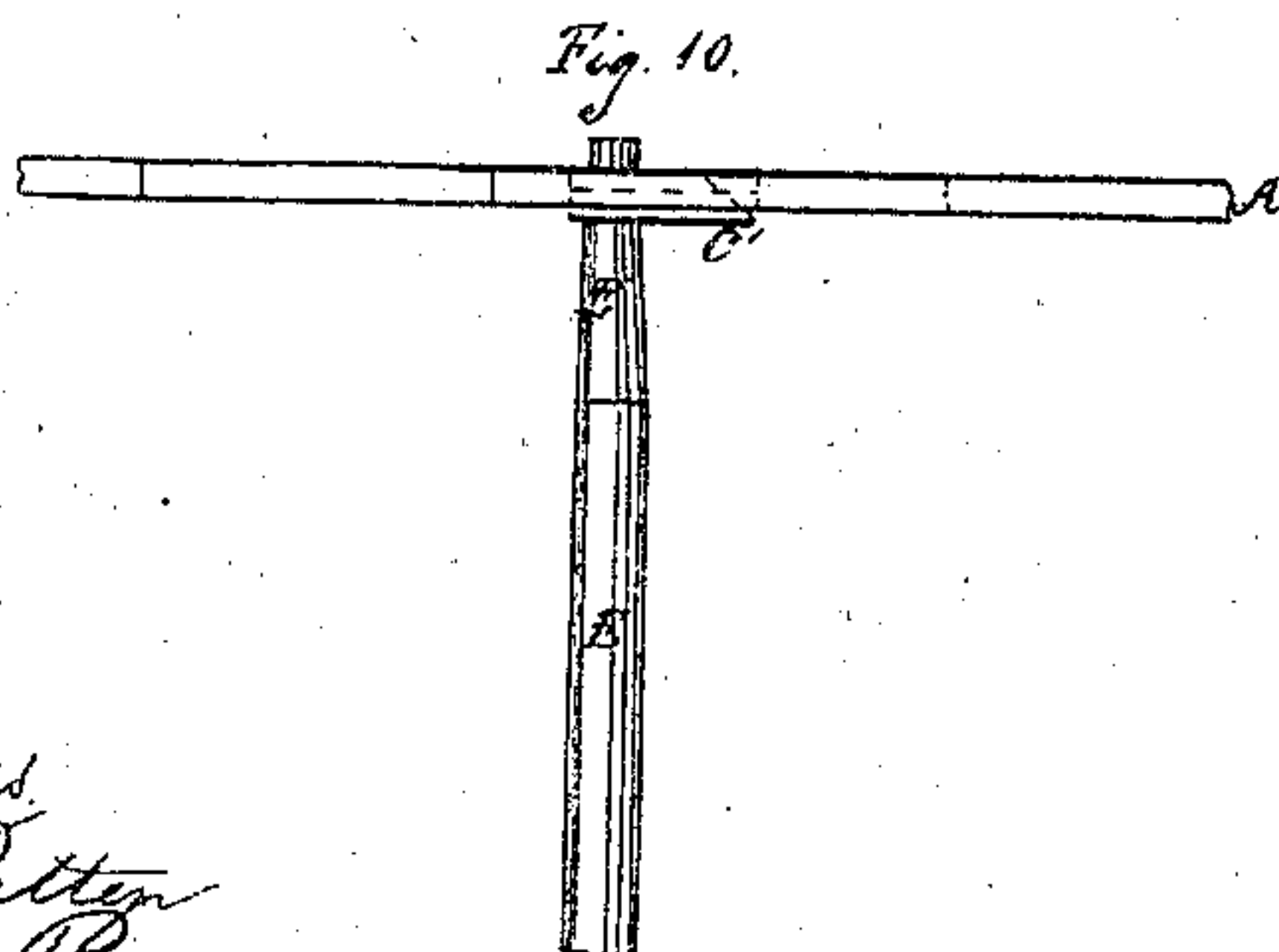
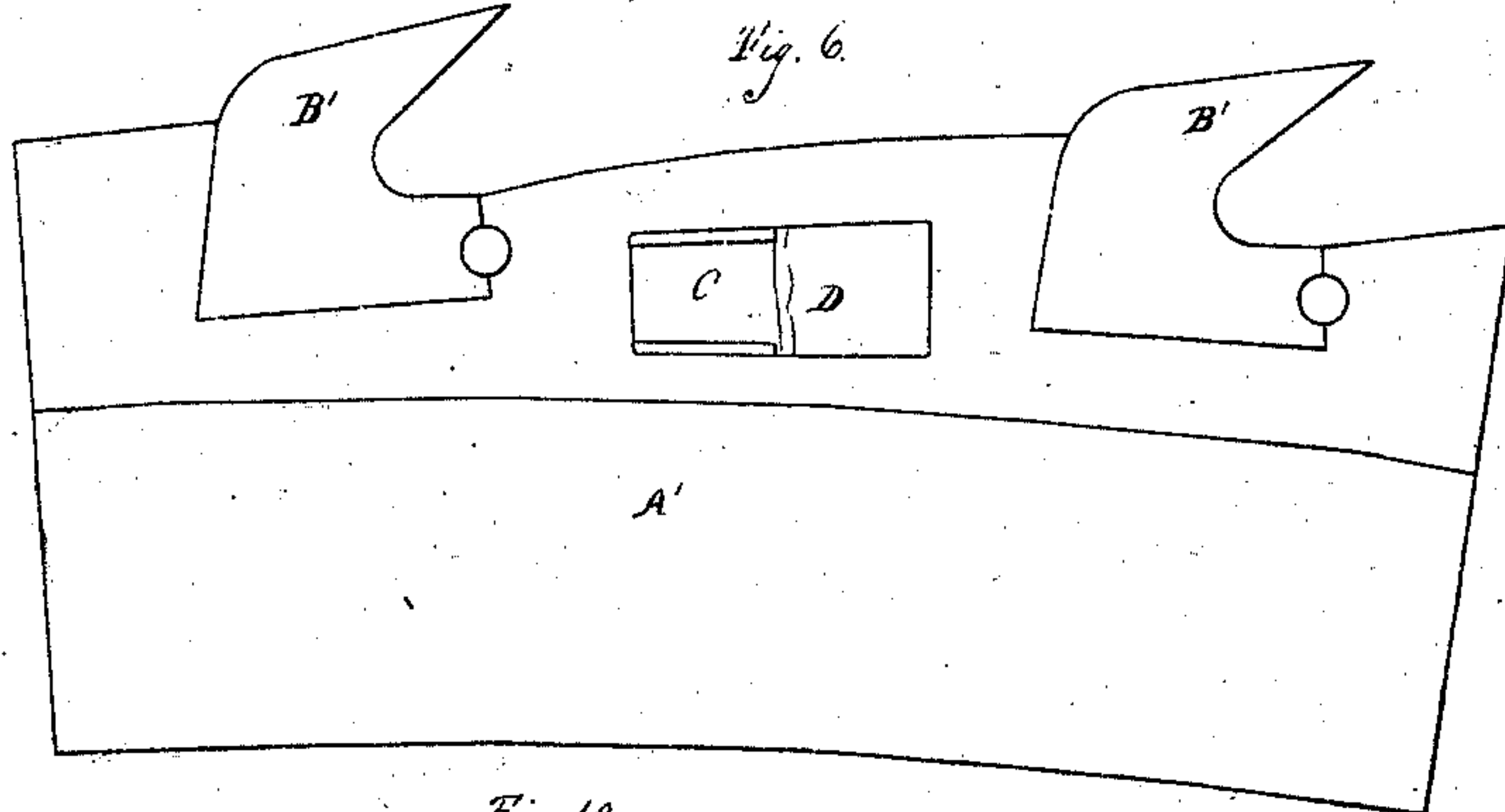
