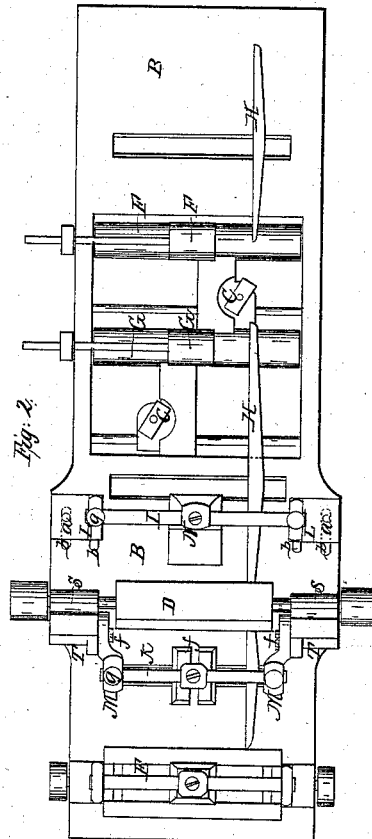
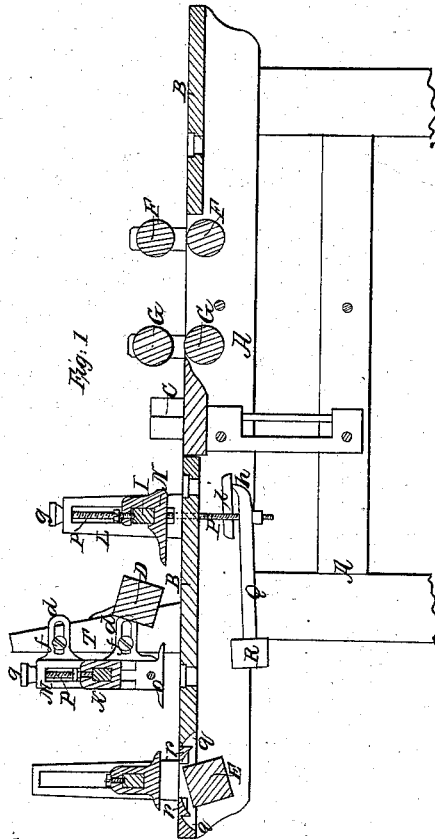
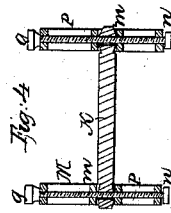
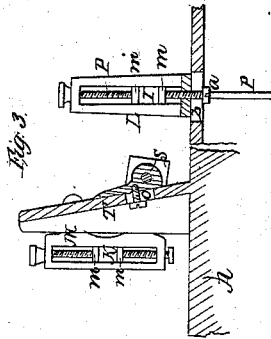


H. A. Lee

Wood Molding Machine,

No. 18,185,

Patented June 13, 1865.



Witnesses:
Henry A. Lee
Wm. H. Miller

Inventor:
Henry A. Lee
by his Attorney
Thos. G. Dodge

UNITED STATES PATENT OFFICE.

HENRY A. LEE, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN PLANING-MACHINES.

Specification forming part of Letters Patent No. 48,185, dated June 13, 1865.

To all whom it may concern:

Be it known that I, HENRY A. LEE, of the city and county of Worcester, and State of Massachusetts, have invented certain new and useful Improvements in Molding-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 accompanying drawings, in which—

Figure 1 represents a longitudinal vertical section through said molding-machine. Fig. 2 represents a top view of the same. Figs. 3 and 4 represent detached views, hereinafter to be referred to.

My invention relates to certain improvements on the molding-machine patented by me October 13, 1863.

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 of the machine.

B represents the table or bed-plate on which the articles to be molded are supported.

C represents the vertical cutter-heads, the cutters of which operate upon the edges of the material.

D and E represent horizontal cutter heads, the former above, the latter below, the bed-plate B of the machine, the cutters of which operate respectively upon the upper and lower sides of the stuff.

On the drawings the cutter-heads are represented without cutters, as the latter do not constitute part of my present invention.

F F represent the ordinary feed-rolls in front of the vertical cutter-heads, to hold and conduct the stuff while the cutters are at work. To make this operation more perfect I use an additional pair of feed-rolls, G, which act upon the stuff in conjunction with the feed-rolls F; but by having the feed-rolls G between the cutter-heads C their action greatly insures not only the feed of the material, but also the direction in which the stuff is fed by pressing it more firmly against the guides or rests H.

