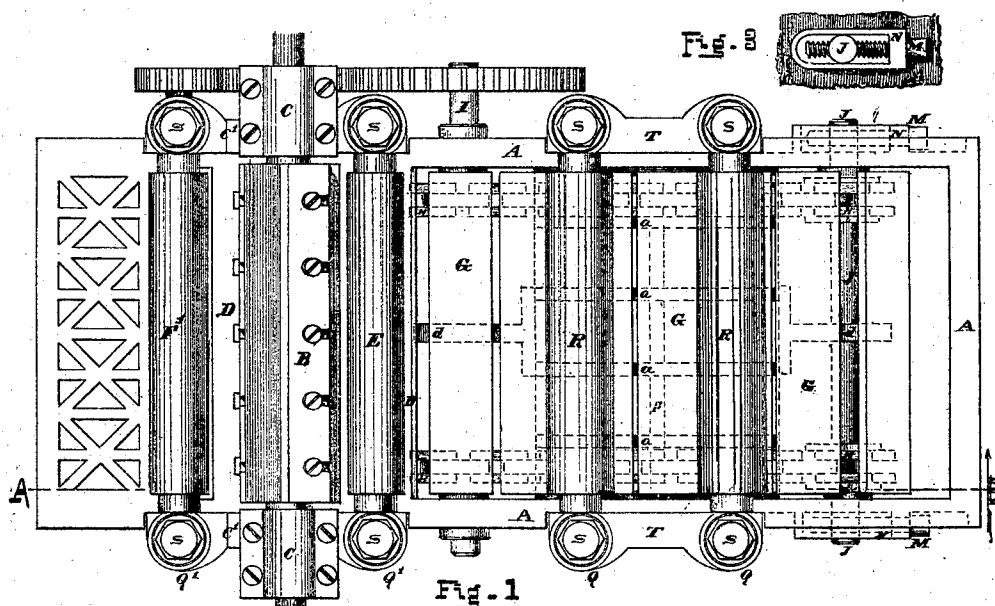
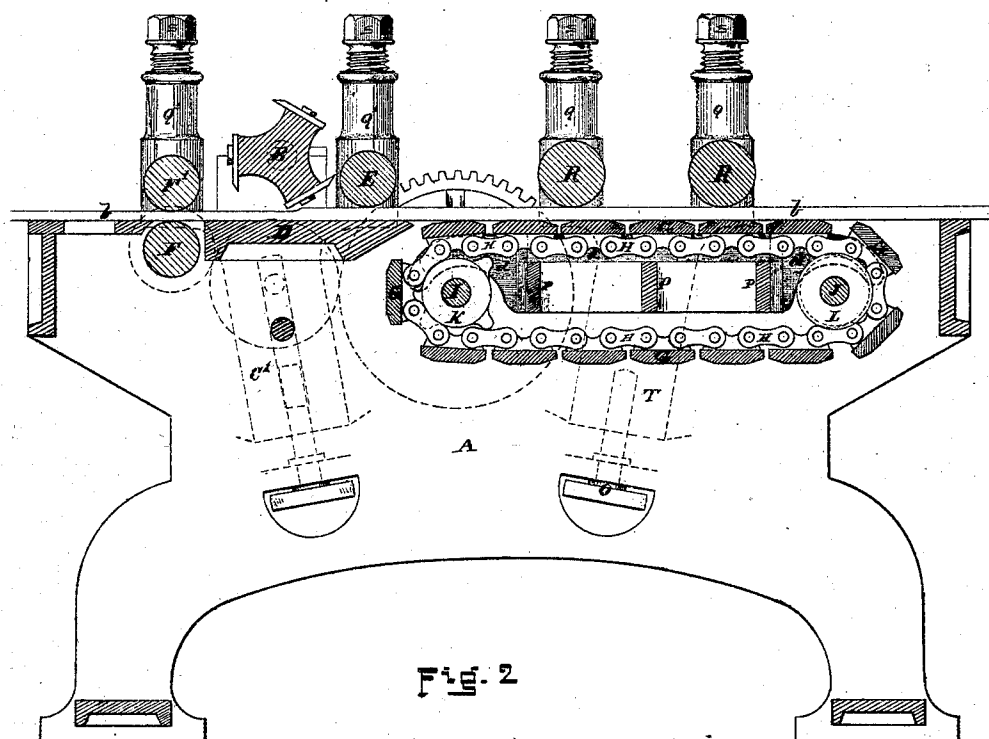


James J. Russ'
116496 Imp^t in Planing Machines

PATENTED JUN 27 1871



Witnesses

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IMPROVEMENT IN PLANING-MACHINES.

Specification forming part of Letters Patent No. 116,496, dated June 27, 1871.

To all whom it may concern:

Be it known that I, JAMES J. RUSS, of the city and county of Worcester and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Planing-Machines for working wood; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing which forms a part of this specification, in which—

Figure 1 represents a plan view of my improved planing-machine. Fig. 2 represents a longitudinal section at line A B, Fig. 1; and Fig. 3 represents a side view of one of the draw-screws for straining the lag-chains.

To enable those skilled in the art to which my invention belongs to make and use the same, I will proceed to describe it more in detail.

