

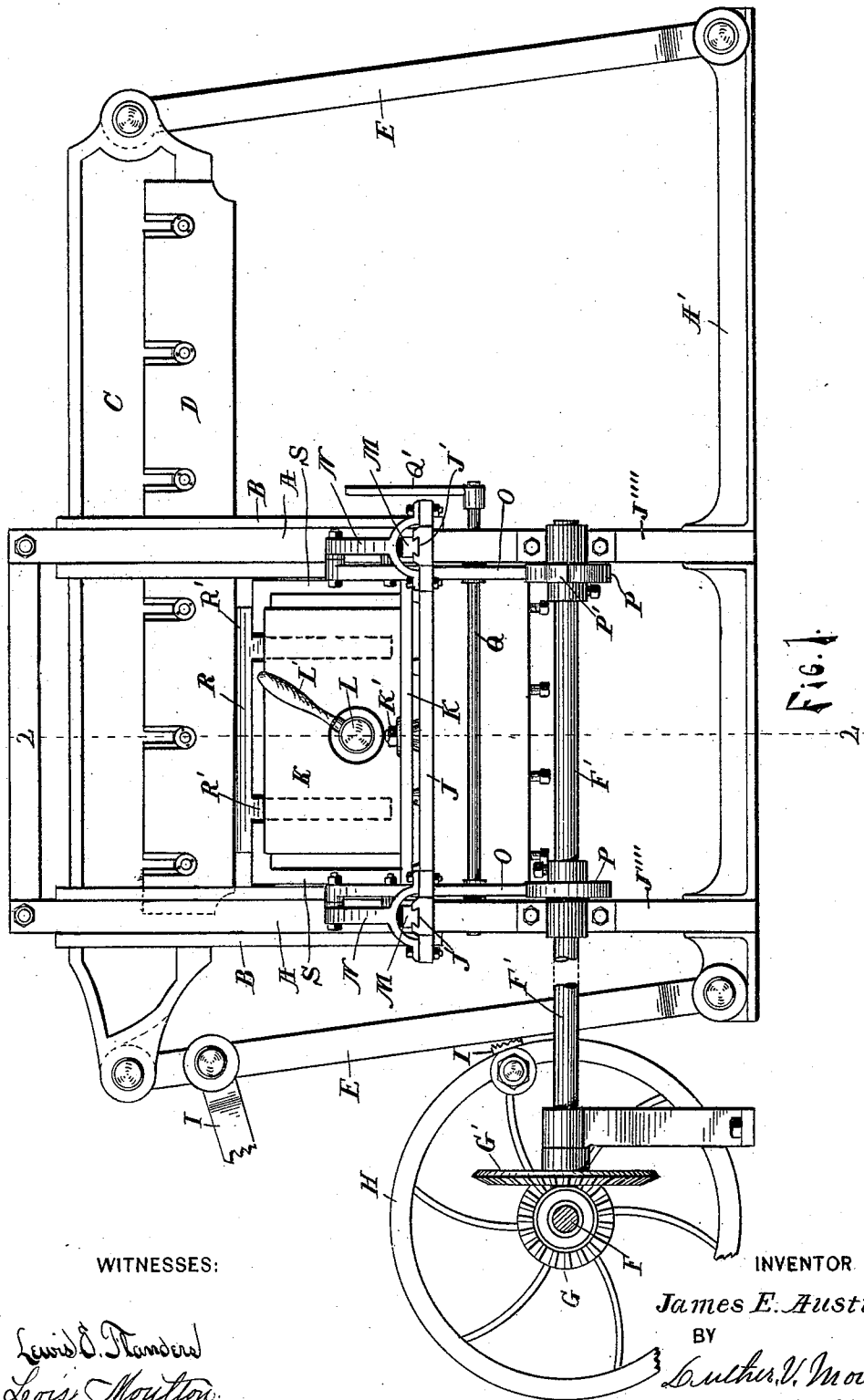
(No Model.)

3 Sheets—Sheet 1.

J. E. AUSTIN.  
SLICING MACHINE.

No. 528,247.

Patented Oct. 30, 1894.