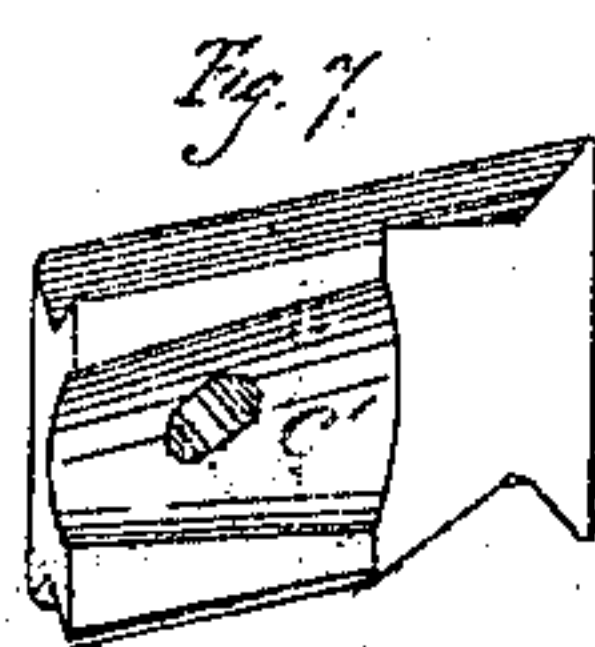
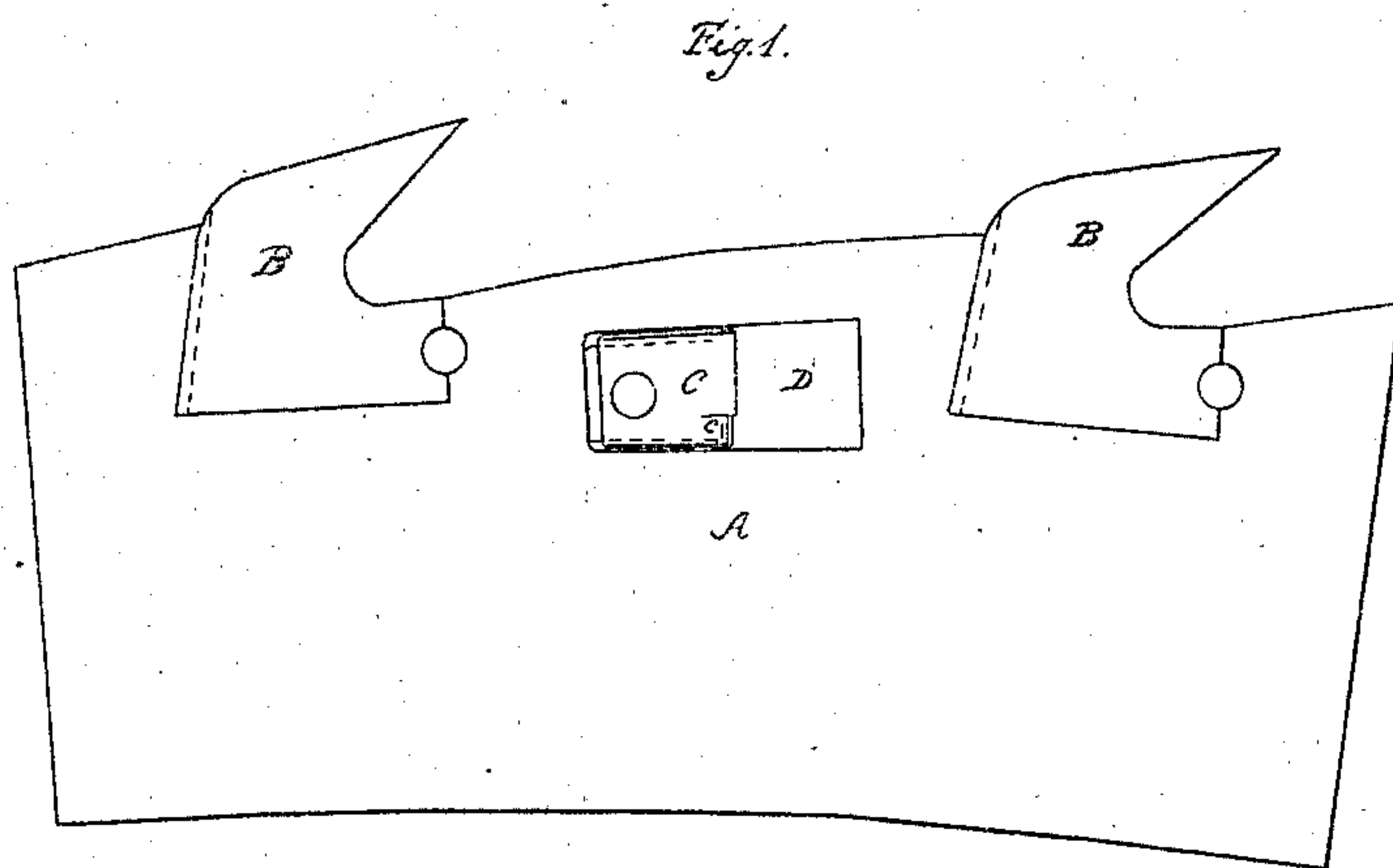
