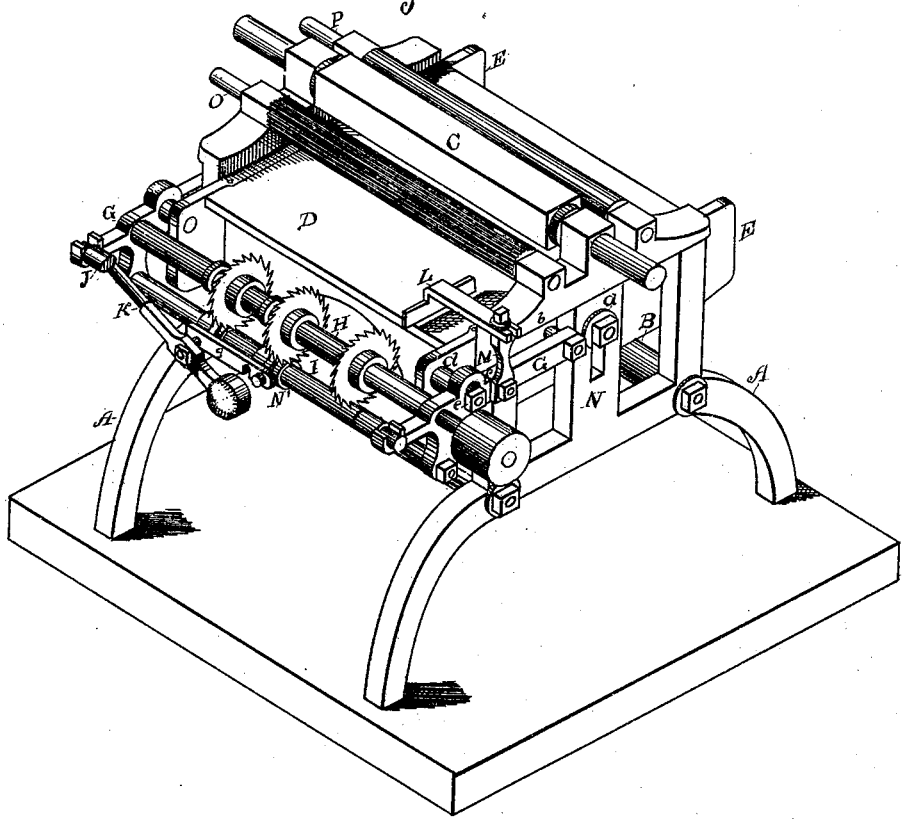
3 Sheets—Sheet 1.

W. H. PARCHER.

MACHINES FOR PLANING AND SAWING LUMBER.

No. 180,367. Patented July 25, 1876.

Fig. 1.



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K. G. Streeter

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Fig 2.

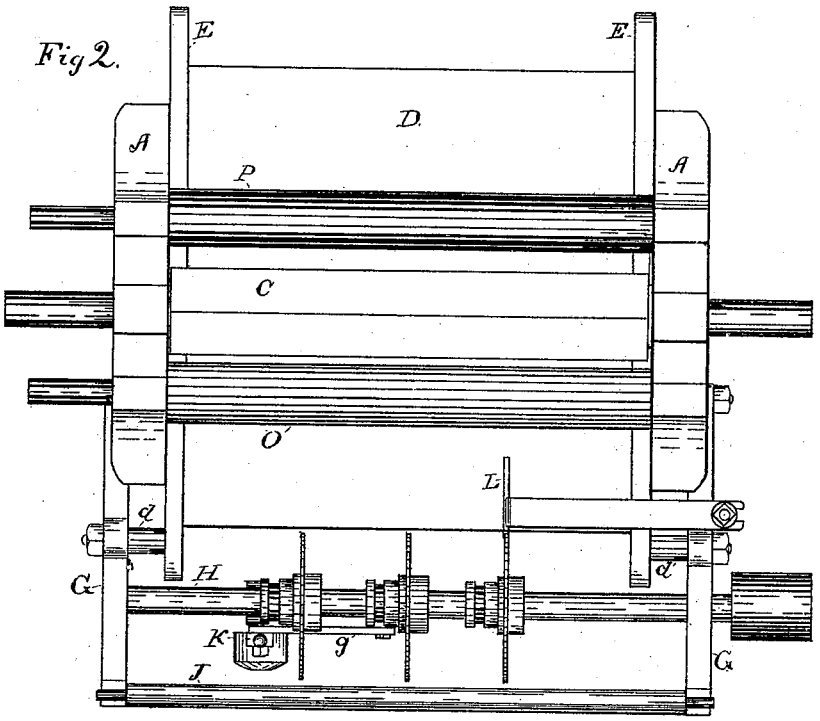

Fig 3.

