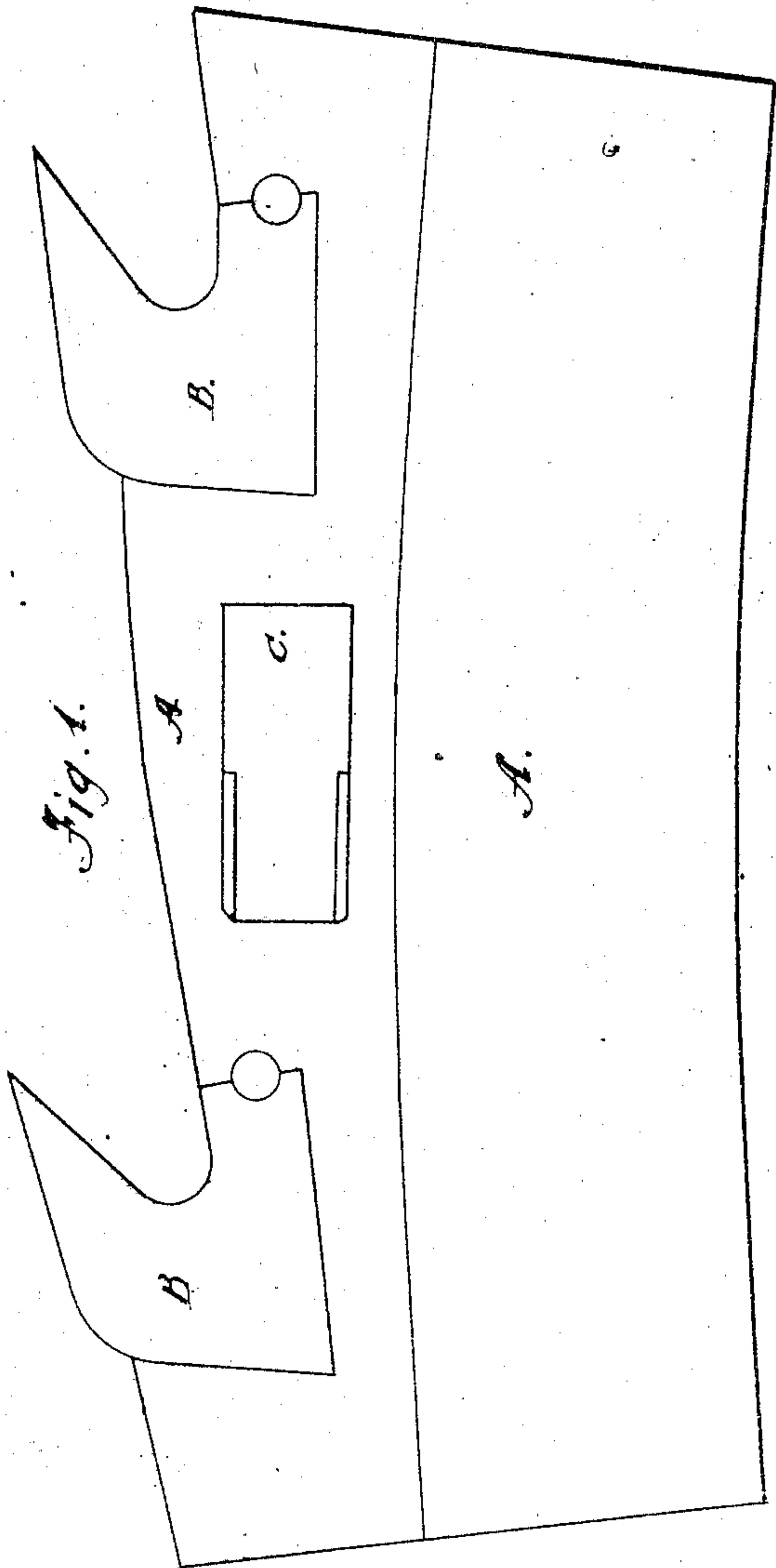


*J. E. Emerson and W. S. Winsor,  
Saw.*

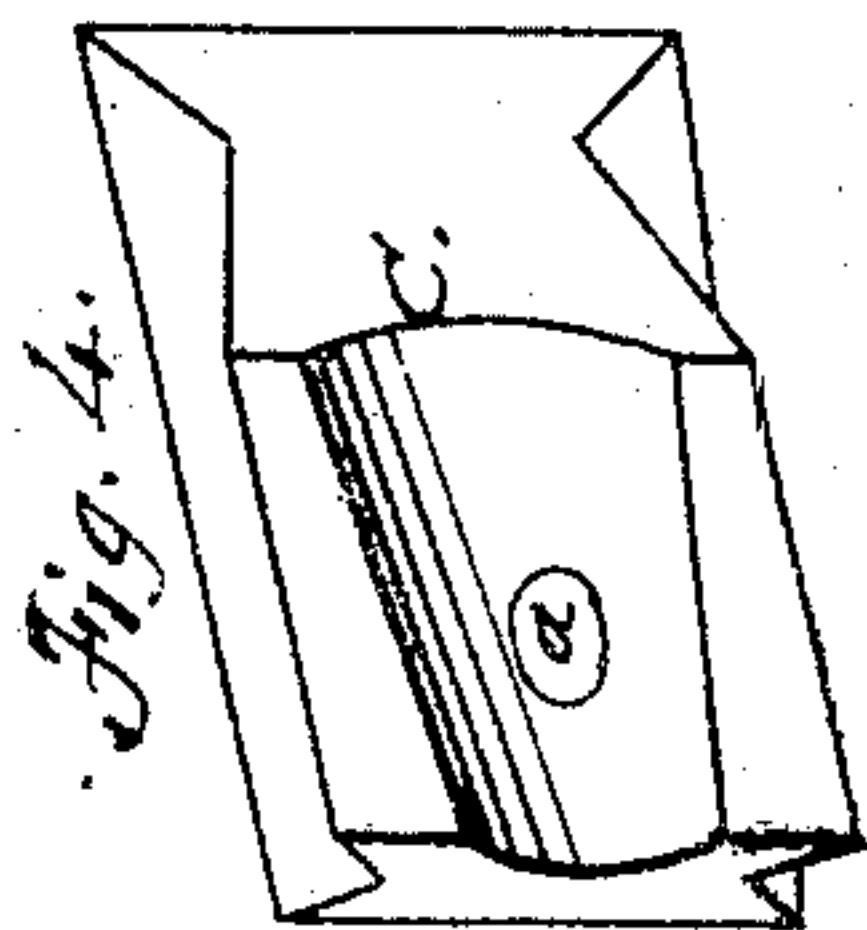
*Nº 74,522.*

*Patented Feb. 18. 1868.*

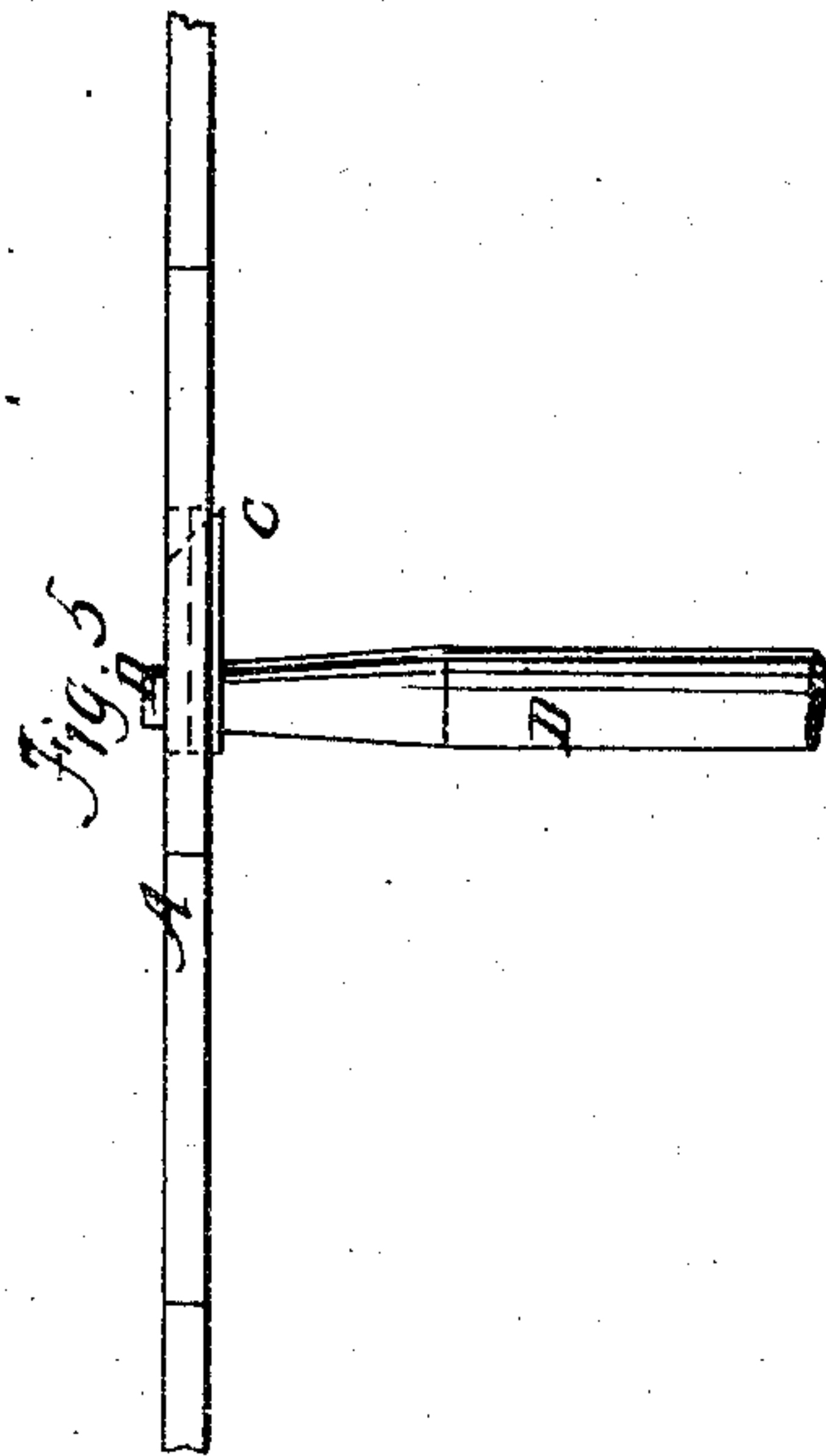
*Fig. 3.*



*Fig. 1.*



*Fig. 4.*



*Fig. 5.*

*Fig. 2.*



*attest:*

*Jno. D. Patten  
Not. Jewell*

*J. E. Emerson and W. S. Winsor.  
By their atty A. B. Stoughton.*

# United States Patent Office.

JAMES E. EMERSON, OF TRENTON, NEW JERSEY, AND WILLIAM S. WINSOR,  
OF JAMESTOWN, NEW YORK.

*Letters Patent No. 74,522, dated February 18, 1868.*

## IMPROVEMENT IN SAWS.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that we, J. E. EMERSON, of Trenton, in the county of Mercer, and State of New Jersey, and WILLIAM S. WINSOR, formerly of Titusville, Pennsylvania, now residing in Jamestown, in the county of Chautauqua, and State of New York, have invented certain new and useful Improvements in Planing-Saws; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a portion of a circular saw constructed after our general plan.

Figures 2 and 3 represent vertical transverse sections through the same, showing the projection of the planers from the faces of the saw.

Figure 4 represents, on an enlarged scale, a perspective view of one of the planing-tools or cutters.

Figure 5 represents a tool in place, for removing or replacing the planing-cutter when it is to be sharpened, or for any other purpose.

Similar letters of reference, where they occur in the separate figures, denote like parts in all the drawings.

Our invention relates to a removable and replaceable planing-cutter, in connection with a saw-plate that is thinner at its edge than at its central portion, or so that the saw-teeth and planing-cutters, jointly, shall make a kerf or space sufficient for the body of the saw to pass through.