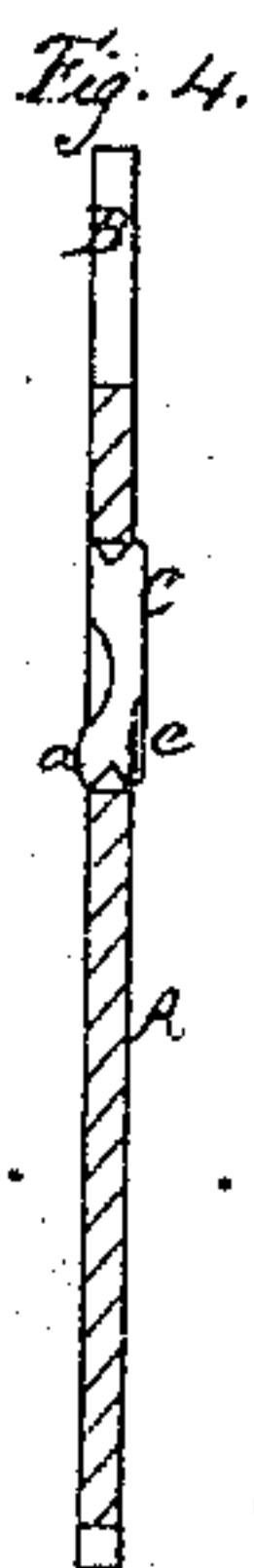
