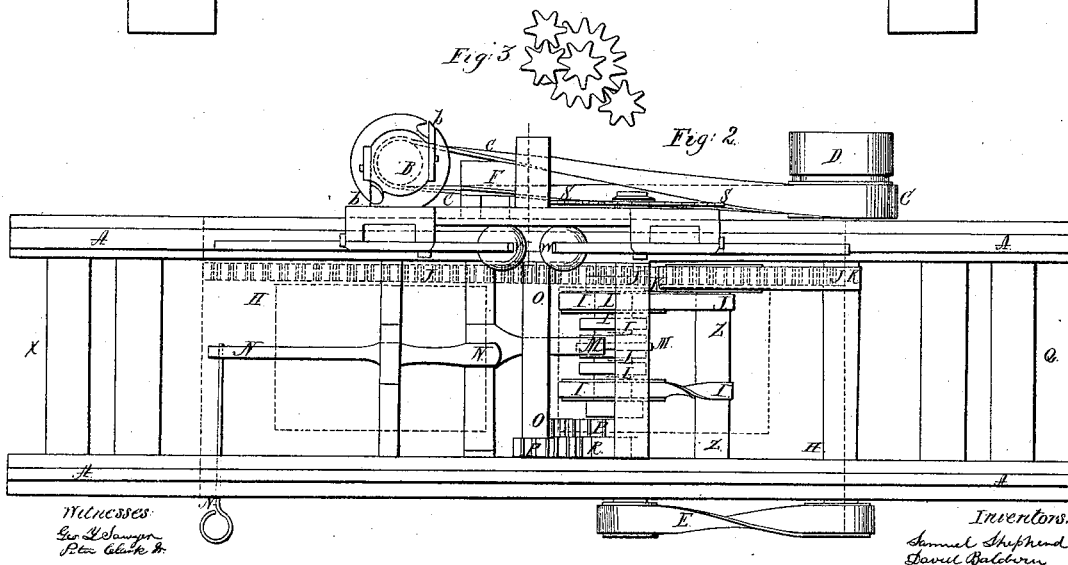
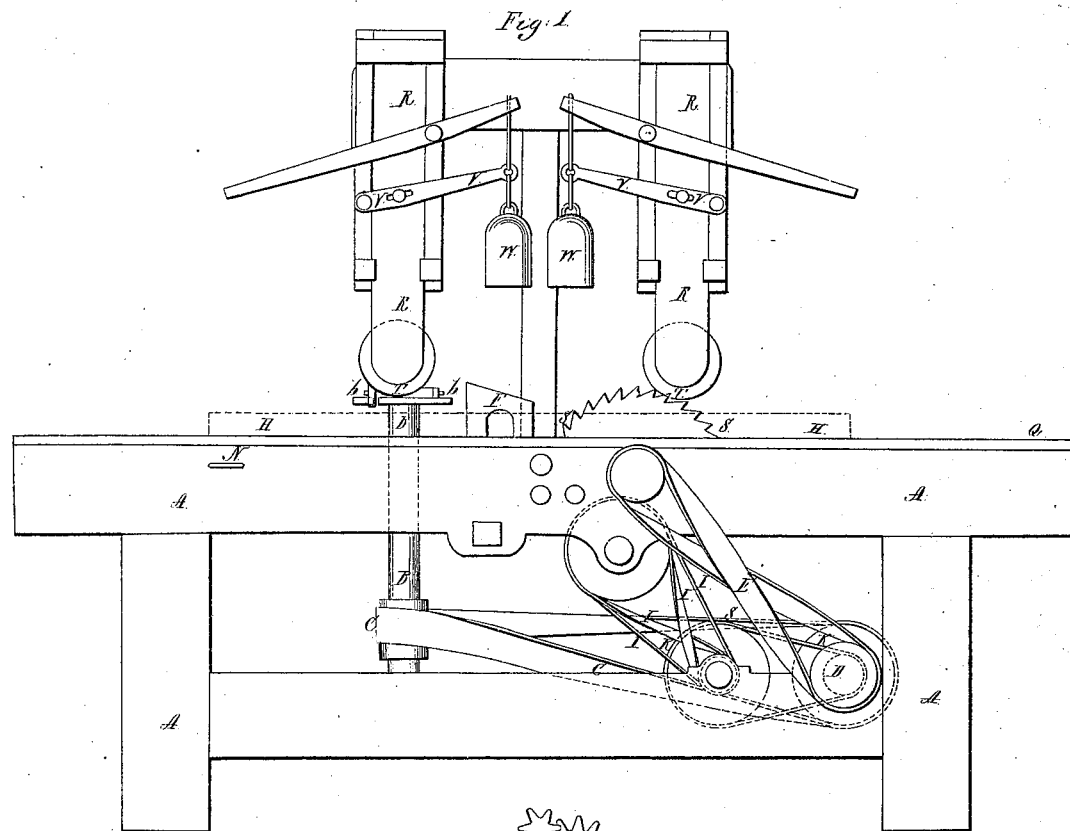


2 Sheets-Sheet 1.
Shepherd & Baldwin,

Wood Molding Machine.