To enable others skilled in the art to make and use our invention, we will proceed to describe the same with reference to the drawings, first premising that the invention is equally applicable to reciprocating as to rotary saws.

A represents a saw-plate, made thin at its outer edge, and thicker towards its centre. The planing-cutters, C, are so constructed as to be reversible, and thus be used for planing on either face of the saw, or on both of its faces, as may be desired. The teeth, B, of the saw, which are also of the removable kind, are so made as to cut a kerf of sufficient width to clear the thin or outer portion of the saw, and the planing-cutters are set to plane off the rough surface left by the saw-teeth, and widen the kerf sufficient to clear the saw where it is thicker than at its edge. In sawing and planing at one operation, it will be found necessary to have a support, guide, or gauge, behind the planing-cutters, to prevent the timber from being drawn into or towards the cutting or planing-edges, and which, if not prevented, causes rough work. This support or bearing may be obtained in various ways, either by making the saw-plate thicker at or near the planing-cutters, or by making the cutters thicker at one edge, so as to fill the kerf, or by inserting other pieces into the plate, at or near the edge of the cutters, or by placing a deflecting-plate or piece on either or both sides of the cutter or saw. Making the saw thicker at the centre than at the edge, makes it serve as a support to the timber near the cutter, and prevents the cutters from running into the wood. It also gives support to the rim, which may be made very thin.

