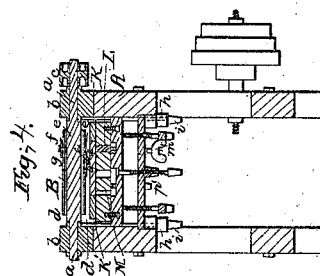
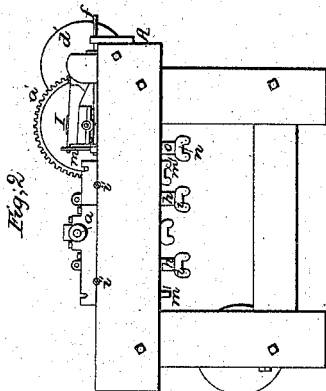
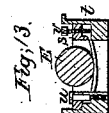
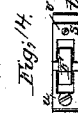
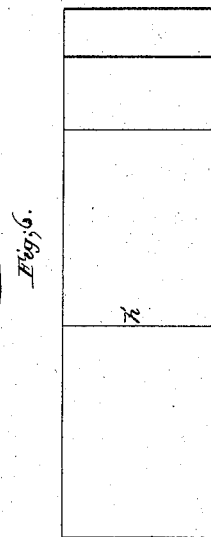
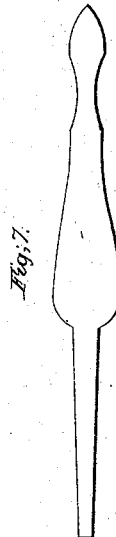
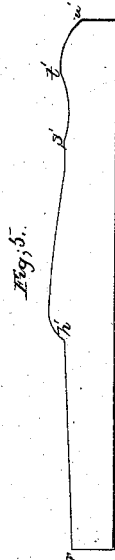
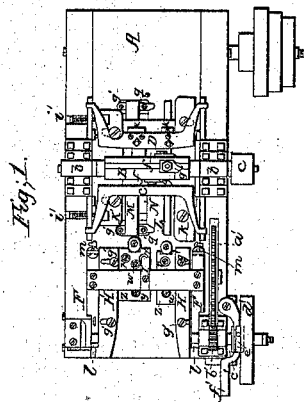
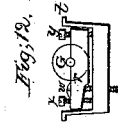
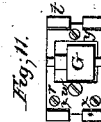
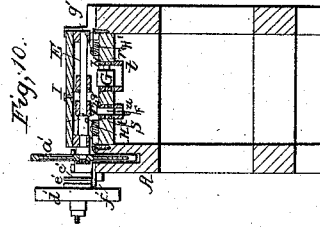
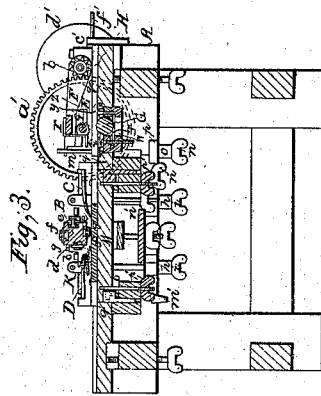


E. S. Hunt

Molding Fan Sticks.

N^o 107,913

Patented Oct. 4, 1870.



Witnesses,
L. N. Piper
J. R. Snow,

Inventor,
Edmund S. Hunt
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R. H. Lee.

United States Patent Office.

EDMUND S. HUNT, OF WEYMOUTH, MASSACHUSETTS.

Letters Patent No. 107,913, dated October 4, 1870.

IMPROVEMENT IN MACHINES FOR MAKING FAN-STICKS.

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

To all persons to whom these presents may come:

Be it known that I, EDMUND S. HUNT, of Weymouth, in the county of Norfolk and State of Massachusetts, have invented a new and useful Machine for Molding Fan-stick Blocks; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figure 1 is a top view.

Figure 2, a front elevation.

Figure 3, a longitudinal section, and

Figure 4, a transverse section of such machine.

Figure 5 is an edge view, and

Figure 6, a top view of an inside fan-stick blank, as molded on one side by the machine.

Figure 7 is an edge view of such blank, as molded on its opposite sides, or reduced to the shape for being split, by a gang of saws, into fan-sticks.

Figure 8 is an edge view of an outside fan-stick blank, as molded on one side by the machine.

Figure 9, is an edge view of the blank, as molded on its opposite sides.

In some respects the machine is similar to a common plane-surface wood-planing machine, but it differs therefrom in others, it being provided with mechanism for doing what such planing-machine cannot perform.

In the drawing—

A denotes the bench or table of the machine, and

B, a rotary cutter-stock, whose journals, *a a*, are arranged in boxes *b b*, projecting upward from the top of the table. A driving-pulley, *c*, is fixed to one of such journals.