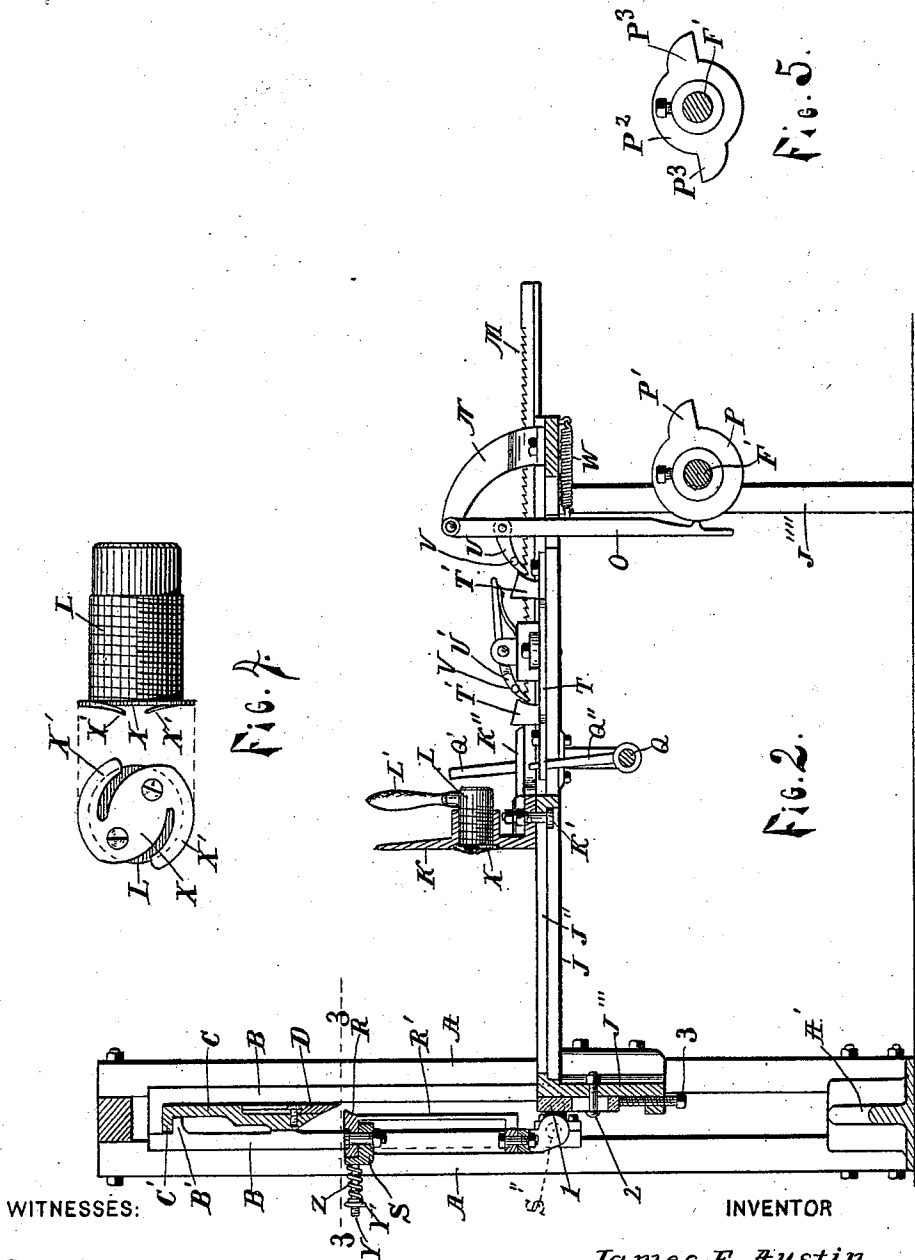
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WITNESSES:

INVENTOR

*Levin E. Standen*  
*Lois Moulton*

*James E. Austin*  
BY

*Arthur V. Moulton*  
ATTORNEY.

