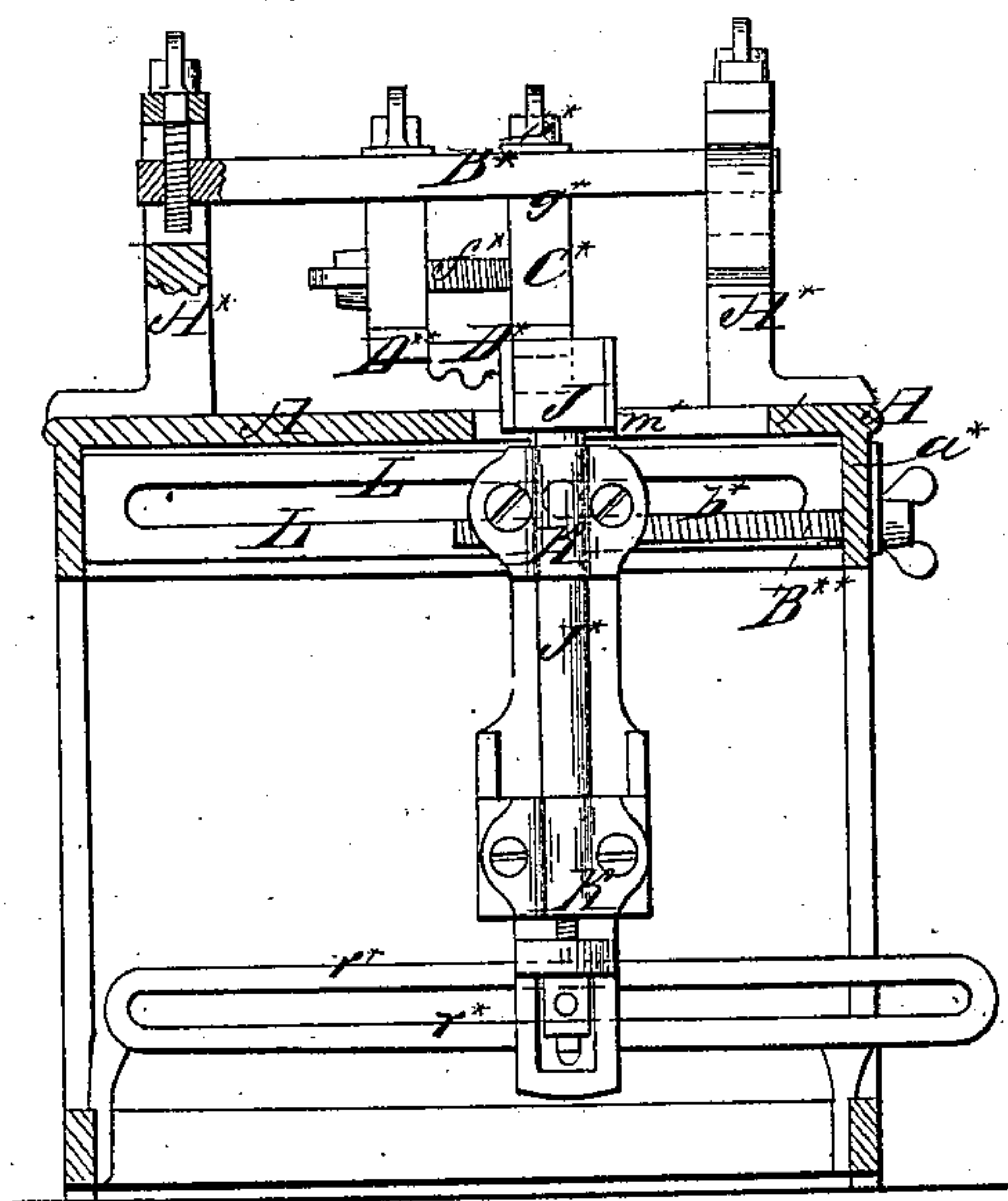


2 Sheets. Sheet 2.

R. N. Meriam,
Wood Molding Machine.
N^o 76,791. Patented Apr. 14, 1868

Fig. 3.



Witnesses:
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A. Heller

Inventor:

Rufus M. Meriam

United States Patent Office.

RUFUS N. MERIAM OF WORCESTER, MASSACHUSETTS.

Letters Patent No. 76,791, dated April 14, 1868.

IMPROVEMENT IN WOOD-PLANING MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, RUFUS N. MERIAM, of Worcester, in the county of Worcester, and State of Massachusetts, have invented certain new and useful Improvements in Wood-Moulding Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a portion of this specification, in which—

Figure 1 is a plan view of a moulding-machine constructed according to my invention.

Figure 2 is a vertical longitudinal section of the same, taken in the line *x x* of fig. 1.

