

D. H. RICE.  
PLANING-MACHINES.

No. 184,299.

Patented Nov. 14, 1876.

Fig. 1.

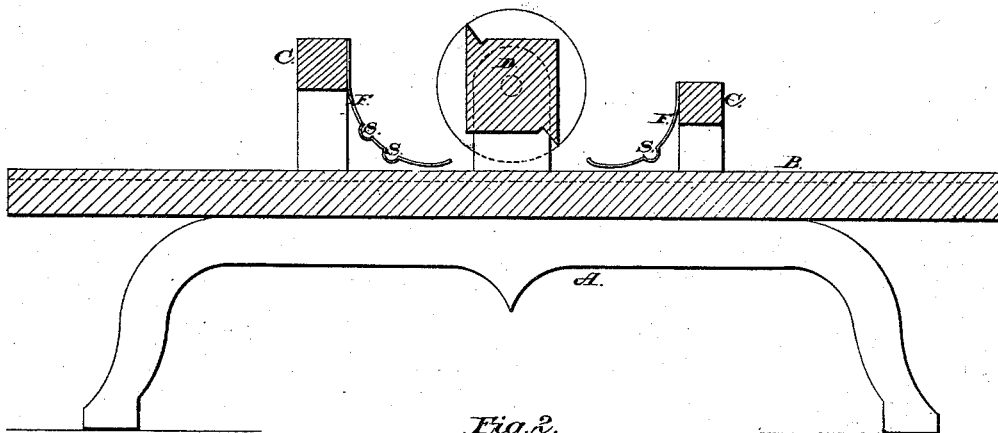
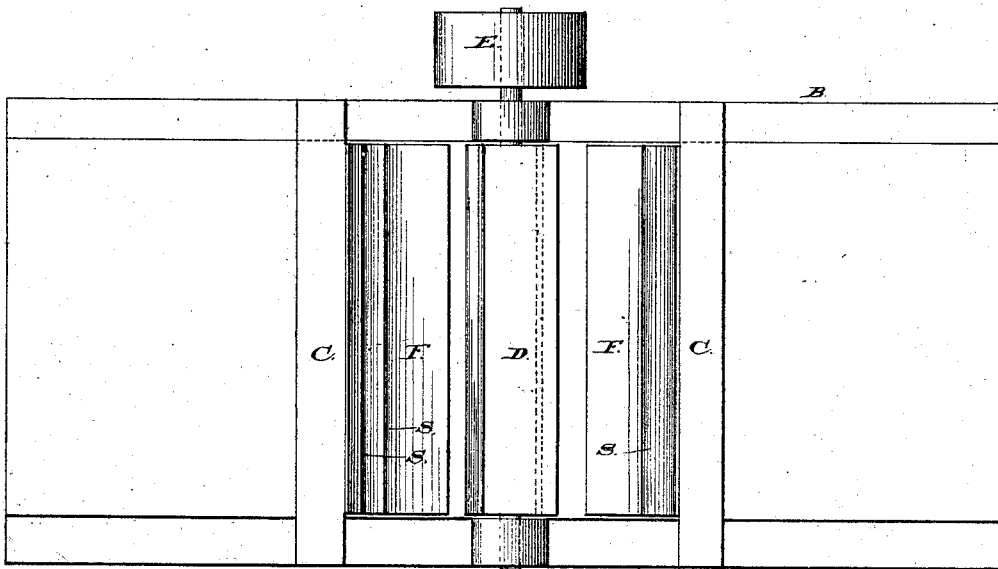


Fig. 2.



Attest:

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# UNITED STATES PATENT OFFICE.

DAVID HALL RICE, OF LOWELL, MASSACHUSETTS.

## IMPROVEMENT IN PLANING-MACHINES.

Specification forming part of Letters Patent No. 184,299, dated November 14, 1876; application filed January 15, 1876.

*To all whom it may concern:*

Be it known that I, DAVID HALL RICE, of the city of Lowell, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Planing-Machines, of which the following is a specification:

My improvement is made in the yielding spring shown in the English patent of Burnett, No. 7,926, dated January 8, 1840, which spring is there shown as extending or projecting under the planing-cylinder, to hold the board being planed down to the bed of the machine against the action of the cutting-cylinder. As heretofore used, this spring has been of great stiffness, because, owing to its tendency to yield longitudinally across the bed of the planer, but a small part of the entire resiliency of the spring bore upon any one point. Hence the entire spring had to be made stiff enough to enable the amount of its resiliency to produce the requisite pressure upon any raised or unequal part of the surface of the board when it yielded longitudinally on its edge. The result was, that when the surface of the board was perfectly level the pressure of the spring, owing to its stiffness, was greater than necessary. This difficulty I have overcome by providing the flat spring with one or more flutings or corrugations, extending across it longitudinally parallel, or nearly so, with the edge of the spring, which bears upon the board being planed.

I thus obviate the tendency of the spring to yield along this edge, while it yields in the other direction, as before, and this brings nearly the entire pressure of the spring upon any inequality or raised part of the board, rendering its pressure upon this point more effective.

I am thus enabled to use a lighter spring to perform the required work, and thus diminish the average pressure upon the level part of the board.

In the drawings, Figure 1 is a longitudinal

vertical section of a planing-machine provided with my improved fluted spring. Fig. 2 is a top plan view of the same.

A is the frame or support of the machine. B is the platen or bed. C C are cross-bars, attached to uprights, which may be made adjustable, if desired. D is the planer-cylinder, attached to the machine by uprights, in the usual way.

Feed-rolls should be attached to the machine in the ordinary way; but I have not thought it necessary to show them, as their mode of attachment and use is so well known. On the cross-bars C C are attached the flat yielding springs F F, to hold the board down upon the platen by the pressure of their lower edges extending across the bed of the planer.

I make these springs with one or more flutings or corrugations, S, extending longitudinally across them, parallel, or nearly so, with their edges, which press upon the board. This renders them stiff in this direction, but allows them to rise or yield to the inequalities of the board, and brings the whole pressure of the spring to bear upon the point where needed. The flutings S may be applied to each spring in such number and size and form, and as near the pressing-edge, as desired.

I have shown the springs at some distance from the line of cut of the knives; but they may be brought nearer to it, if desired. E is the driving-pulley of the cylinder.

What I claim as new and of my invention is—

In combination with the bed and cutters of a planing-machine, the spring F, provided with one or more flutes or corrugations, extending across it parallel, or nearly so, with its pressing-edge, substantially as described.

DAVID HALL RICE.

Witnesses:

C. E. PRATT,  
A. K. GARLAND.