No 612.

Patented Feb. 21, 1838.

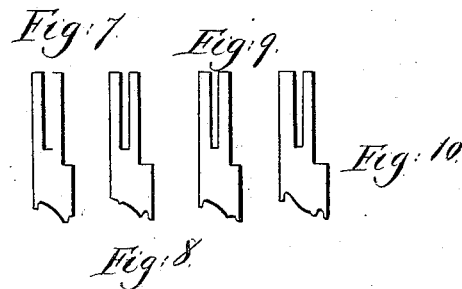
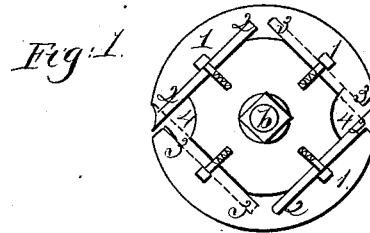
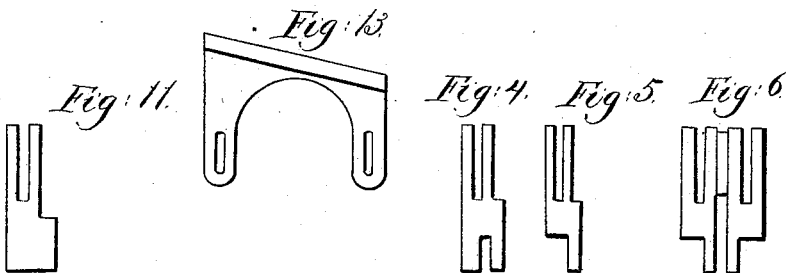
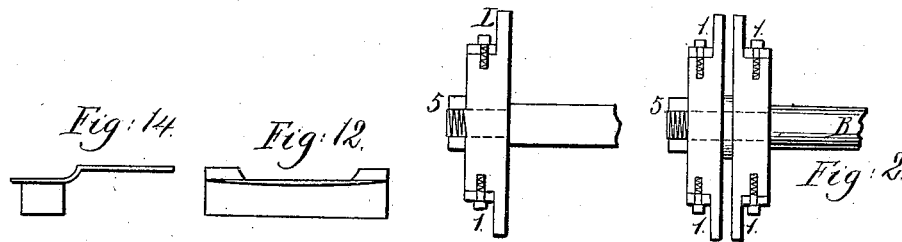


2 Sheets-Sheet 2.
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No 612.

Patented Feb. 21, 1838.



Witnesses:
Geo. L. Sawyer
John Clark Jr.

Inventors:
Samuel Shepherd
David Baldwin

UNITED STATES PATENT OFFICE.

SAMUEL SHEPHERD AND DAVID BALDWIN, OF NASHUA, NEW HAMPSHIRE.

MACHINE FOR TONGUING AND GROOVING BOARDS AND FOR WORKING MOLDINGS, &c.

Specification of Letters Patent No. 612, dated February 21, 1838; Antedated August 21, 1837.

To all whom it may concern:

Be it known that we, SAMUEL SHEPHERD and DAVID BALDWIN, both of Nashua, in the county of Hillsboro and State of New Hampshire, have invented a new and useful Machine for Tonguing and Grooving Plank and Boards and for Working Moldings; and we do hereby declare that the following is a clear and full and exact description thereof.

In the description of said invention reference is had to the accompanying drawings, which are made a part of this specification.

In Plate 1, Figure 1, is an elevation and Fig. 2, a plan of the machine. In each of said figures A A A A is the frame of the machine. B B is an upright shaft to which are fastened the cutters b, b, operating horizontally in head or plane stocks.

In Plate 2, Fig. 1, is a plan of the plane head which we denominate a reverse operating revolving plane head, in which are inserted the various kinds of cutters for the various purposes of tonguing and grooving boards and plank, raising panels for doors and working out moldings of all kinds. Said cutters are confined in the plane head by the set screws 1 1 1 1 and slots, Fig. 4, &c. This plane head is constructed with double mouths and is designed to be used for operating either with the grain of the wood, or against the grain. 2, 2, 2, represent the cutters as inserted to operate against the grain of the wood. By taking them out and inserting the reverse cutters as represented by the dotted lines at 3 3 3 3, then reversing the belt by which the plane is driven, the cutters will operate with the grain of the wood. The double mouth of the plane head is represented at 44. Fig. 2, represents the reverse plane heads, in their particular position when attached to the upright shaft B, and operating horizontally for the purpose of raising panels for doors. Fig. 3, is also a representation of the reverse plane head operating horizontally on the upright shaft as above in which are inserted the various cutters for the several purposes of tonguing and grooving boards, plank and other articles, and working various moldings, &c. Figs. 4 and 5, are plans of the cutters used in the reverse operating revolving plane head for the purpose of forming the tongue and groove on the stuff worked. Fig. 6, represents the cutters for raising panels for doors. Figs. 7, 8, 9, and 10, represent four different kinds of cutters from the great

