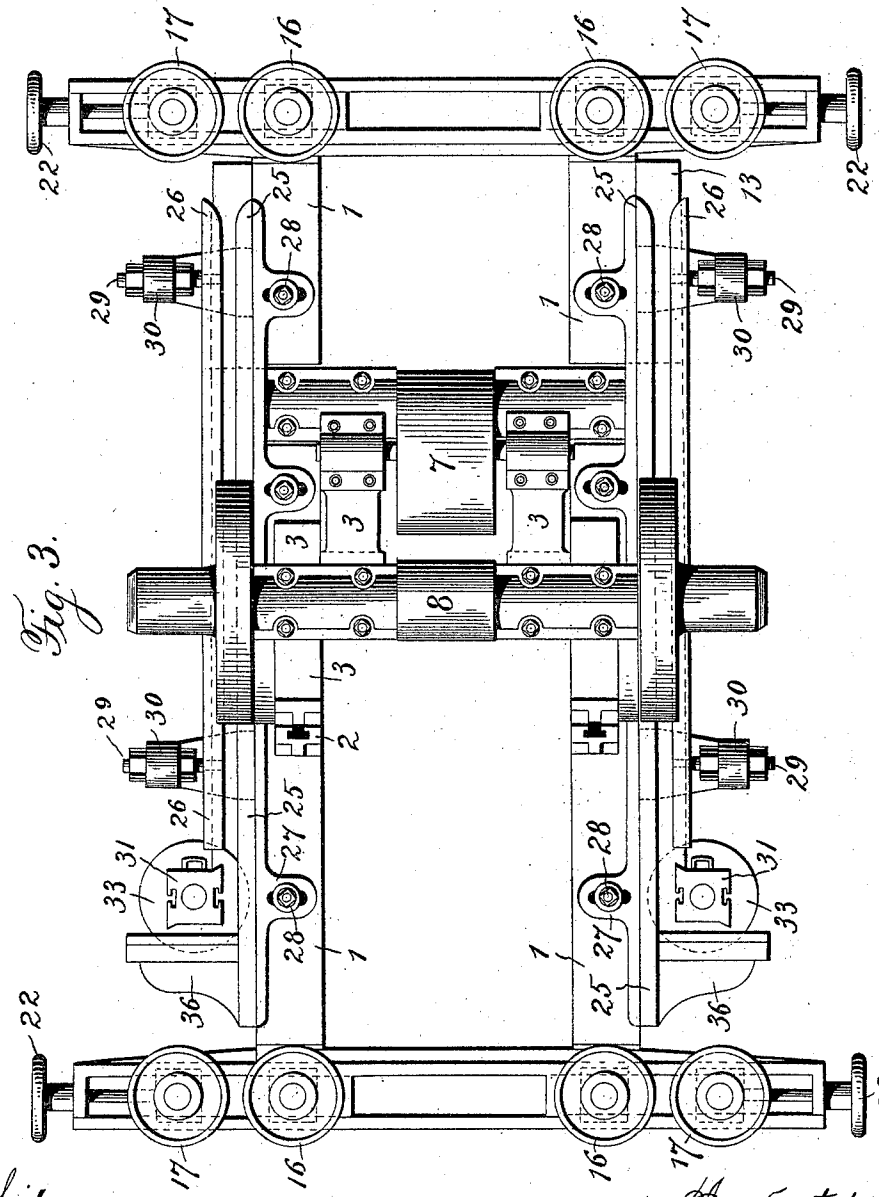


Fig. 3.

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UNITED STATES PATENT OFFICE.

FRANK E. PARK, OF NICHOLA, ALABAMA.

TONGUING-AND-GROOVING MACHINE.

SPECIFICATION forming part of Letters Patent No. 600,842, dated March 15, 1898.

Application filed April 15, 1897. Serial No. 632,325. (No model.)

To all whom it may concern:

Be it known that I, FRANK E. PARK, a citizen of the United States, residing at Nichola, in the county of Clarke and State of Alabama, have invented new and useful Improvements in Tonguing-and-Grooving Machines, of which the following is a specification.

This invention relates to tonguing-and-grooving machines for the matching of boards for use in flooring, ceilings, wainscoting, and other purposes.

It is the object of my invention to provide an improved machine for finishing or matching two boards or strips at the same time and feeding them on edge, the machine to be furnished with two horizontally-arranged arbors, upper and lower, carrying matcher heads or cutters on both ends and both driven from the same belt and in the required direction by aid of an idler-pulley mounted in the same vertically-adjustable frame with the upper arbor.

Other purposes of the invention will appear from the features of construction and novel combination of parts in a tonguing-and-grooving machine, as hereinafter more particularly described and claimed.

In the annexed drawings, illustrating the invention, Figure 1 is an end elevation of my improved tonguing-and-grooving machine. Fig. 2 is a side elevation of the machine. Fig. 3 is a plan of the machine.

Referring to the drawings, the numeral 1 designates the main frame of the machine constructed from iron or other suitable metal. On the top of each side piece of the main frame 1 there is a bracket 2, having one face or edge inclined and provided with a guideway for a vertically-adjustable frame 3, in which is carried one of the boxes for the upper horizontally-arranged arbor 4, that is provided with matcher-heads 5 at its opposite ends. The two vertically-adjustable frames 3 also carry boxes for the shaft 6 of an idler-pulley 7, that is placed in line with a pulley 8 on the upper arbor. The lower arbor 9 is also provided with a pulley 10 in line with the idler-pulley 7, so that by the aid of this idler both arbors can be driven in the proper direction from a single belt. There are suitable matcher-heads 11 on the opposite ends of this horizontally-arranged lower arbor.

