

T. A. PETERSON & W. D. PLUE.
PLANING MACHINE.

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1,009,688.

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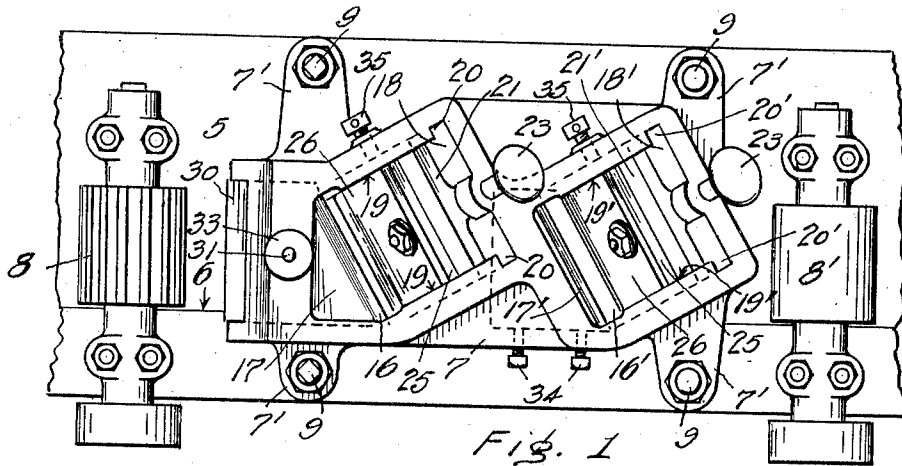


Fig. 1

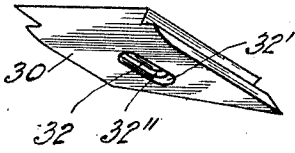


Fig. 4

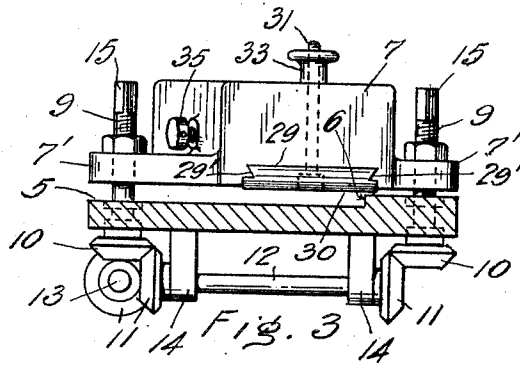


Fig. 3

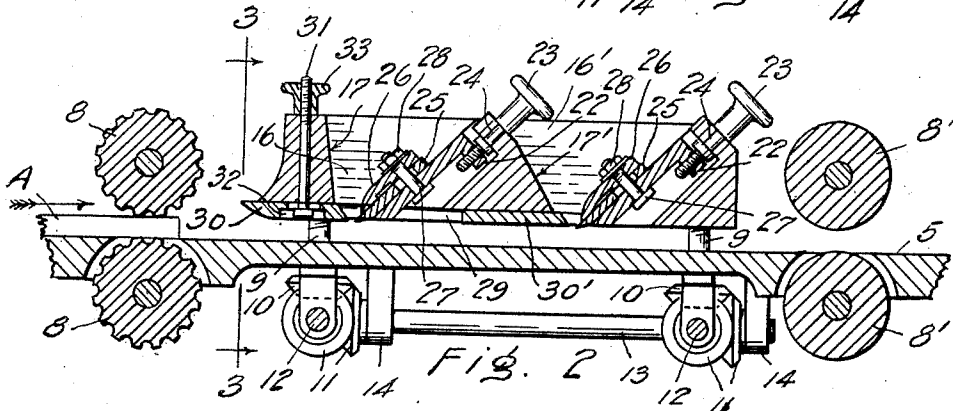


Fig. 2

WITNESSES:

H. Barnes

E. Peterson

INVENTORS:

William D. Plue and
Thomas A Peterson

BY
Pierre Barnes
ATTORNEY

UNITED STATES PATENT OFFICE.

THOMAS A. PETERSON AND WILLIAM D. PLUE, OF RAINIER, OREGON.

PLANING-MACHINE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, THOMAS A. PETERSON and WILLIAM D. PLUE, citizens of the United States, residing at Rainier, in the county of Columbia and State of Oregon, have invented certain new and useful Improvements in Planing-Machines, of which the following is a specification.

The object of this invention is to produce a planing machine which will be of simple construction and by which the surfaces of wood may be planed and dressed more smoothly than is possible with machines employing rotary cylinder heads; and is applicable not only to the surfacing of boards, but also to planing other mill products such as flooring or rustic.

Our improvements consist, essentially of a vertically adjustable frame which is provided with a series of planer knives having their beveled cutting edges arranged diagonally so that the work or stock when fed thereto will be urged toward the guide side of the machine, and the planing accomplished by a drawing cut. The planer knives are mounted upon adjustable supports and carry superposed caps or chip-breakers which furnish the requisite rigidity to the knives and also turn the shavings from the latter to keep the throats of the knife housings clear of obstructions. The frame is also provided with plates which may be regulated to afford various sizes of openings and in accordance with the character of the wood being planed and the amount of material which is to be removed from the stock in the planing operations.

The invention further consists in the structural details, their arrangement and combination, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a plan view of a portion of a planer embodying our invention. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is a cross sectional view taken through 3—3 of Fig. 2. Fig. 4 is a perspective view of one of the throat plates shown detached.

The reference numeral 5 represents the feed-bed of a wood planing machine formed or provided with a longitudinal guide wall 6.