variety of forms which may be used for working out moldings in a shape corresponding to the shape of the cutters. Fig. 11 represents a square edged cutter which may be inserted in the plane head and used for the purpose of slabbing and jointing the edge of the stuff. On Figs. 1, 2, 3 are set screws 1, 1, 1, 1, by which the various cutters when inserted are held fast in their particular respective positions when in operation. 5, 5, 5 in same figures, are nuts on the top of the shaft B, by which the plane heads are fastened and held to the shaft.

The shaft, B B, Plate 1, and cutters are driven by means of the belting c c c from the pulley D, to which the power is applied. The board, plank or other stuff to be worked is placed upon the carriage H H represented by the lines in red ink. This carriage is moved forward and backward running on ways, upon the frame by means of a rack and pinion, driven by the belts II, II, from the shaft Z Z, to which motion is communicated by the belting K K from the main shaft. The rack is attached to the under side of the carriage as represented in Fig. 2, same plate, by the lines in red ink at J J J J. L L L L in the same figure is a clutch-shaft on which plays the clutch M M moved by the shipper N N N. O O in the same figure is the pinion shaft and P P P is the gearing by which the motion is reduced from the clutch shaft to the pinion shaft. The gearing is shown in Fig. 3, same plate. One of the belts II is an open belt—the other a reversed or cross belt. The clutch being moved by means of the shipper up to the pulley driven by the open belt, the clutch pin strikes against the dog in that pulley and the shaft is carried around and the carriage moved in one direction and the clutch being moved down against the dog in the other pulley driven by the reversed or cross belt, the clutch pin strikes against the dog in that pulley and the shaft is turned and the carriage moved in the opposite direction. The stuff to be worked is placed upon the carriage—the edge or part to be worked being so adjusted as that the circular saw S S, operated by the belt E, upon the carriage's passing along the frame will cut a slab from that edge or part, if necessary to straighten it, and this slab is carried away from the machine by passing over the guide F. The stuff as it is moved along the carriage passes under the trucks T T, Fig. 1, the slides R R

R R being forced down by the weights W, W, acting on the levers V V V V and the stuff is thus held firmly in its place on the carriage. To diminish the friction, trucks
5 or rollers are let into the frame immediately under the trucks T, T, on which the carriage moves. As the carriage passes along in the direction from Q to X, the edge or part of the stuff to be worked is brought in contact
10 with the cutters, and each cutter taking out a chip or shaving at every revolution of the shaft B B a tongue a groove or a molding is cut on that edge or part corresponding to the form of the cutter. When the carriage has
15 passed the cutters, and the whole length of the stuff has ben worked, the shipper N N is moved and the clutch is carried against the other pulley. The other belt then drives the clutch shaft and the carriage is moved in the
20 opposite direction. The frame being furnished with a shaft similar to B B and cutters upon the other side, the other side of the stuff can be worked in a similar manner as the carriage passes back. In operating
25 this reverse operating plane and cutters for raising panels and working out moldings, the piece of stuff to be worked is first straightened on the edge and then confined upon the carriage.
30 On Plate 2, Fig. 12, is a plan; Fig. 13, an elevation, and Fig. 14 an end view of the guide which is used in tonguing and grooving boards for the purpose of raising the slab as it is separated from the board or

plank in straightening it and so passing it
35 off by a gradual perpendicular rise above the reverse operating plane and the board or plank from which the edge or slab is separated; which board or plank continues
40 passing upon the carriage H H with its straightened edge next to and passing the revolving cutters and thus forming the tongue or groove, according to the shape of the cutters.

Now what we claim as our invention and
45 desire to secure by Letters Patent is—

The peculiar construction of the reverse operating revolving planing wheel; *i. e.* the
50 double mouth so as to insert reverse cutters, for the specific purpose of operating with and against the grain of the wood, believing this to be the most perfect and best adapted
55 mode in use for the purposes of working the various kinds of wood; also, the particular inclining form of the guide and lip by which the slab is raised perpendicularly
60 above the revolving planing wheel, and kept by the lip from coming in contact with the movements of the machine; also, the particular mode of weighting down the board or plank on the carriage as it passes, as is specified above.

SAMUEL SHEPHERD.
DAVID BALDWIN.

Witnesses:

Z. A. BALDWIN,
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