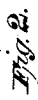


W. B. McIver,
Wood Plane Attachment.

N^o 53,466.

Patented Mar. 27, 1866.



Witnesses:

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Inventor:

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UNITED STATES PATENT OFFICE.

WM. B. McIVER, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN PLANING-MACHINES.

Specification forming part of Letters Patent No. 53,466, dated March 27, 1866.

To all whom it may concern:

Be it known that I, WILLIAM B. McIVER, of the city and county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Feeding Devices for Planing and Working Lumber; 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 accompanying drawings, in which—

Figure 1 represents a vertical cross-section through a pair of feed-rolls and their supporting-frame. Fig. 2 represents a vertical section through the frame, showing the rolls and their bearings in a front view. Fig. 3 represents a detached view, hereinafter to be referred to.

In feed-rolls of planing-machines where both rolls are driven by gearing, it is very essential that the upper roll should be able to rise and descend bodily, or at either end independently of the other, and that the cogged wheels of the rolls in said movement should remain in true gear with each other, so that no jarring or grinding of the cogs can take place. My improvements relate to certain devices by which this result is obtained with great perfection without the application of complicated mechanism.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A represents the main frame, on which the metal frame Z is mounted, which supports the upper and lower feed-rolls, B C. The lower feed-roll, C, is supported in the bearings D E, the latter of which has an angular extension, *a*, which terminates in a vertical journal-box for supporting the bearing of the bevel-wheel F, which turns within said journal-box.

G represents a shaft which passes loosely through the hub of the wheel F. It is provided with a spline, *b*, which fits within a corresponding groove in the wheel F, and the shaft and its spline have sufficient play within the wheel F, so that they can play therein loosely and be moved up or down in a vertical direction. The upper end of the shaft G is firmly secured to the bevel-wheel H, which is provided with a neck and collar, (represented in section at Fig. 3,) which serve as its bearing and which work in the vertical journal-box *d*. The journal-box *d* is supported by a bracket,

I, which extends from the journal-box K, the latter serving to support one of the journals, *p*, of the upper roll, B, while the other journal, *g*, is supported by the box L. The journal *p* of the roll B and the upper journal of the shaft G being thus supported by boxes on one rigid piece, it is obvious that the gears H and U, secured to shaft G and to the roll B, must be in perfect gear, no matter to what position the roll B is moved. The same is the case in respect to the gearings F and V, whose bearings are also supported by boxes on one rigid piece, *a*.

The upper roll, B, is hung to the transverse plate M by means of two stirrups, *h*, which pass around suitable rims of the roll near the ends thereof, and the upper ends of the stirrups *h* are secured to the transverse plate M by means of screw-nuts *f*. Between the ends of the transverse plate M and the journal-boxes K L are inserted india-rubber springs N, which yield to a certain extent when the lumber is forced in between the rolls, and exert sufficient pressure upon said rolls to impart to them the desired action. Thus a firm connection is made between the journal-boxes K L and between the transverse plate M.

O represents screw-shafts, which work within the ends of the transverse plate M. They are provided with collars *m* near their upper ends, and have their bearings within the upper part, P, of the metal frame. They are secured to the bevel-wheels Q, which are in gear with the bevel-pinions R on the shaft S, and the latter can be turned by means of the crank T.

The operation of the device is as follows: When the crank T is turned, the pinions R operate the bevel-wheels Q and thus turn the screw-shaft, raising or lowering, as the case may be, the upper roll, B, by the action of the screw-shafts O upon the transverse plate M. In elevating or lowering the feed-roll B its journal-boxes K and L move with it within the metal frame Z, and consequently the bevel-wheels U V move with it, and the shaft G also participates in said movement, sliding within the wheel F. The consequence is that the wheels U and H and V and F always remain in gear, no matter what the position of the rolls may be, and the gearing, therefore, must work perfectly and without any grinding.

Should the lumber which is passed between the rolls be thicker on one edge than on the

other, the springs N will yield to that extent, and the rolls will thus remain in perfect contact with the lumber; nor will the gearing be affected to any extent, as the lower end of the shaft G has sufficient play in its sleeve.

Having thus fully described the nature of my invention, what I claim herein as new, and desire to secure by Letters Patent, is—

1. The combination, with the feed-rolls of a planing-machine or machine for working lumber, of the bevel-gearing F V H U and sliding shaft G, substantially as and for the purposes described.

2. The combination, with the feed-rolls in a planing-machine, of mechanism for operating

both rolls upon their axes and for elevating and lowering the top feed-roll, substantially as herein described.

3. Supporting the gear end of the feed-roll and the upper end of the vertical shaft in the same stand or bearing-piece, substantially in the manner and for the purposes stated.

4. Supporting the upper end of the vertical shaft as described, in combination with giving its lower end play, as and for the purposes set forth.

WM. B. McIVER.

Witnesses:

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