8 and 8' are pairs of feed rollers, which are coupled by gears in the ordinary way for the purpose of causing the work A, Fig. 2, to be progressively passed through the planer as will be readily understood.

Disposed above the machine bed 5 is a frame 7 which is vertically adjustable as by the provision of rotary standards 9 which are screw threaded for engagement in threaded holes of frame lugs 7'. Secured to the lower ends of these standards are bevel gears 10 which are in mesh with pinions 11 carried by transverse and longitudinally arranged shafts 12 and 13 journaled in boxes 14 below the machine-bed. Consequently, to adjust the height of said frame with respect to the machine bed, it is only necessary to give suitable rotary motion to one of the standards to cause the other standards to be correspondingly affected, and to which end, the upper end 15 of one or more of the standards is desirably formed of a polygonal shape for engagement by a removable socket wrench.

Provided in the frame 7 are two or more openings 16 and 16' each provided with inclined forward and back walls 17, 17' and 18, 18' and parallel side walls 19, 19'. The latter being disposed diagonally form the longitudinal axis of the frame. At the rear of the side walls 19 and 19' of the respective openings are slots 20, 20' forming ways for the lateral edges of carriers 21, 21'. Said carriers being each provided with a lug 22 which extends rearwardly from their upper edges and are provided with threaded apertures for adjustment screws 23 extending through holes 24 in the frame. Placed upon each of said carriers is a planer-knife 25 having a beveled cutting edge 25 and above each such knife is a cap 26. Bolts 27 pass through the respective groups of carriers, knives and caps to receive nuts 28 upon their outer end for securing the knives and caps to the carriers. The planer knives and caps are of widths to fit between the side walls 19 and 19' of the respective frame openings. Extending longitudinally of and upon the underside of said frame is a recess 29 having its sides 29' formed, as shown in Fig. 3, with dove-tail grooves. A plate 30 is fitted within this recess to the front of the forward planer-knife and another plate 30' similarly disposed with relation to the rear planer knife. The plate 30 is desirably held in adjusted position by a bolt 31 extending through a slot 32 in the plate and the frame to receive a securing nut 33 above the latter. The head of this bolt is accommodated in a recess 32' in the plate and bears against the top 32'' of the recess upon opposite sides

of the slot. The other plate 30' is advantageously secured by set-screws 34, Fig. 1, extending through screw-holes in the frame and impinging against the adjacent side of the plate. A set-screw 35 may also be used through a side of the frame to supplement the adjustment screws 23 in securing the carriers 21, 21' in adjusted positions.

It will be seen that the cutting edges of the knives are arranged diagonally with respect to the guide 6 of the machine bed and in consequence when a board A or other character of work is fed through the machine by the instrumentality of the feed roller 8 and 8', that the knives will attack the work diagonally and also cause the same to bear against the guide.

In operation, the forward of the knives 25 would be set to a less depth than the following so as to make what is known as a rough cut and the following knife or knives would then be set to make the finishing cut.

Lumber planed by planer knives operating according to our invention will produce a straighter and more even surface than can be accomplished with the ordinary planing machines. Consequently, flooring, ceiling, rustic or other matched or finished lumber will register better than hitherto through the absence of all short or kinky places in the work, whereas in the old processes, which employ a rotary cylinder, no provision is made for straightening the planed surface but simply to dress the lumber to equal thicknesses throughout.

What we claim as our invention, is—

1. In a planing machine, the combination with a machine feed bed having a guide at one side, feed rollers, of a frame disposed in spaced relation above said feed bed, said frame being provided with a plurality of openings, each of said openings having inclined forward and back walls and parallel side walls, the said side walls being disposed diagonally with respect to the longitudinal axis of the frame and said front and rear walls being inclined with respect to the horizontal axis of the frame, each side wall of an opening having the rear thereof formed with a slot providing ways, knife carriers having the lateral edges thereof projecting in said slots, and means for adjustably connecting the knife carriers to the inclined rear walls of said openings.

2. In a planing machine, the combination with a machine feed bed having a guide at one side, feed rollers, of a frame disposed in spaced relation above said feed bed, said frame being provided with a plurality of openings, each of said openings having inclined forward and back walls and parallel side walls, the said side walls being disposed diagonally with respect to the longitudinal axis of the frame and said front and rear walls being inclined with respect to the horizontal axis of the frame, each side wall of an opening having the rear thereof formed with a slot providing ways, knife carriers having the lateral edges thereof projecting in said slots, means for adjustably connecting the knife carriers to the inclined rear walls of said openings, knives mounted upon each of the carriers, a cap positioned against each of the knives, and means extending through the caps, knives and carriers for coupling them together, said knives provided with slots to permit of their adjustment upon the carriers.

3. In a planing machine, the combination with a machine feed bed having a guide at one side, feed rollers, of a frame disposed in spaced relation above said feed bed, said frame being provided with a plurality of openings, each of said openings having inclined forward and back walls and parallel side walls, the said side walls being disposed diagonally with respect to the longitudinal axis of the frame and said front and rear walls being inclined with respect to the horizontal axis of the frame, each side wall of an opening having the rear thereof formed with a slot providing ways, knife carriers having the lateral edges thereof projecting in said slots, means for adjustably connecting the knife carriers to the inclined rear walls of said openings, knives mounted upon each of the carriers, a cap positioned against each of the knives, and means extending through the caps, knives and carriers for coupling them together, said knives provided with slots to permit of their adjustment upon the carriers, said carriers spaced from said inclined rear walls of the openings.

THOMAS A. PETERSON.
WILLIAM D. PLUE.

Witnesses:

G. H. CURRIER,
G. A. MORRISON.