The boxes for the lower arbor 9 are supported in pendants 12, depending from bed-pieces 13, that are adjustable on the side frames of the machine by means of screw-bolts 14 and 15, as shown.

The stuff to be matched is fed edgewise along the bed-pieces 13 by means of two sets of vertically-arranged feed-rollers 16 and 17 on each side of the machine. The innermost feed-rollers 16 are carried on vertical spindles 18, mounted in stationary boxes 19 at the ends of the machine-frame. In order to accommodate boards of differing thicknesses, the outermost feed-rollers 17 are carried on vertical spindles 20, mounted in laterally-adjustable boxes 21, controlled by hand-wheels 22 in such manner as to permit adjustment of these outermost feed-rollers toward and from the innermost feed-rollers. By means of suitable bevel-gearing 23 the several spindles of the feed-rollers may be driven from shafts 24, to which power can be applied in any convenient manner.

On each side of the machine above the bed-pieces 13 there are provided suitable inner guides 25 and outer guides 26, that are made adjustable toward and from each other to correspond with the thickness of the boards to be matched. The inner guides 25 are supported by brackets 27, that are adjustable at 28 on the tops of the side frames of the machine. The outer guides 26 are adjustable by means of screw-bolts 29 on brackets 30, secured to the machine sides. It will thus be seen that by means of the adjustments provided for the bed-pieces 13, outermost feed-rollers 17, and the guides 25 and 26 the machine can be readily adapted to the requirements of boards or strips of varying dimensions.

The boards or strips to be tongued and grooved are first brought to the desired thickness by means of any suitable surface-planer that may be located conveniently adjacent to the matching-machine. The operator then passes the planed boards or strips through the matching-machine two pieces at a time and edgewise, the work being fed along by the vertical rollers 16 and 17, while the tools carried by the matcher-heads 5 and 11 cut the required tongue and groove on opposite edges of the stuff. The idler-pulley 7, mount-

ed in the same vertically-adjustable frame with the arbor of the upper matcher-heads, affords means for permitting the use of a single belt to drive the upper and lower arbors, so that the upper and lower matcher-heads will be caused to revolve at the same speed.

By mounting the idler-pulley 7 and upper arbor 4 in the same vertically-adjustable frame 3 any required adjustment can be given to the upper arbor without altering the length of the driving-belt, for as that part of the belt from the lower arbor 9 to the upper arbor 4 is lengthened by adjustment of the frame 3 in an upward direction the other part of the belt from the idler-pulley 7 to the power-shaft will be correspondingly shortened.

In order to bead the face of stuff intended for ceiling and wainscoting, there are provided cutter-heads 31, carried on vertical spindles 32, that are fitted with pulleys 33 for any suitable belting. The boxes for these spindles 32 are formed in frames 34, detachably supported in guideways 35 of brackets 36, that are secured to opposite sides of the main frame near one end of the machine. The knives or cutters to be carried by the vertically-arranged heads 31 may be of any character suited to the beading that is desired for the face or back of the stuff operated on, and the work of beading is accomplished simultaneously with the tonguing and grooving of the boards or strips. As shown, the machine-frame is constructed to afford firm and adequate attachment for the several parts of the machine in their various adjustments for work on stuff of differing dimensions.

It will be obvious that a tonguing-and-grooving machine constructed as described will permit a large saving of labor, one man being able to accomplish with this machine as much work as two men working in the old way. There is also a saving in the wear of belts and a greater durability in the machine. All the boxes can be made long, with good wearing-surfaces.

What I claim as my invention is—

1. In a matching-machine for tonguing and grooving the upper and lower edges of boards or strips passed edgewise through the machine, the combination of the main frame provided on its top with side brackets, vertically-adjustable frames mounted in said brackets and provided with journal-boxes, an upper horizontally-arranged arbor mounted in said frames and provided with a driving-pulley and matcher head or heads, adjustable bed-pieces, a lower horizontally-arranged arbor provided with a driving-pulley and matcher head or heads and mounted in boxes carried by said bed-pieces, an idler-pulley having a shaft mounted in the same vertically-adjustable frames with the upper arbor, and a single driving-belt engaging said idler-pulley and the pulleys of the said upper and lower arbors, whereby the upper horizontally-mounted arbor is adjustable without altering the length of said driving-belt, substantially as described.

2. In a matching-machine, the combination of the main frame, the brackets mounted on the tops of said main frame at its sides and supporting frames that are provided with journal-boxes, an upper horizontally-arranged arbor mounted in said frames and provided with a driving-pulley and with matcher-heads at opposite ends, adjustable bed-pieces, a lower horizontally-arranged arbor mounted in boxes carried by said bed-pieces and provided with a driving-pulley and with matcher-heads at opposite ends, vertically-arranged feed-rollers at the ends of the main frame on both sides, adjustable inner and outer guides for the boards or strips passed through the machine edgewise by said feed-rollers, and an idler-pulley mounted on a shaft in the same frame with the upper arbor and adapted to permit the driving of the upper and lower arbors with a single belt, substantially as shown and described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FRANK E. PARK.

Witnesses:
EWAN SMITH,
JULIA F. RUSSELL.