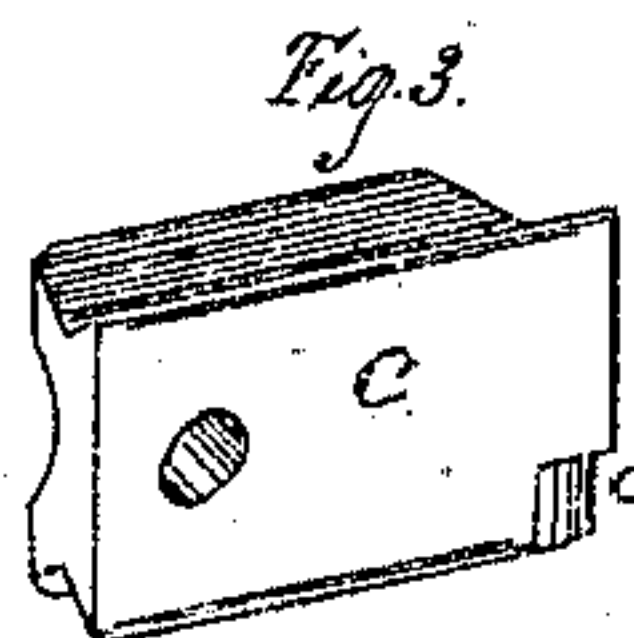
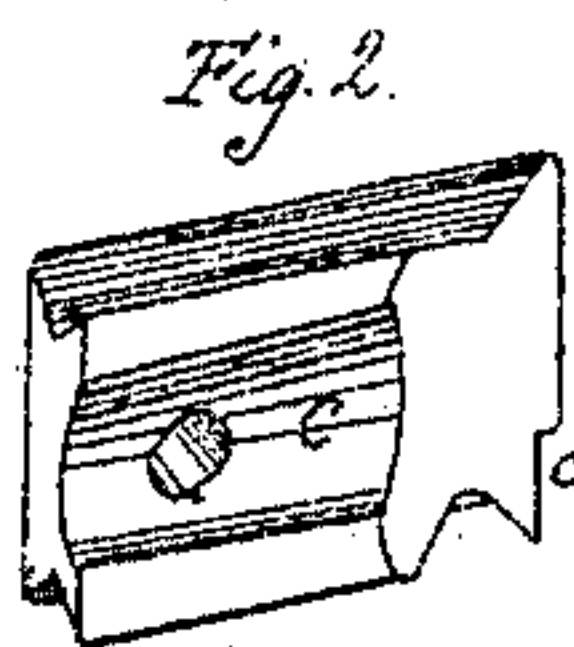


