J. T. JAMES.

PLANING ATTACHMENTS TO SAWS.

No. 195,609. Patented Sept. 25, 1877.

Fig. 1.

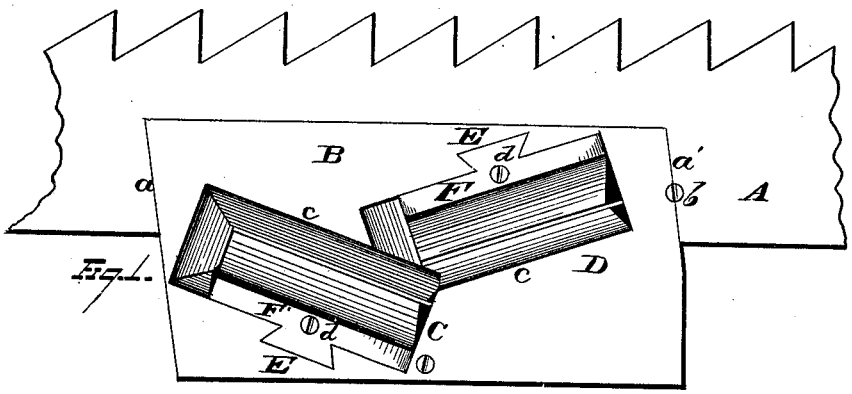


Fig. 2.

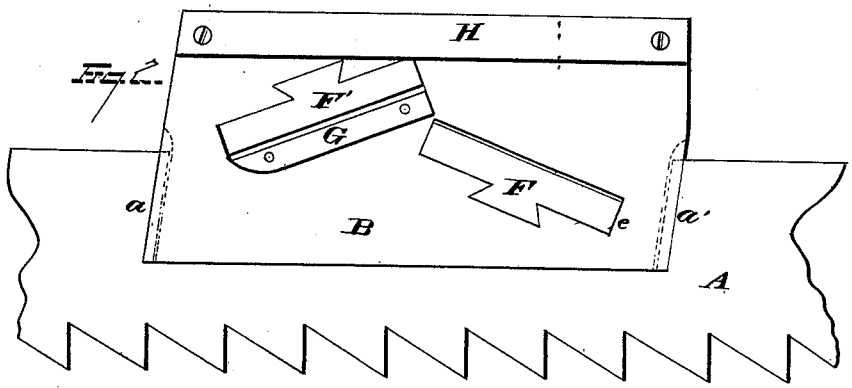
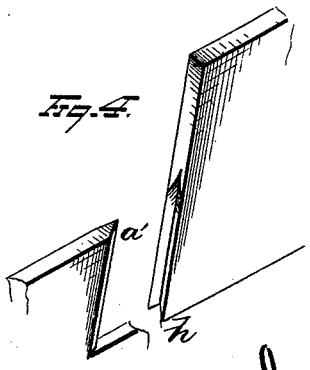


Fig. 3.

Fig. 4.



WITNESSES

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JOHN T. JAMES, OF LOVE'S MILLS, VIRGINIA.

IMPROVEMENT IN PLANING ATTACHMENTS TO SAWS.

Specification forming part of Letters Patent No. **195,609**, dated September 25, 1877; application filed May 3, 1877.

To all whom it may concern:

Be it known that I, JOHN T. JAMES, of Love's Mills, in the county of Washington and State of Virginia, have invented certain new and useful Improvements in Planing Attachments for Saws; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improved planing attachment for saws; the object of the same being to provide a saw with an attachment whereby the saw, in operation, serves the double purpose of both sawing and planing the boards at a single operation.

In the accompanying drawings, Figure 1 represents a plan view of the rear side of the planing device, showing the means employed for securing the same to the saw-blade; and Fig. 2 shows a plan view of the cutting side of said attachment. Fig. 3 represents longitudinal sections of the planer-bits. Fig. 4 shows the planing attachment removed from the saw-blade.

A represents a saw-blade, of any style or form, the rear portion of the same being cut away at *a a'*, preferably on lines running diagonally to the length of the saw, to receive the planer-plate B, which latter is of practically the same thickness as the saw-blade, and its opposite faces are flush with the sides of the same when secured in place. The ends of plate B are constructed with grooves *h*, which snugly fit the beveled edges *a a'*. The upper end of the plate B is first inserted in place, when the lower end is forced in position, and rigidly secured by means of a screw, *b*.

It will be observed that this method of securing the planer attachment is not only an effectual one, and prevents the displacement of the same while in use, but it also allows of the ready removal of the attachment, when desired. Again, owing the beveled edges *a a'*, the operation of the saw-blade is in nowise affected, should the same be used with the planer attachment removed therefrom.