I and K represent horizontal pressure-bars, which are supported on adjustable stands L and M in front and to the rear of the horizontal cutter-cylinder D. They are provided respectively with shoes N and O, which press the stuff firmly to the bed while it is acted upon

by the cutters of the cylinder, and it is very essential to a perfect operation of the machine that these pressure-bars and shoes should be set as closely to the cylinder as the length of the revolving cutters permits. For this purpose the bolts *a*, by which the stands L are secured to the bed-plate, pass through slots *b* of the bed-plate, and I also secure the stands M of the bar K to the frame of the cutter-cylinder by means of slotted flanges or lugs *d*, through which the bolts *f* pass. Thus the frames or stands of both pressure-bars are made adjustable from and toward the cutter-cylinder D. The height of the pressure-bars K I and their shoes N O is made adjustable by means of the screw-rods P, the heads *g* of which rest upon the frames M L, while the screw-spindles pass loosely through said frames and through the ends of the pressure-bars I K, but work in the screw-nuts *m*, Fig. 3, which are set upon the upper and lower sides of the ends of the pressure-bars. The screw-spindles P of the frame L extend downward beneath the bed-plate, where to each of them a weighted lever, Q, is secured, the front point, *h*, of which bears against a projection, *i*, of the main frame, while the weight R presses the long arm of the lever downward, and thus causes the shoe N to press upon the stuff. It will be noticed that by this arrangement the pressure of the shoe N upon the stuff is the same, whether the frame L is moved from or to the cylinder D, as the leverage of the lever Q remains unchanged, owing to the fact that the spindles P can be moved freely through the slot in the bed-plate, while the point *h* of the lever, which constitutes its bearing, can slide on the lower edge of the projection *i*.

As shown at Fig. 4, the ends of the pressure bars K I, which are in contact with the screw nuts *m*, are rounded off. This is for the purpose of enabling said pressure-bars and their shoes to assume oblique positions in case the stuff to be acted upon should be thicker on one edge than on the other, so that it will be firmly pressed upon the bed-plate, which would not be the case if the pressure-bar could not deviate from its horizontal position, in which latter case it would bear upon one edge only of the stuff.

As the machine should be adapted to work stuff of different dimensions, and with the ap-

plication of cutters of various sizes, it is desirable to make the bearing of the cylinder-cutter D adjustable, so that said cylinder can either be secured at any desirable height, or so that it can be moved while working to operate upon stuff whose thickness is variable. This I effect by securing the journal-boxes S of the cylinder-cutter upon its frame or stand T by means of screws which pass through slots *o* in the frame, as shown at Fig. 3, and said screws are to be tightened when the cylinder is to be secured at a certain height.

E represents the cutter-cylinder, which is used for planing the lower side of the stuff. On this cutter-cylinder I use knives for the purpose of springing moldings upon the under corners of the stuff which is not required to be planed on the under side. This operation has been performed heretofore by means of suitable cutters attached to the vertical cutter-heads, and has been attended with difficulty, inasmuch as the points of the cutters, when so fastened and operated, are liable to become dull and worn off, thus leaving the molding in a rough condition. By my arrangement such molding can be sprung with ease and neatness; but as the cutters employed for this purpose have to be of greater length than those used for planing the bottom, it is evident that the aperture or mouth in the bed-plate in which the cutters revolve must be enlarged. This is attended with the difficulty that thin stuff cannot be properly worked on a large mouth of the bed-plate, as it springs and yields too much. To avoid this difficulty I use an adjustable mouth in the bed-plate, which consists of the pieces *p*, which are inserted into the bed-plate when thin stuff is operated upon on which no molding is sprung on the lower corners, but which are removed when the latter operation is to be performed, and a wide mouth, *q*, is left open, through which cutters of sufficient length can operate to spring moldings upon the lower corners.

In that class of work where the molding is sprung upon the under corners it is not necessary to plane the under surface, as that is placed

next to the building and is not seen, the top and sides only being exposed. As before stated, the only plan adopted prior to my invention was to place the cutters upon upright heads; but as such cutters, when so placed, were constantly working against the grit and dust on the board or stuff they soon became rough or worn off, so that the molding was left in an imperfect condition. By my plan the cutters working up against the advance of the stuff always keep sharp and leave the moldings smooth and true. Another advantage of my improvement consists in the fact that the moldings are to be cut at the same time that the upper face and the sides are worked or molded.

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 horizontal cutter-cylinder of a molding-machine, of an adjustable automatic pressure-stand, whereby the pressure of the shoe upon the stuff remains the same, whether the stand is removed to or from the cylinder, substantially as and for the purposes stated.

2. The combination, with the adjustable stand L, of pressure-bar I, screw-shaft P, and weighted levers Q, substantially as and for the purposes specified.

3. In combination with the adjustable pressure-bars K, the adjusting-screws P and screw-nuts *m*, operating against the rounded ends of the bar K, as and for the purpose specified.

4. In combination with the stand M, the slotted flanges *d*, when secured to the standard T of the cutter-cylinder D, to make it adjustable thereon, as and for the purposes specified.

5. In combination with the cutter-cylinder E, working under the bed B, the adjustable mouth-piece *p* in the bed-plate, by which moldings can be cut on the lower corners of the stuff while the sides and face are worked, as herein shown and described.

HENRY A. LEE.

Witnesses:

THOS. H. DODGE,
GEO. H. MILLER.