Figure 3 is a vertical transverse section of the same, taken in the line *y y* of fig. 1.

Similar letters of reference indicate corresponding parts in all the figures.

The invention consists in one or more presser-blocks, having their bearing-surfaces the reverse of that of the moulding, and so arranged in relation with the moulding-cutters and the side-cutter or cutters of the apparatus as to hold the stuff and insure its passage in a direct line as it passes from the moulding-cutters in such position that it may be most advantageously acted upon by the side-cutters employed to trim the edge of the stuff opposite that at which the moulding is formed.

The invention also consists in a novel construction and arrangement of springs with reference to the sliding bearings of the feed-rollers of the apparatus, and suitable adjusting-screws, whereby the pressure exerted upon all the feed-rollers is rendered uniform, and capable of ready adjustment to any requisite extent, and whereby the said rollers may be arranged much closer together than when a straight or slightly-curved spring is used.

The invention further consists in certain novel means of securing the more efficient retention of the stuff in proper position as it passes to the moulding-cutters; also, in the construction of the presser-blocks arranged over the surfaced work so as to fit on the surface of the moulding being made, and thereby act as a guide to the stuff while the side-cutter is operating thereon, and in supporting the side-cutters in such a manner as to admit of their adjustment to cut at any desired angle to the flat surfaces of the stuff.

To enable others to understand the construction and operation of my invention, I will proceed to describe it with reference to the drawings.

A represents the bed of the machine, at one end of which are the two transverse feed-rollers *a*, the journals of which work in bearings, *b*, capable of a vertical movement in guides or boxes, *c*. Provided between the two boxes *c*, at each side of the bed, is a bridge-piece, *d*. The two bearings *b* at each side of the bed are pressed downward by a spring, *B*, the central part, *a'*, of which is straight, and has passed through it a vertical screw, *e*, which screws into the bridge-piece *d*, the two end portions *b'* of the spring being curved in the form shown more fully in fig. 1, and resting upon the bearings *b* to press down the same, as just mentioned, the pressure being capable of adjustment to any required degree by turning the screw *e* to raise or lower, as the case might require, the centre portion *a'* of the spring *B*.

Situated at the inner sides of the feed-roller bearings just described, are two vertical standards, *g*, which, at their upper ends, are provided with vertical transverse slots, which receive the ends of a transverse bar, *C*; which may be adjusted vertically by means of screws, *m*, which pass down through the caps *c'* of the standards, into or through female screws formed in the ends just mentioned of the bar *C*. This bar has formed in it a longitudinal slot, *d'*, into which is fitted the upper end of a sleeve, *n*, which may be fixed at any part of the bar *C* by means of a locking-screw, *e'*, screwed into the upper end of the sleeve at the upper side of the bar, and operating in conjunction with shoulders *a''* formed upon the sleeve below the bar.

Shown at *r* is a stem, the upper portion of which is fitted into the sleeve *n*, and retained therein by a pin, *b''*, fitted into one side thereof, and passing through a slot, *c''*, in the side of the sleeve. This stem is pressed downward by a spiral spring, *s*, situated within the sleeve, and has secured upon its lower end the flat presser-plate *D*. By moving the sleeve longitudinally along the bar *C*, it may be brought directly over the stuff to be moulded, as the same passes from the feed-rollers to the moulding-cutters, while by raising or lowering the bar

C, by means of the screws *m*, the presser-plate may be readily adjusted, to suit the thickness of the stuff on which it operates, by the pressure of the spring *s*.

Situated at the inner side of the standards *g* are ports, *E*, furnished with vertically-adjustable bearings, *u*, which receive the journals of the cutter-head *F*. Formed longitudinally in the bed *A*, underneath the cutter-head, are slots, *w*, which extend quite through the bed, and are arranged side by side so as to have the character of a grating.

The cutters, one of which is shown at *a**, are attached to the cutter-head, and are designed, as it revolves, to pass down into or through one or the other of these slots *w*, according to the position it may occupy upon the cutter-head, the office of the slots *w* being to permit the cutter to pass somewhat beyond the lower surface of the stuff, in forming the moulding on the edge of the latter, in order that the lower edge of such moulding may be made sharp and well defined, instead of ragged or irregular, as would be likely to otherwise be the case, and, furthermore, to permit the chips or shavings cut from the stuff in the moulding-operation to fall or pass away from the immediate vicinity of the cutters, thus obviating all danger which might otherwise exist of communicating an irregular movement to the stuff by the collection of the chips underneath the moulding.

Placed at that side of the posts *E*, opposite that at which are situated the standards *g*, are other standards, *A**, which are slotted vertically, and provided with vertical adjusting-screws in the same manner as the standards *g*, and which serve to support a horizontal longitudinally-slotted bar, *B**, corresponding to the bar *C* of the standards *g*, and vertically adjustable by the vertical screws of the standards *A**. *C** shows a movable piece, the upper end of which is reduced in size to pass through the slot of the bar *A**, and which, being formed with shoulders, *g'*, and provided at its upper end with a locking-screw, *b**, may be firmly secured in a fixed position at any requisite part of the bar *A**.