The nature of my invention consists: First, in the combination, in a planing-machine, of an endless traveling feed-bed and pressure-rolls, as hereinafter described. Second, in the combination, in a planing-machine, of an endless traveling feed-bed, and one or more pressure-rolls, with a cutter-head and a solid planing-bed, as hereinafter described. Third, in the combination, with one of the bed-supporting shafts and frame, of draw-screws and holding-bosses, as hereinafter described. Fourth, in certain peculiarly-constructed devices for supporting and adjusting the pressure-rolls, as hereinafter described. Fifth, in a wood-planing machine, the parts of which are constructed and combined together, substantially as hereinafter described.

In the drawing, the parts marked A represent the frame, which may be made in any suitable form. B indicates the cylinder or cutter-head, which is arranged, in the usual manner, to run in bearings C, that can be raised or lowered by means of screws and hand-wheels at the lower part of the bearing-slide C'. (See dotted lines, Fig. 2.) D indicates a solid bed piece arranged across the machine, directly beneath the cylinder B, for supporting the board *b* or other work against the shock of the revolving cutters. E indicates a pressure-roll for holding the board *b* firmly down to the bed D at the front of the cylinder B; and F F' indicate a pair of discharging or rear feed-rolls for carrying the boards out of the machine after they have been acted upon by the cutters. In the forward part of the machine is arranged

an endless traveling feed-bed, G, consisting of a series of transverse metal lags or bars, joined to each other near their ends by chain-links H, as indicated in the drawing. The traveling bed G is supported upon two transverse shafts, I and J, around which it is arranged to revolve, one of the shafts, I, being provided with toothed wheels K, which engage with the links H, and, as the shaft I is turned, moves forward the upper part of the bed G. The power may be applied to the shaft I by any suitable arrangement of gearing. The shaft J does not revolve, but is furnished with loose wheels or rolls L, over which the traveling bed runs. The ends of the shaft J project through openings formed in the frame A at the sides of the machine, and are held by draw-screws M arranged in bosses N formed on the frame A, as shown in Figs. 1 and 3. The screws M pass through the ends of the shaft J, which are tapped for their reception, and, by turning said screws, the traveling bed G can be strained tight to compensate for the wearing of the pivots in the links H, or to adjust it to the proper degree of tension. The upper part of the traveling feed-bed G runs over a series of longitudinal tracks or ways, *a*, which is arranged upon the top of a transverse frame, P, that extends from side to side of the machine at a position centrally between the shafts I and J. The lags of the feed-bed are thus supported at the proper height with their upper surfaces level with the upper surface of the planing-bed D. Horns *d* are arranged at each end of the central ways *a*, which curve over the shafts I and J, as indicated, and serve to guide the lags onto and from the ways with a steady movement. Pressure-rolls R are arranged above the traveling bed G for holding the boards down upon the lags. These rolls R, together with the rolls E and F' at the front and rear of the cutter-head B, are supported in movable bearings within the cylindrical standards Q Q' at the sides of the machine. Springs are placed within the standards Q Q', which rest upon the top of the roll-bearings and tend to press the rolls down upon the board *b*, and also insure the proper degree of elasticity. Screws S are fitted in the top of the standards Q Q'', which can be turned down upon the springs, and the amount of pressure upon the rolls be thereby regulated. The standards Q, which support the bearings of the rolls R, can be raised or depressed by means of adjusting-screws

O at the sides of the frame A, which move the slide pieces T, (see dotted lines, Fig. 2,) upon which the standards are supported. The standards Q are cast in one piece with the slides T, and, by connecting the screws O with a transverse shaft and bevel-gear, the height of the rolls R can readily be adjusted at a single operation. The standards Q' of the rolls E and F' are supported upon the slide C', which also supports the bearings of the cutter-head B, and the three are all adjusted together. In lieu of using rolls R for holding the board *b* down to the traveling bed G, a solid shoe may be used for that purpose; but I prefer the method shown in the drawing. If preferred, weights may be used for holding down the pressure-rolls R, E, and F', instead of springs, as herein illustrated.

It will be observed that, by the use of the traveling bed G, a comparatively long bearing-surface is obtained upon the board, so that boards which are wet, pitchy, or even covered with snow or ice, can be run through the machine without trouble, while the solid bed D beneath the cutter-head B prevents the boards from springing or trembling during the action of the cutter.

It will thus be seen that my improved planing-

machine is of great practical value, inasmuch as the principal objections to ordinary planers are by my invention overcome and obviated, and at the same time I am enabled to obtain the advantages of both the solid bed for planing upon and the traveling bed for feeding in the boards.

Having described my improved planing-machine for working wood, what I claim therein as new and of my invention, and desire to secure by Letters Patent, is—

1. The combination, with the cutter-head B and one or more pressure-rolls, R, of an endless traveling feeding-bed, G, with suitable operating mechanism, and a solid planing-bed, D, substantially as and for the purposes set forth.

2. The combination, with the bed-supporting-shaft J and side frame A, of the draw-screws M and holding-bosses N, substantially as and for the purposes described.

3. A planing-machine for working wood, the parts of which—B, D, E, F, F', G, H, I, J, K, L, and R—are constructed and combined together for operation, substantially as shown and described.

Witnesses:

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