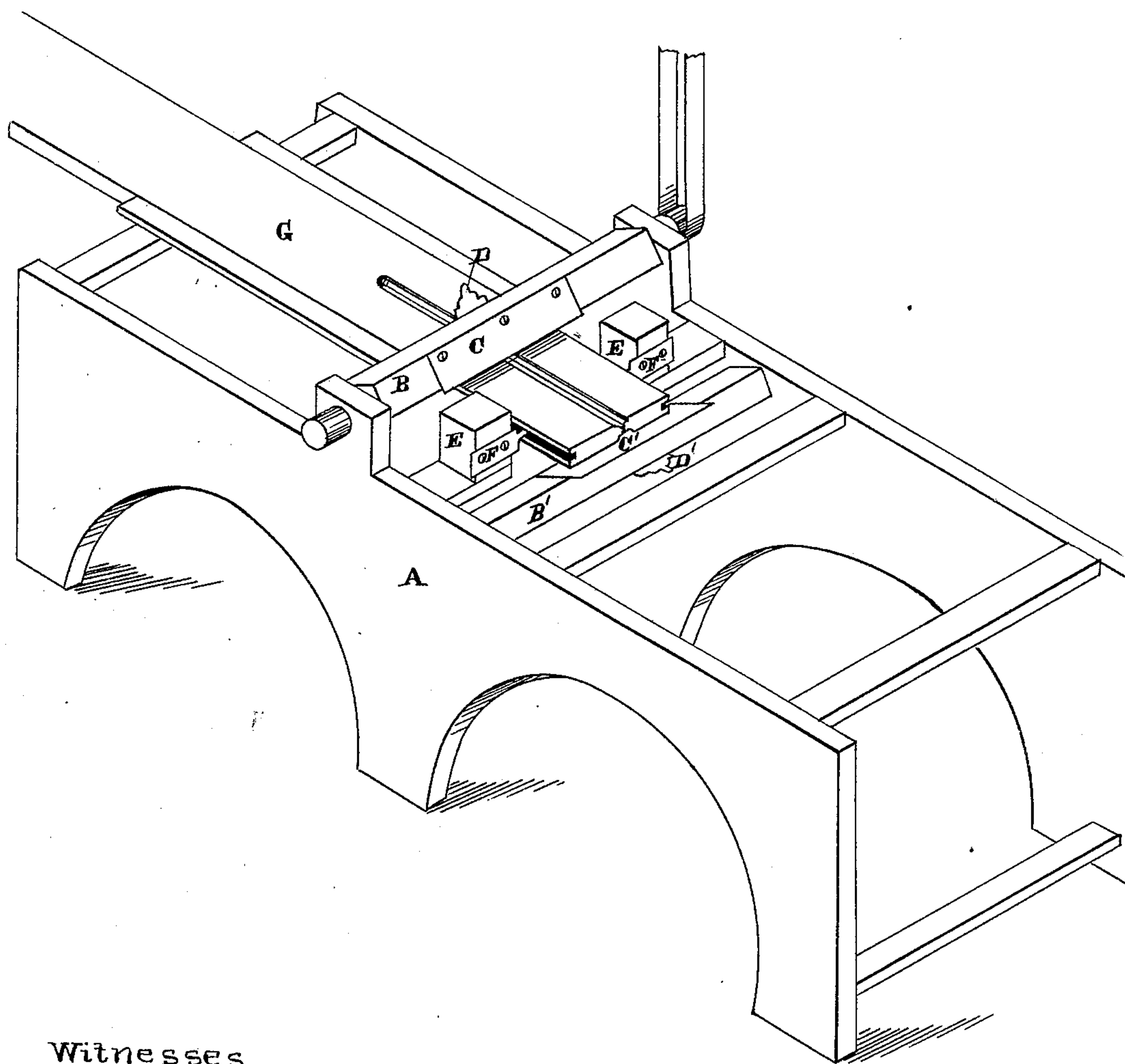


J. W. METCALF.  
Planing and Matching Machine.  
No. 220,299. Patented Oct. 7, 1879.



Witnesses

*Geo. H. Strong.*  
*Frank A. Brooks*

Inventor

*John W. Metcalf*  
*By Dewey & Co.*

# UNITED STATES PATENT OFFICE.

JOHN W. METCALF, OF SAN JOSÉ, CALIFORNIA, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO E. McLAUGHLIN, OF SAME PLACE.

## IMPROVEMENT IN PLANING AND MATCHING MACHINES.

Specification forming part of Letters Patent No. **220,299**, dated October 7, 1879; application filed May 3, 1879.

*To all whom it may concern:*

Be it known that I, JOHN W. METCALF, of San José, county of Santa Clara, and State of California, have invented an Improved Wood Planing and Matching Machine; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to an improvement in wood-working machinery; and it appertains particularly to that class of machines wherein by the passing of a board through a planing-machine to divide it longitudinally into two boards each of the two are planed on both sides and each tongued on one edge and grooved on the other, so as to form matched stuff, which may be beaded at the same time, all at one operation; and my invention consists in alternating the planing and the grooving knives on the same shaft, as is more fully described in the accompanying drawing, in which the figure is a view of my apparatus.

Let A represent an ordinary planing-machine. The revolving cylinder or bar B, supported on the usual journals, is provided with the plane-iron C, and also with the cutter D, on opposite sides of the cylinder or bar.

On the under side of the lathe is a similar cylinder, B', also provided with plane-iron C' and cutter D'.

On each side of the bed are the cutter-heads E, having slotting-cutters F, as shown, these cutters revolving in a horizontal plane.

The usual devices for feeding the plank, &c., are provided, as in an ordinary planing-machine.

The operation of my device is as follows: A board, G, of suitable width, is fed into the machine, and as it passes under the cylinder B its upper side is planed smooth by the iron C.

At the same time the cutter D forms a tongue on both sides of the center of the plank while it is cutting half-way through the plank. This cutter D is made of suitable shape, so as to cut down the center to half the thickness of plank, and at the same time form half the tongue on each edge of the semi-divided plank.

A precisely similar operation is performed by the under bar or cylinder, B', plane-iron C', and cutter D', the latter finishing the longitudinal division of the board, as well as tonguing it.

The cutter-heads on each side of the board revolve rapidly, and their cutters or irons form grooves in the edges of the boards, of suitable shape and size for the tongues formed on the opposite edges to fit into.

I am aware of the Patent No. 197,475, dated November 27, 1877, in which the planing and dividing bits are on different shafts, and hence I do not broadly claim the combination of the planing devices, dividing and beading devices, and grooving devices in one machine; but,

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

In a machine for making flooring-boards, the combination and arrangement of the grooving-cutters E E, the planing-bits C C', and cutter-heads D D', one of each arranged on opposite sides of each of the shafts B B', all constructed and operated as set forth.

In witness whereof I have hereunto set my hand and seal.

JOHN W. METCALF. [L. S.]

Witnesses:

F. M. PFISTER,  
H. L. WILLEY.