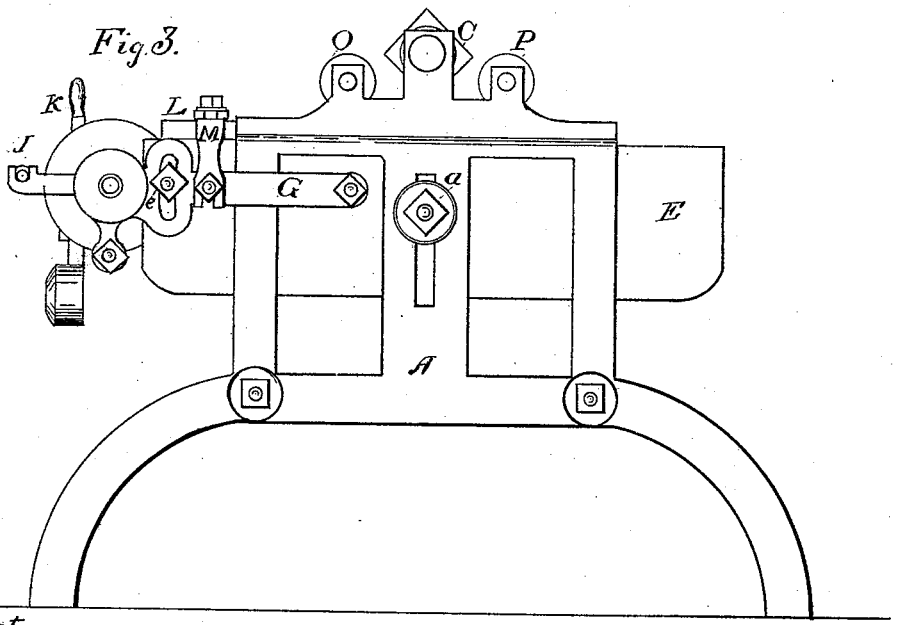

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Fig. 4.

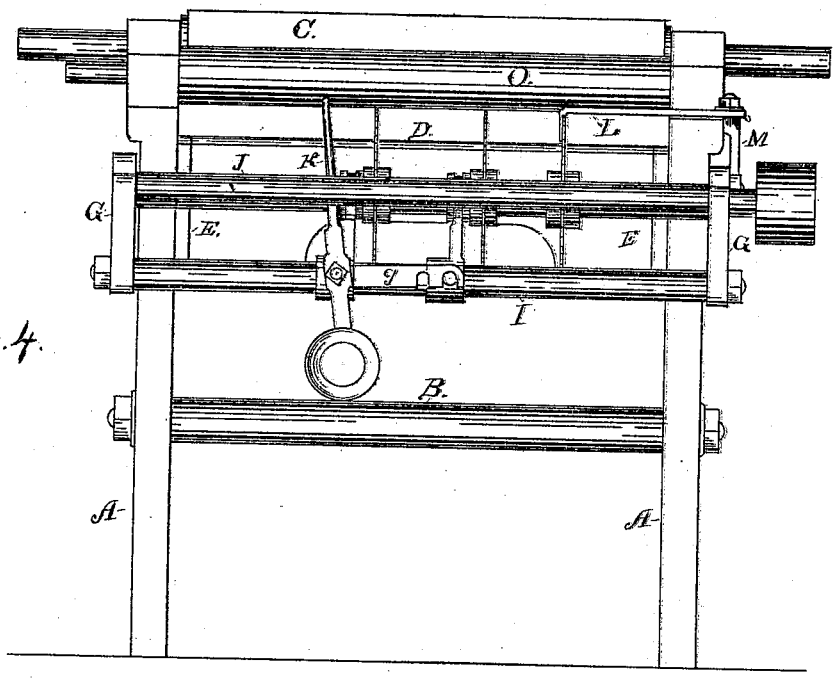
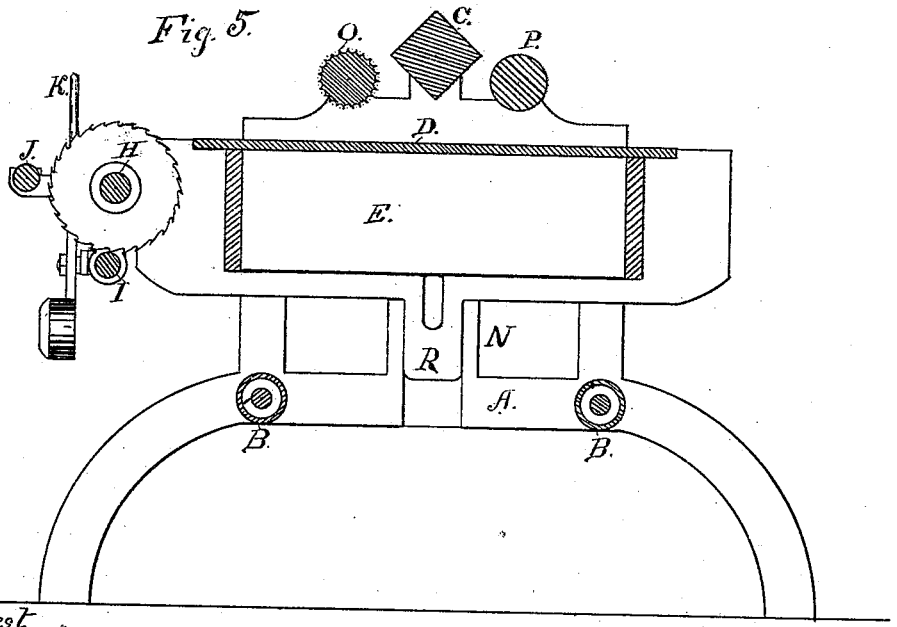