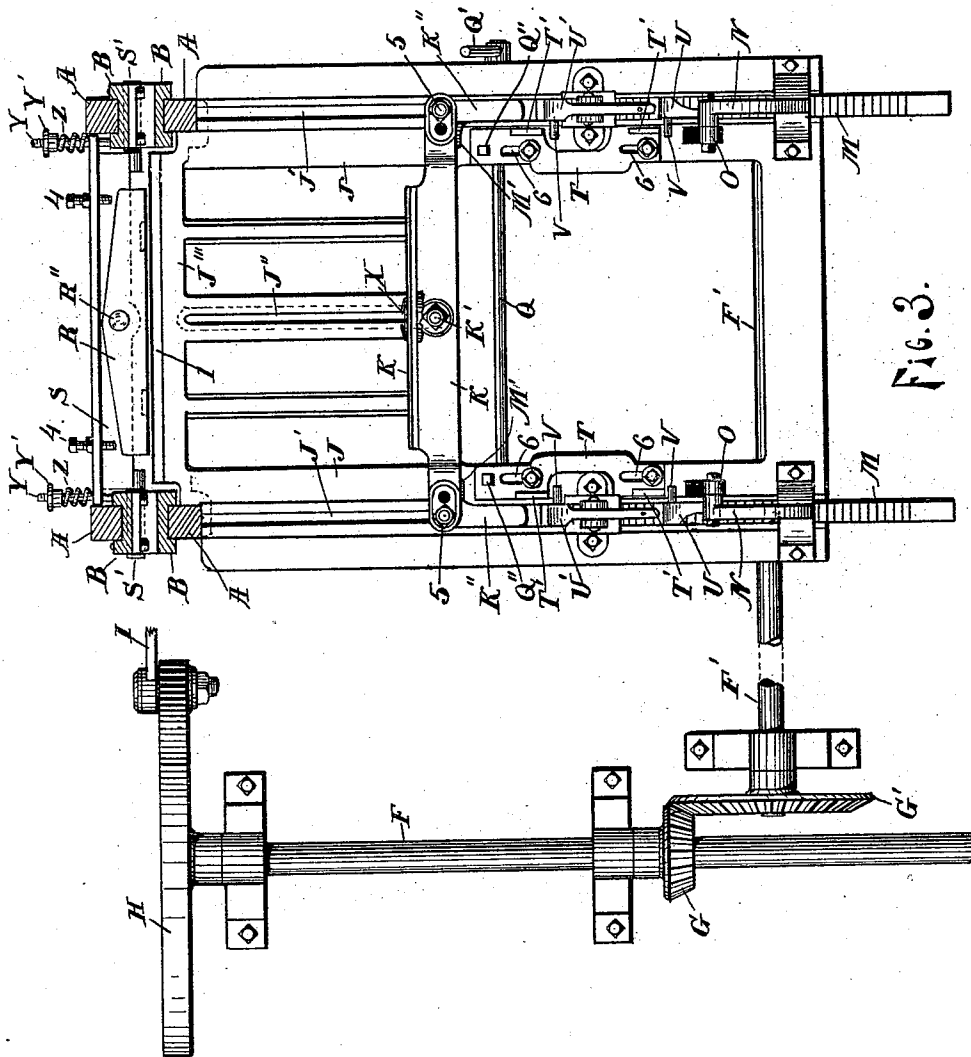
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# UNITED STATES PATENT OFFICE.

JAMES E. AUSTIN, OF STANDISH, MICHIGAN.

## SLICING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 528,247, dated October 30, 1894.

Application filed December 21, 1893. Serial No. 494,364. (No model.)

### *To all whom it may concern:*

Be it known that I, JAMES E. AUSTIN, a citizen of the United States, residing at Standish, in the county of Arenac and State of Michigan, have invented certain new and useful Improvements in Slicing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improved slicing machine, especially adapted to cut either tapered articles like shingles, or straight articles, like thin lumber, veneering, heading, staves, or hoops, and the object of my invention is to provide said machine with certain new and useful features, hereinafter more fully described and particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a rear elevation of a device embodying my invention; Fig. 2, a vertical section of the same on the line 2—2 of Fig. 1; Fig. 3, a plan view showing a horizontal section on the line 3—3 of Fig. 2; Fig. 4, an enlarged detail of the dog, and Fig. 5 a detail of one of the cams used in cutting parallel stock.

The frame of the machine consists of four posts A, arranged in pairs, a base A', to which said posts are secured, and a horizontal bed J, having dovetail grooves J', J', near each side; a middle slot J'', and a transverse plate J''', said bed being attached to two of the posts A at one end, and supported by suitable posts J'''' near the other end.