*J. E. Emerson & W. S. Winsor,*  
*Sav.*

*Nº 74.523.*

*Patented Feb. 18. 1868.*



*Witnessed*  
*Jno. D. Patten*  
*Morris Pool*

*J. E. Emerson & W. S. Winsor.*  
*By attorney A. B. Boughton.*

# United States Patent Office.

JAMES E. EMERSON, OF TRENTON, NEW JERSEY, AND WILLIAM S. WINSOR,  
OF TITUSVILLE, PENNSYLVANIA.

*Letters Patent No. 74,523, 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, JAMES E. EMERSON, of Trenton, in the county of Mercer, and State of New Jersey, and WILLIAM S. WINSOR, of Titusville, in the county of Crawford, and State of Pennsylvania, have invented a new and useful Improvement in Planing-Saws; and that the following is 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 views from opposite sides of the planing-tool, and on an enlarged scale from the same, as shown in place in the saw in fig. 1.

Figures 4 and 5 represent cross-sections through the saw-plate, and show more particularly the projection of the planing-tool or instrument from the face of the plate.

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

Our invention consists in combining with a saw and planer on one plate, a support, guide, or gauge, at or near the planing-cutters, to prevent them from running into or taking too rank a hold of the wood; and

Our invention further consists in inserting and holding a planing-cutter in a saw-plate, by means of a tapered opening in the plate, and a tongue or tongues on one, and a groove or grooves in the other.

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.

A represents a saw-plate, on which removable and replaceable teeth B are arranged. This saw-plate is of nearly uniform thickness throughout, and has planing-cutters C connected with it, near its sawing-edge. The planing-cutters C, as shown in figs. 2 and 3, are "rights and lefts," that is, their cutting-edges are alternately on one side and then on the other side of the saw; or, if not alternately so, then the sets are so arranged. We prefer to make these planing-cutters C removable, and to secure them to the plate by an opening D, having a tapering form and bevelled edges, which latter take into grooves formed in the edges of the planing-cutters. The cutters may have a hole through them, into which a steel pin is inserted, and by tapping upon the pin with a hammer or otherwise, the cutter may be set back and tightened in its seat, or started forward to loosen it, as may be desired. To prevent the cutters from taking too rank a hold of the timber, or from "biting into the wood," a projection, *a*, is formed on each cutter, which serves as a gauge or guide to prevent the cutting-edge from taking into the timber. The rear portion of the cutter, behind its cutting-edge, and on that side of it, serves as a guide or gauge on that side, so that whilst the saw-teeth are cutting the kerf, the cutters C are planing the timber on both sides of the kerf. That part of the cutting-edge of the planing-knives most remote from the perimeter, as seen at *c*, is bevelled off so as not to cut at that corner, the doing of which would clog the cutter.

These planing-cutters are equally applicable to reciprocating as to circular saws, and form their own support against biting into or taking too rank a hold of the wood.

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

In combination with sawing-teeth and planing-cutters separately attached to and removable on the same saw-plate, the support, guide, or gauge on the planing-cutters, to prevent them from running into or taking too rank a hold of the wood, substantially as described.

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

Witnesses:

JAMES ROGERS,  
J. VANCE POWERS.