Fig. 5.



Attest.
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Fred'k H. Collins

Inventor.
Willis H. Parcher.

UNITED STATES PATENT OFFICE.

WILLIS H. PARCHER, OF WHITEFIELD, NEW HAMPSHIRE.

IMPROVEMENT IN MACHINES FOR PLANING AND SAWING LUMBER.

Specification forming part of Letters Patent No. **180,367**, dated July 25, 1876; application filed March 27, 1876.

To all whom it may concern:

Be it known that I, WILLIS H. PARCHER, of the town of Whitefield, county of Coos, and State of New Hampshire, have invented certain new and useful Improvements in Machines for Planing and Sawing Lumber, of which the following is such a clear and exact description as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 presents a perspective view of the machine complete. Fig. 2 is a plan, showing the relative position of the planing-cylinder, feed and pressure-rolls, saws, and devices for supporting and guiding the lumber. Fig. 3 is a side view, and illustrates the manner of supporting the vertically-adjustable planer-bed, saws, and carrying-roll. Fig. 4 represents an end or front view of the machine, showing the devices used for adjusting the saws relatively to each other. Fig. 5 is a vertical longitudinal section.

Similar letters of reference indicate corresponding parts in the different figures.

The object of this invention is to improve the arrangement of the operating devices in machines used for planing and sawing lumber for fences, flooring, and other purposes where narrow pieces are required, by making the planer-bed vertically adjustable, as well as rendering the saws, with their arbor, independently adjustable with relation to the planer-bed, so that they may be dropped below the level of the table when it is desired to use the machine for surfacing only; and the invention consists in the construction and arrangement of the different parts of the machine for accomplishing these objects, as will be hereinafter fully described, and then specifically pointed out in the claims.

Machines of this class have been heretofore constructed in such a manner as to allow no vertical movement to the planing-bed and saws, the adjustment for dressing lumber of different thicknesses being made by raising and lowering the planing-cylinder, the slitting-saws remaining always in the proper position for action upon the lumber, unless they, with the arbor upon which they were secured, were removed bodily from the machine. This was objectionable in many respects, experience teaching that the journal-boxes of the planing-cylinder should be immovable, so as to avoid the shake or tremor which always accompanies, to a greater or less extent, the use of sliding journal-boxes upon planing-machines.

This difficulty is avoided, in my machine, by securing the journal-boxes rigidly to the frame, and rendering the bed, beneath the planing-cylinder, easily adjusted to any desired distance from it; and as the feed and pressure rolls are also secured to the frame, the raising or lowering of the bed causes no increase of strain upon them, but allows them to act with the same effect upon all lumber, no matter what its thickness may be.