Between each pair of posts A is a vertically movable cross-head B, within which is the horizontal knife bar C, having attached the slicing knife D. Said knife bar moves longitudinally within said cross heads, and at its respective ends is pivoted to the upper ends of inclined rods E, E, the lower ends of which rods are pivoted to the base A'. The upper ends of said rods thus traverse an arc moving the knife longitudinally and downward, when cutting. A rib C' on the knife bar engages suitable grooves B' in the cross-heads and causes them to move vertically as the knife bar is reciprocated by means of a

crank wheel H, on the driving shaft F, and connected to one of the rods E by a pitman I.

Between the cross-heads B and below the plane of the knife, is a frame S having pivots S' at its lower corners, connecting it to said cross-heads, and pressed toward the stock at its upperside by springs Z, surrounding studs Y, and adjusted for tension by nuts Y'.

R is a presser bar engaging the stock slightly below the edge of the knife, to prevent checking, or splitting the stock. Said bar is pivoted at its middle R'' to the frame S, and adapted to vibrate on said pivot, in a horizontal plane, and limited in its movement by set screws 4—4. Extending downward from this bar are vertical bars R' to engage the stock and shift the bar R. A hard wood strip 1 to engage the knife, is secured to the vertical face of the plate J''' by bolts 2 passing through slotted openings in said strip, which strip is also vertically adjusted by screws 3, engaging its lower side.

The material to be sliced rests on the bed J, and is secured to the vertical face of the angle plate K by means of a dog, consisting of a rotary cylindrical body L, having a handle L', and screw threaded on its outer surface to fit a correspondingly screw threaded opening in the boss through which it passes. The end of said body abutting against the stock, is provided with a steel plate X, having in its periphery inclined barbs X', which enter the stock as the body L is rotated. The pitch of the thread on said body being less than the pitch of said barbs, the stock is easily drawn against the angle plate and firmly held by said barbs, with but little pressure on the handle L'. Said angle plate is pivoted at the middle on a bolt K', which bolt traverses the slot J'' as said plate moves to and from the knife. Said angle plate is fed forward by means of rack bars M, dovetailed to fit and move in the grooves J', and connected at their ends to the respective ends of the angle plate. U' are spring pawls engaging the teeth of said rack bars to hold them from moving backward, and said bars are moved forward by pawls U pivoted to the pendulum levers O, which levers are pivoted at their upper ends to hangers N, and near their lower ends engage cams P, P, with which they are

held in contact by springs W. Said cams are on a shaft F', which shaft is connected by bevel gears to the driving shaft F, said gears being so proportioned that the cam shaft F' rotates once to the driving shaft's twice. Said rack bars are laterally extended at M' and extra holes in the ends of the same and in the angle plate K are provided, whereby the bolts may be shifted to give the same difference of thickness at the ends to shorter, or longer shingles.

Rear extensions K'' on the angle plate overlap and rest on the rack bars to keep the angle plate from tilting backward. Q is a rock shaft operated by a lever Q', on which are arms Q'', which engage openings in longitudinally movable plates T, T', which plates are secured to the bed by bolts passing through slotted openings 6. On said plates are upwardly projecting ribs T' having inclined upper faces to engage pins V on the pawls U and U'' and lift said pawls out of engagement with the rack bars M, as said ribs are moved beneath said pins by sliding said plates T, by moving the lever Q'.

To bring the angle plate back to place after it has been fed forward, any well known appliance of weights or springs may be used.

For cutting tapered work like shingles, the cams P are set with their projection P' on opposite sides of the shaft, and in such position that the levers O will be alternately moved forward, when the knife is at its upper position. This brings the stock against the bars R', and shifts the bar R. As the knife descends the edge of said bar presses the stock below the knife and prevents splitting the portion cut off, said pressure being determined by the tension of the springs Z, Z. When the block is finished the angle plate is run back by lifting the pawls by the lever Q'.

For cutting parallel, or straight stuff, such as thin lumber, veneering, staves, hoops, &c., the presser bar R is fixed parallel to the knife by turning in the screws 4—4, and cams P<sup>2</sup> having two opposing projections P<sup>3</sup> as shown in Fig. 5, and adjusted to operate simultaneously are used, or the bevel gears G, G', may be changed to miter gears whereby the shafts F and F' will rotate in unison, and the single acting cams retained and set with their projections in line to act simultaneously. Either of these arrangements will feed the angle plate forward at both ends simultaneously and thus cut parallel stuff.

