

October 24, 1913.

DRAWING

3,053

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Finis D. Morris,

Chief of Division E.

AWK .

UNITED STATES PATENT OFFICE.

JAMES HAMILTON, OF NEW YORK, N. Y.

MACHINE FOR CURVILINEAR AND COMPOUND-BEVEL SAWING.

Specification of Letters Patent No. 3,053, dated April 15, 1843.

To all whom it may concern:

Be it known that I, JAMES HAMILTON, of the city, county, and State of New York, engineer, have invented and made and applied to use certain new and useful improvements in the means of sawing timber of any kind with a direct or compound bevel or what is technically known as a "winding cut" for any purpose whatever, the intent and effect of such improvements being to roll the log as it progresses to the saw by an apparatus that can be easily managed by an ordinary workman so as to cut a direct or changeable bevel or winding side on any log of timber as the same may be required, for which improvements I seek Letters Patent of the United States, and that the said improvements and the mode of constructing and working the same are fully and substantially set forth and shown in the following description and in the drawings annexed to and making part of this specification, wherein—

Figure 1, is a plan of the parts below the line 1, 2, see Figs. 3, 4, and 5. Fig. 2 is a plan of the parts above the line 1, 2. Fig. 3 is a longitudinal section through the middle of the plans. Fig. 4 is an end elevation as seen from the end A, of the other figure, and Fig. 5, is a similar elevation at the end B, and the same letters and numbers as marks of reference apply to the same parts in all the figures.

C, C, are the sleepers, D, D, the fender posts, E, E, the head posts and F, F, the tie pieces lengthwise and athwart of any usual saw mill.

a is the headstock with guide slides for the cross carriage plate and block *b*, which is fitted with a guide shaft 3 and pinion 4 working into a rack on the headstock beneath, to place the carriage, as wanted by the crank handle on the shaft 3. These parts are similar to other saw mills and need no particular description.

Next there is a rotary dogshaft 5 working through the block on the face of the carriage plate *b*, and in a small ring or journal box at the back end. A beveling lever *c* is fitted with an eye to go on the fore end of the dogshaft 5, and has a circular slot above through which a screw 7, secures a rotary dog and claws 6, to the lever *c*, in any required position. The lintel *d*, of a vertical frame on the headstock has a slotted plate *e*, on the front, through which the lever *c*,

passes so as to be prevented from moving except across the machine. Above the lintel *d* is a bar *f*, fixed on the tie pieces F, having a slot through lengthwise of itself. Upon this a plate or flange *g* is placed to carry a small journal box *h*, and by the holding plate 8 and holding screw and nut *g*, the plate *g*, and journal box *h*, can be secured in any required position on any part of the slotted bar *f*. The box *h*, receives the journal on this end of the beveling guide bar *i*, which is made double or slotted through nearly the whole of its length and carries a sliding cap 10, made with a clip flange side-wise and beneath so as to slide on the bar *i* with an opening through which the upper end of the beveling lever *c* is made to pass. The other end of the bar *i*, is made as a journal to lie through a small journal box 11, fitted on a plate *k*, which is sustained in place by a slotted bar *l*, fastened between the fender posts D, D, so that the screw and nut *m* may secure the box 11, and fore end of the beveling guide bar *i* in any required position. When thus fitted with these parts the saw mill is to be used as follows:

When the dotted line in the center of the beveling lever *c* and the longitudinal center of the beveling guide bar *i*, are coincident with the vertical line made by the tongue of a square placed on the slotted cross bar *e*, the sawing work will be vertical throughout the cut. But if it be required to saw any given twist or compound bevel on any face or side of a log, the workman first dogs the timber centrally true and so that the saw shall enter vertically fair with the required face at the fore end of the log, the workman then takes a common shifting bevel square and placing it to the bevel required on the back end of the log he then places the stock on the upper side of the slotted plate *e* and sets the center line on the beveling lever *c* to coincide with the edge on the tongue of the bevel, having done this he secures the rotary dog 6 and lever *c* together by the holding screw 7, this operation determines the position at this end of the slotted beveling or guide bar *i* and the workman placing the other end on the bar *l* with the center vertically over the center of the dogshaft that must carry the fore end of the log he secures both ends of the guide bar *i* by the screws and nuts *g* and *m*. In this situation when set to work the slotted guide bar *i* being a fixture, and independent of

the headstock, will lead the beveling lever *c* and force it to roll the log progressively in the lines of the required bevel as the log and headstock progress to the saw, the slotted plate *e* keeping the lever from changing by any inclining backward or forward lengthwise of the machine, and the lever *c*, and guide bar *i* will have their centers vertically parallel with the saw on finishing the cut. But if any required bevel be so considerable that it cannot be cut by one setting over the headstock then a corresponding preparation must be had to set the fore end of the bar *i* so much out of center with the forward dog-shaft as will make up the required bevel. The range on these parts is indicated by the dotted cross lines in Fig. 2, and it will be seen that by setting the parts so as to bring any given part of a log to a perpendicular under the longitudinal center of the beveling guide bar *i* the machines will saw with a given bevel to that given point on the log, the workman can then by slacking the screw 7, change the beveling lever *c* and the guide bar *i* to saw a greater or less bevel from the first point to another point and in this manner any successive required variations of beveled face or side may be cut on any log. And by making the slotted bar *k* movable in any convenient way above or beneath the longitudinal timbers of the machine and fitting the slotted bar *i* with a slide cap having a universal joint in the flange on the bar *k* any amount of bevel may be attained in any given length, or the same effect may be produced by making the connection permanent between the bar *k* and the bar *i* and allowing the other end of the bar *i* to slide in a

jointed pad movable crosswise on the bar *f*, the position of the bar *k* being adjustable in any convenient manner above or beneath the longitudinal timbers of the machine.

I do not intend to confine myself to the use of any particular form for the claws or holding dogs, nor to restrict myself to the use of a slotted beveling or guide bar, as I may use a frame or cross for the dogs and claws, and a round slide bar for the beveling bar, and I propose to vary the forms of all these parts to suit any required kind of work in any way that retains the substantial principles of the mechanical actions herein described.

Having thus described my said improvements and the modes of constructing working and varying both the parts employed and the operations they are intended to effect I claim as new and of my own invention—

1. The mode of mounting and applying the rotary dog 5, and beveling lever *c*, in combination with the slotted guide bar *i*, bar *f*, bar *k*, and lintel *d* for the purpose and in the manner described.

2. And finally I wish to be understood as covering all the mere mechanical variations that shall or may be really or substantially the same in the means employed and the effects produced.

New York, Nov. 7th, 1843.

JAMES HAMILTON.

Witnesses:

A. J. HAMILTON,
CHAS. M. KELLER.