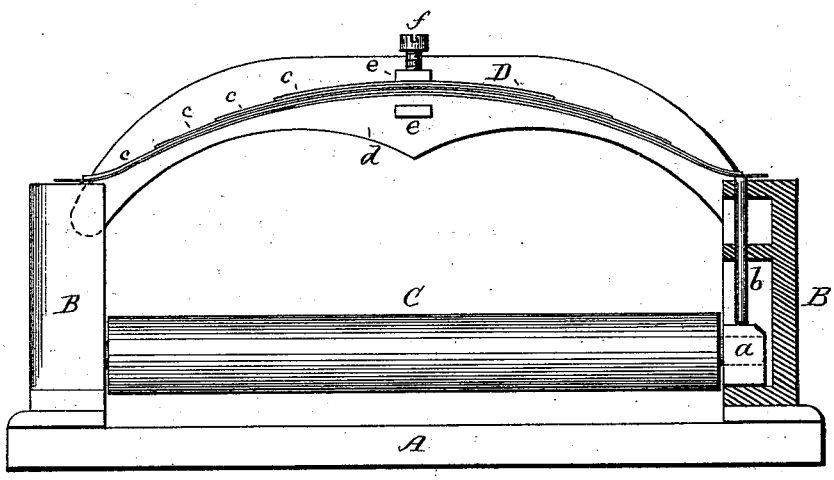
J. B. D. LEAVITT.
Planing-Machine.

No. 204,056. Patented May 21, 1878.



WITNESSES
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UNITED STATES PATENT OFFICE.

JOHN B. D. LEAVITT, OF LEBANON, NEW HAMPSHIRE.

IMPROVEMENT IN PLANING-MACHINES.

Specification forming part of Letters Patent No. **204,056**, dated May 21, 1878; application filed March 1, 1878.

To all whom it may concern:

Be it known that I, JOHN B. D. LEAVITT, of Lebanon, in the county of Grafton and State of New Hampshire, have invented a new and valuable Improvement in Planing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, making a part of this specification, and to the letters and figures of reference marked thereon.

This invention has relation to planing-machines; and the object or purpose thereof is to provide a machine of the character named in which the pressure roll or rolls at all times will work perfectly in accomplishing their purpose, and without danger of the mechanism to which the rolls are connected becoming inoperative by continued use.

The rubber springs heretofore used to hold the pressure-rolls down would in time lose their yielding or elastic qualities, caused by a chemical change in the composition, as well as by the constant pressure brought to bear upon the rubber, rendering it compact and hard, and therefore destroying its action as a spring.

There are equal objections to the coiled or spiral metal springs, as it has been found that after being used for a certain length of time the coils will become set upon each other, resulting in their entire unfitness as a spring, losing their compression and extension qualities. In the manufacture of this class of springs, in winding the coil the steel is so much strained on the one side and upset on the other that there is no certainty of its expanding or contracting under any very great pressure without danger of breaking; and if left soft enough to render it less liable to snap or break it will lose a greater part of its elasticity, and the coils, by constant use, would be permanently compressed upon each other, or, in other words, set, rendering the spring wholly inadequate as an attachment for the pressure-rolls of a planing-machine.

This invention, therefore, is designed to overcome, as far as possible, the difficulties attending the class of springs above referred to, by the employment of a flat or half-elliptic spring; also, in constructing the boxes or bearings in which the journals of the roll or rolls are supported independent of any attachments, and a rod interposed between the box or bearing and the end of the spring, as will be hereinafter described.

In the accompanying drawing, which illustrates a side elevation of my invention, partly in section, A represents a suitable bed, having standards B, grooved or recessed upon their inner sides to receive boxes *a*, in which is journaled one of the pressure-rolls, C, of a planing-machine.

Passing through holes in the standards B are rods *b*, the lower ends thereof pressing upon the boxes *a*. The rods *b* are kept pressed down upon the boxes *a* by a flat or half-elliptic spring, D, the outer ends thereof resting upon the upper ends of the rods.

The springs D, if desired, may be formed of a single piece of flat metal, or made in leaves *c*, and may be connected in any suitable manner to the machine, so that its outer ends will be free to act upon the rods *b*. In this instance, however, I have shown a side piece or casting, *d*, with ears or projections *e*, between which the spring is placed. The lower projection acts as a stop, and the upper one receives a suitable screw, *f*, for regulating the action of the spring, the same being formed upon its upper surface with a depression to receive the end of the screw.

If found practical, in some machines in place of a half-elliptic a full-elliptic spring may be used; and in place of the spring connected or arranged above to press down upon the roll, the spring may, with equal effect, be placed below to draw down, as in either case the roll with spring will have complete control of the board while being planed on either side or in the center; and the amount of pressure needed upon the roll may be readily obtained by shortening or lengthening the rods *b*, they being entirely independent of the spring and boxes, rendering them easily withdrawn.

By the use or application of a flat or elliptic spring in place of the rubber or coiled spring heretofore used, many advantages result therefrom, both as to strength and durability and perfect and regular action, as the pressure of the spring is equal, or nearly so, through its entire length; and should the spring become

broken, any blacksmith can repair it or make a new one with comparatively little expense and trouble, while with the spiral or coiled spring it could not be replaced without sending to the manufacturers.

I am aware of the patent of J. J. Russ, No. 75,984, dated March 24, 1868, and I do not therefore wish to be understood as claiming anything shown or described in said patent; but,

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

In a planing-machine, a pressure-roll having its bearings in adjustable boxes, in combination with an elliptic or flat metal spring, and vertical rods interposed between the boxes and ends of the spring, and independent of the same, substantially as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JOHN B. D. LEAVITT.

Witnesses:
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