A saw made as herein described, may be used as a face-plate planer, the piece to be planed being run on a carriage, and thus planed out of wind, and reduced to a uniform thickness or width. The saw takes off the excess, and the planer smooths it. For sawing, the plate may be slightly thicker at the centre than at the edge, so as to open the kerf to let the teeth pass through free on the rear, without cutting or marring the planed surface. In sawing and planing with a saw such as just above described, no more wood is cut away than by a common saw-kerf, because the saw-teeth are very thin, cutting a very narrow kerf, and the planers take off the balance, to make it wide enough for the body of the saw to pass through. A plate may be rolled, so as to be thin at the edge, or three plates may be united, allowing the centre one to project far enough to form the teeth, and a support for the planing-cutters. For removing and replacing the planers, a hole, *a*, may be made in them, in which a steel pin, D, fig. 5, may be placed, and by tapping on the pin, loosen or fasten the planers, as may be desired.

Having thus fully described our invention, what we claim therein as new, and desire to secure by Letters Patent, is—

In combination with a saw-plate that is thinner at its edge than at its central portion, the removable and replaceable teeth and planing-cutters, substantially in the manner and for the purpose described.

Witnesses to signature of J. E. EMERSON:

A. B. STOUGHTON,

EDM. F. BROWN.

Witnesses to signature of W. S. WINSOR:

JOHN J. KINNEY,

SAM'L G. CURTIS.

J. E. EMERSON,  
WM. S. WINSOR.