Secured at one edge to the lower end of the piece *C** is a presser-block, *D**. The lower surface of this presser-block is so shaped as to be the reverse of that of the moulding formed upon the stuff by the cutters *a**, and is steadied by the pressure against that edge thereof opposite the one at which it is attached to the piece *C** of the lower end of a steadying-piece, *D***, such steadying-piece being attached to the slotted bar *A** by means similar to those by which the piece *C** is secured thereto, and drawn tight against the block *D** by a screw, *f**, (see fig. 3.)

Situated near the end of the bed *A*, and designed to be in line with the presser-block *D**, is another presser-block, *E**, having its under-surface of the same form as the block *D**. The presser-block *E** is attached at one end to a carrier-frame, *F**, made vertically adjustable upon a standard, *G**, by means of a screw, *I*, shown more clearly in fig. 2, and is steadied or supported at its outer edge by a clamping-piece, *I**, adjustable longitudinally in the slotted upper part of the carrier-frame by means of a suitable screw, *i**, which serves to clamp the clamping-piece *I** against the block *E**. The latter being vertically adjustable by means of the screw *I*, may be readily arranged to act upon stuff of any thickness.

That portion of the bed *A** adjacent to the two presser-blocks just described, is provided at the opposite sides thereof with two slots, shown at *m* n**, through which extend upward the side-cutters *J*. The shaft *J** of each of the cutters *J* works in bearings provided in an adjustable frame, *K*, the upper end of which is pivoted to a sliding block, *K**, which is attached by any suitable means to a slotted guide-bar, *L*, arranged transversely underneath the bed *A*, the block *K** being moved longitudinally upon the guide-bar *L* by means of a screw, *b***, passing thereto through or from the surrounding framework *a*** of the bed, and is tightened upon the just-mentioned guide-bar by another screw, *c***. The lower end of the frame *K* rests against a slotted transverse bar, *r**, and is held thereto by a screw, *s**, passing through the slot of such bar, and a suitable slot in the lower end of the frame *K*, so that by these means the frames *K* may be readily adjusted to bring the cutters in proper proximity to the stuff as it passes between the two presser-blocks *D* E**, and may also be adjusted at any desired angle to enable the cutter to cut any bevel required upon that edge of the stuff opposite the one at which the moulding is formed by the action of the moulding-cutters *a**, it being designed that only one of the two side-cutters *J* be used at a time, one or the other being employed, according as it may be desired to cut or bevel one edge or the other of the stuff.

In using the machine, the boards, planks, or other stuff pass first under the feed-rollers *a*, and as they fed or carried forward, pass first under the presser-plate *D*, which being actuated by the spring *s*, serves to steady the same as it moves to and past the moulding-cutters *a**, which cut the moulding on the edge thereof. As the stuff passes from the moulding-cutters, it is held down and kept in proper position by the presser-blocks *D* E**, while one of the side-cutters *J*, having been first adjusted to cut the requisite bevel, cuts or trims that edge of the stuff opposite the one at which the moulding is formed, as just explained. The chips or shavings cut from the stuff by the moulding-cutters in forming the moulding on the stuff fall through that one of the slots *w* which may be under the moulding-cutters, thus preventing any clogging of the latter, at the same time that such slot, by permitting the cutters to move past or beyond the lower surface of the stuff, causes the lower edge of the moulding to be made sharp and well defined.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The slots *w* in the bed *A*, arranged beneath the cutter-head *F*, to permit the escape of the chips or shavings, substantially as herein set forth.
2. The arrangement of one or more presser-blocks, *D* E**, in relation with the moulding-cutter and one or more side-cutters, *J*, substantially as shown and described, and for the purpose specified.
3. The curved end portions *b* of the springs *B*, arranged to act upon the sliding bearings of the feed-rollers, substantially as shown and described, and for the purpose specified.
4. The presser-plate *D*, formed with a stem, *r*, and spiral spring *s*, arranged in the sleeve *n*, and made adjustable upon the slotted bar *C*, substantially as and for the purpose specified.

5. The presser-block E*, constructed with a detachable bearing-piece, whose under surface is the reverse of the surface of the moulding, and made adjustable vertically and laterally, substantially as herein shown and set forth.

6. The slide K*, in combination with the slotted bar L, screw b**, and pivoted frame K, all constructed and operating in connection with the slotted bar r to admit of an angular adjustment of the side-cutters J, substantially as set forth.

Witnesses:

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A. LE CLERC.

RUFUS N. MERIAM.