What I claim is--

1. In a slicing machine, the combination with the vertically-movable cross head, and with a knife, of a pivoted frame movable with said cross head, and a vibratory presser bar pivoted to said frame, substantially as described and for the purposes specified.

2. In a slicing machine, the combination with the vertically movable cross head, and the longitudinally-movable knife-bar, of a

frame, pivoted to said cross head, and a presser bar pivoted to said frame.

3. In a slicing machine, the combination of vertically-movable cross-heads, a longitudinally movable knife bar in said cross-heads, a frame, pivoted to said cross-heads, a presser-bar, pivoted to said frame, means for regulating the extent of the vibratory motion of said presser bar and for adjusting the same, a clamp for the stock, and cams for feeding said clamp toward the knife, substantially as described.

4. In a slicing machine, the combination of the frame, vertically-movable cross-heads, a knife-bar, longitudinally movable in said cross-heads, pivoted frames, movable vertically with said knife-bar, adjustable springs pressing the ends of said pivoted frames toward the stock, and vibratory presser-bars, pivoted at its center to said pivoted frame and having depending bars acted on to shift it, substantially as described.

5. In a slicing machine, the combination of a pivoted vertically-movable frame, and a presser-bar, pivoted thereto and provided with depending bars, substantially as described and for the purposes specified.

6. In a slicing machine, the combination with an angle plate to hold the stock, longitudinally movable rack bars secured to said plate, and stationary pawls, engaging said rack bars and serving to prevent rearward movement thereof, of means for moving said rack bars forward to feed the stock alternately or simultaneously at each end, said means embodying movable pawls engaging the rack bars, a cam shaft, adjustable cams mounted on said shaft, and connections between said movable pawls and cams, substantially as shown and described.

7. In a slicing machine, the combination with an angle plate, to hold the stock, a rack-bar secured to said angle plate, a cam, a pendulum lever, pivoted at its upper end and having its other end held yieldingly into engagement with said cam, a pawl, pivoted to said lever, and engaging said rack-bar, and a spring pawl, U, also engaging said rack bar, substantially as described.

8. In a slicing machine, a bed having dovetail grooves near each side and a central slot, an angle plate pivoted on a bolt movable in said slot, rack bars longitudinally movable in said grooves, pivoted levers having pawls engaging said rack bars, a driving shaft connected to the knife and reciprocating the same at each revolution, a cam shaft connected to said driving shaft to rotate at one half the speed of the same, and cams on said cam shaft adjustable to alternately, or simultaneously actuate said levers, substantially as described.

9. In a slicing machine, in combination with rack bars to move the stock to the knife, and pawls engaging and operating the same, mov-

able plates having inclined ribs engaging said pawls and lifting the same out of engagement with said rack bars and mechanism for simultaneously moving said plates, substantially as described.

10. In a slicing machine, in combination with the rack bars, and pawls to actuate the same, pins on said pawls, plates attached to the frame by screws passing through slotted openings, ribs on said plates having inclined sides engaging said pins, a rock shaft having a lever attached and arms on said shaft engaging and moving said plates, substantially as described.

11. In a slicing machine, the combination with an angle plate to hold the stock, a rack bar, secured to said plate, a pawl operated to feed said rack-bar forward, a pawl for preventing rearward movement of the rack-bar, said pawls having pins, a movable plate, provided with inclined ribs adapted to engage said pins and thereby raise the pawls out of engagement with the rack-bar, and a rock shaft, provided with an arm, for moving said plate, as specified.

12. In a slicing machine, the combination with a device for holding the stock, and longitudinally-movable rack bars secured to said

stock-holding device, of means for moving said rack bars forward to feed the stock alternately or simultaneously at each side, said means embodying movable pawls engaging the rack bars, a cam shaft, adjustable cams mounted on said cam shaft, and connections between said pawls and cams, substantially as described.

13. In a slicing machine, the combination with the table, a plate thereon to hold the stock, and a rack bar on said table connected to said plate, of a means for operating said rack bar, said means comprising a cam, a pendulum lever, pivoted at one end and having its other end held yieldingly into engagement with said cam, a pawl, pivoted to said lever and engaging said rack bar, said pawl having a pin projecting from it, and a movable rib, supported upon said table and engaging said pin for automatically releasing said pawl from its engagement with said rack bar, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES E. AUSTIN.

Witnesses:

H. J. RANDALL,  
H. F. BARBOUR.