A in the drawings represents the side pieces of the machine-frame, connected and retained in their proper relation to each other by the tubular girts B, through each of which passes a bolt, provided with screw-nuts upon one or both of its ends. These side pieces carry the journal-boxes in which the planing-cylinder C rotates. These journal-boxes are firmly secured to the side pieces of the frame, so as to allow the least possible movement of the journals of the cylinder compatible with its successful working.

The fluted feed-roll O and pressure-roll P are driven by suitable gearing, and revolve in journal-boxes, secured to the same side pieces of the frame as carry the planing-cylinder; but these boxes, especially those in which the fluted feed-roll rotates, may have a slight vertical movement, controlled by suitable springs or weights.

Between the side pieces of the frame, and carrying the bed D, is placed a rectangular frame, E, the side pieces of which are connected by suitable cross-pieces, so as to give rigidity to the bed, and are provided with downwardly-projecting tongues or guides R, which move in corresponding grooves formed in the central vertical bars N of the frame. These bars are also perforated by a vertical slot, through which pass the screw-bolts *a*, by means of which the bed may be adjusted at any desired elevation relatively to the planing-cylinder, so as to plane lumber of various thicknesses.

Projecting from the side pieces of the bed-frame are the studs *b*, which form the pivots upon which the side bars G oscillate. These bars carry that portion of the mechanism used for edging and sawing the lumber into strips, when such an operation is desired, and are united to each other by the rod I, which passes through downwardly-projecting lugs near their outer ends, and are then secured by a suitable nut upon each end of the rod. Slots *c* are formed in the bars, through which pass the studs *d*, upon the ends of which are nuts *e*.

It will be apparent that by loosening these nuts the outer ends of the side bars may be raised or lowered, and that by screwing up these nuts they may be secured in any desired position.

A saw-arbor, H, revolves in journal-boxes secured to the side bars in such a position as to bring the periphery of the saws in close proximity to the end of the bed. The saws may be in number as shown, or the number may be increased or diminished to suit different classes of work. They are secured to sleeves, which are provided with a feather-key fitting into a longitudinal groove in the arbor, and may be moved to any desired position thereon, one of them being generally secured in line with the side guide L, and the others adjusted and held in place by means of the lever K and latch *g* acting upon the sliding studs N′, the lower ends of which are provided with a sleeve, which encircles the rod I, and their upper ends forming a fork, which enters a groove formed in the saw-collar. The latch being provided with graduated notches, which catch upon a pin, *h*, inserted in the sliding stud N′, enables the position of the saws to be varied at will by the operator.

Other devices may be used for changing the relative position of the saws upon the arbor, many such being in use for a similar purpose in machines for edging boards, without departing from the spirit of my invention.

A bearing-roll, J, is journaled in the outer ends of the side bars G, and serves to support the lumber in advance of the saws. The side guide L is designed to enter the kerf formed by the stationary saw, and is adjustably connected to the standard M by a screw-bolt passing through a slot in the end of the horizontal arm of the guide into the upper end of the standard, thus rendering the guide easily adjusted, or it may be removed entirely when the machine is to be used for surfacing only.

The operation of the machine is as follows: The saws having been adjusted upon the arbor to the width of the lumber to be cut, the side bars so placed as to bring the periphery of the saw-collars a little below the surface of the bed D, which is itself adjusted vertically, so as to give the desired thickness to the stuff after it is planed, the lumber may then be fed into the machine over the bearing-roll J, which supports it in front of the saws and the bed D in their rear. As soon as it has advanced sufficiently to be caught by the feeding-roll O, the operation becomes automatic, leaving the attendant at liberty to take up and present another board to the machine immediately following the one which precedes it, thus causing its operation to be continuous.

When the machine is to be used only for surfacing lumber, the nuts *e* upon the studs *d* are loosened, and the side bars with the saws allowed to drop until the periphery of the latter is beneath the surface of the bed.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent, the following:

1. The planing-cylinder C, in combination with the vertically-adjustable bed and independently-adjustable saws, as and for the purpose set forth.

2. The vertically-adjustable frame E, in combination with the side bars G, connecting-rod I, bearing-roll J, and saw-arbor H, as specified.

3. The stationary saw upon the arbor H, in combination with the adjustable guide L, its standard M, and the side bars G, as specified.

4. The combination of the adjustable saws upon the arbor H, sliding studs N′, latch *g*, and weighted lever K, as and for the purpose set forth.

In testimony that I claim the foregoing as my own I hereunto affix my signature in presence of two witnesses.

WILLIS H. PARCHER.

Witnesses:

K. G. STREETER,

FRED. H. COLLINS.