Plate B projects rearwardly from the back of the saw-blade, and has openings C D formed therein, which openings are beveled on the rear side, as shown at *c*. Each opening C D has a dovetail mortise, E, located about midway on one side of the same, within which mortises are rigidly secured corresponding dovetailed tenons formed on the rear edges or backs of the bits F F', the tenons being firmly secured in place by means of screws *d*. Although instead of securing the knives in place by means of screws *d*, I may adapt the bits to be adjustably secured by various means, so that they may be adjusted to cut at variable depths, when so desired.

The lower bit F is termed a "jack" or "roughing" bit, as it takes the lead, and accomplishes the heavier portion of the work. It is located in the plate B, on a line passing diagonally through the saw-blade, for the purpose of securing a gradual shearing-cut to shave the surface of the timber as the saw moves through the saw-kerf.

The lower edge and corner *e* of bit F is beveled off flush with the plate B, in order that the bit may be moved in direct contact with the timber without any danger of disengaging the same from the plate.

In order that the jack or roughing bit F may be enabled to perform its work in a gradual and effective manner, the cutting-edge of the bit gradually inclines outwardly from the plate B, from its lower to its upper end, thus adapting the bit on each successive stroke to cut a shaving of the required thickness to remove a sufficient portion of the surface of the timber to render it adapted for the action of the smoothing or finishing bit.

The upper bit F' is termed the "smoothing" or "finishing" bit, the cutting-edge *f* of which is arranged in a reverse position to that of the jack or roughing bit, as the latter cuts from the saw-blade, while the smoothing-bit cuts toward the same. Bit F' is arranged on a line diagonal to the length of the saw-blade, the lower edge of the bit being located in rear of the upper end of the jack-bit, while the upper end inclines toward the saw-blade, and slightly projects over the upper end of the jack-bit.

The upper and lower bits are arranged with their cutting-edges adapted to cut to and from the saw-blade for the following reason: The

grain of the wood is irregular and twisting, owing to knotty and bent timber; and hence the tendency of the lower bit will sometimes be to gouge into the timber, and again to be forced away from the same, and therefore, when the grain of the timber is such that the roughing-bit is drawn into the timber with such force as to bind the saw-blade, such action will be prevented by the smoothing-bit, which is arranged to cut in the opposite direction; and hence, when the roughing-bit has a tendency to bind, the smoothing-bit is forced away from the face of the timber, thereby equalizing the lateral pressure and strains brought to bear on the planer, and causing it to work most effectually in any kind of timber, however variable and uncertain its grain may be.

Immediately in front of the smoothing-bit F is secured a bearing-plate, G, for the following purpose: As the cutting-edge of the smoothing-bit must project outwardly from the face of the plate B beyond the cutting-edge of the roughing or jack bit F, the smoothing-bit would operate to split and sliver the surface of the lumber were it not for the bearing-plate G, which serves to rest against the surface of the lumber, and causes the smoothing-bit, in its travel, to make a shallow shearing-cut, simply to impart a perfectly smooth finish to the lumber.

H is a guide-plate, and is secured by screws *g*, or in any desired manner, to the rear edge of the planer-plate B. This plate is set slightly below the cutting-edges of the bits F F′, and serves to steady their action and allow of their variable adjustment without affecting the operation of the planer.

Any ordinary saw may be readily furnished with a planer attachment of the construction above set forth, and the same work accomplished thereby as now necessitates the employment of separate and costly machinery, as the bits of my improved planing attachment operate to counterbalance each other while in operation, and thus require only the expenditure of the minimum amount of power to operate the planer attachment.

I do not limit myself to the exact construction of planer attachments shown and described, as it is evident that planing-bits may be secured within the body of the saw-blade, and angularly thereto, without departing from the spirit of my invention.

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

1. The combination, with a saw-blade, of roughing and smoothing planing-bits, the same arranged one above the other, and inclined in opposite directions, substantially as and for the purpose set forth.

2. The combination, with the planer-plate, provided with openings having dovetailed mortises leading thereto, of planing-bits constructed with dovetail tenons, substantially as and for the purpose set forth.

3. The combination, with a saw-blade, of a planer-plate, having planing-bits secured thereto, and the smoothing or finishing bit, having a bearing-plate secured in advance thereof, substantially as and for the purpose set forth.

4. The combination, with a saw-blade, of a planer-plate and roughing and smoothing bits, a guide-plate secured to the rear edge of the planer-plate, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 1st day of May, 1877.

JOHN T. JAMES.

Witnesses:
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