The cutter-wheel or stock B is a prism, having on each of its sides a groove, *d*, extending lengthwise through it, and being dovetailed in horizontal section for the purpose of receiving the head of a clamp-screw, *e*, to operate with a nut, *f*, in fastening a cutter, *g*, to such side.

There is a spring presser, C, in rear of the cutter-stock, and there is also another such presser, D, in advance of it, they being each provided with pressure-springs *h h*. These springs are blocks of India rubber, encompassing screw-rods, which depend from the pressers, and have thumb-nuts, *i i*, applied to them, for the purpose of regulating the draft of the springs on the pressers.

The advance presser has two plates or bearers, *k k*, projecting from it, and held to it by means of screws and nuts, so arranged as to enable each of such bearers to be adjusted nearer to or further from the bottom of the presser, and tipped more or less into an angle therewith, as occasion may require. The purpose of these bearers is to rest the dressed part of a board, and aid in holding the board down while passing under and from the cutters.

At a proper distance in rear of the cutter-cylinder or stock is a horizontal shaft, E, whose journals are supported in a frame, F, pivoted to the table as shown at *ll*. This frame, at its front part, is provided with hangers or rods, *m m*, which hook upon studs projecting from the frame. At their lower ends these hangers have screws to receive nuts *n n*, which screw against India-rubber or other proper springs, *o o*, encompassing the hangers and resting against the lower surface of ears *p*, extended from the table.

The shaft E is provided with one or two feed-wheels, *q q*, see Figure 10, which is a transverse section of the machine, it being taken through the shaft E.

Underneath the feed-wheels are two bed-wheels, F G:

Each bed-wheel has its journals supported in a box or frame, *r* or *s*, which is also arranged within a box or supporter, *t*, let into the table-top.

Figure 11 is a top view, and

Figure 12, a side elevation of the larger bed-wheel box and its supporter, with the bed-wheel arranged in the box.

Figure 13 is a longitudinal section, and

Figure 14, a top view of the smaller bed-wheel, its box, and the supporter thereof.

In these latter figures the box is shown as held to the supporter by a clamp-screw, *u*, and provided with an adjusting-screw, *v*. The screw *v* screws down through the box and against the supporter, and serves to enable the box to be raised more or less on the supporter.

The other wheel-box has one screw, *w*, for connecting it with its supporters; and, besides such, it has three adjusting-screws, *x*, *x*, and *y*, which screw through the box and against the supporter. These adjusting-screws are so arranged as to enable a person, by means of them, not only to raise the box, but to tip it more or less, the tipping of it being to incline the axis of the bed-wheel more or less, as occasion may require.

It will also be seen that the shaft of the larger bed-wheel projects more from one end of the wheel than from the other, and that the length of the opening of the box in which the bed-wheel rests is as long as the shaft is between. Such is for the purpose of enabling the bed-wheel to be set in two different positions or distances from the other bed-wheel. By raising the larger bed-wheel out of its bearings, and turning it around horizontally one hundred and eighty degrees, and replacing it in the bearing, the wheel will be brought nearer to the other.

The above-described adjustments of the bed-wheels become necessary, to adapt the machine to the formation of fan-stick blanks varying in size or length.

A cap-plate, *z*, is arranged over the box of each of the bed-wheels, and with its upper surface even with that of the table.

Furthermore, the shaft E has a gear, *a'*, fixed on one end of it, such gear being made to engage with a pinion, *b'*, fixed on a driving-shaft, *c'*.

On the shaft *c'* is a driving-pulley or wheel, *d*, the shaft being provided with a clutch, *e'*, to be operated by a lever, *f'*. The said clutch serves to engage or disengage the shaft and pulley-wheel, as occasion may require, in order to cause such shaft to be put in revolution by the wheel, or be at rest, while the wheel may be in movement.

Underneath the shaft E, and held to the table-top by screws *g'*, are two longitudinal bars or guides, H H', having transverse slots going through them, for the reception of the screws *g'*, which are screwed into the table. These guides are adjustable laterally of the table, and are to guide the piece of board to the cutters of the cutting-wheel.

There is also a gauge, I, extending from the frame F, at or near its middle, in manner and formed as represented. This gauge serves to bring the part *h'* (see figs. 5 and 6) of the dressed blank into proper position on the table preparatory to the adjustment of the guides H H'.

Other adjustable guides, K K', are arranged on the table, and in advance of the guides H H'. The said guides K K' extend along underneath the pressers C D and the cutter-cylinder stock B. The said guides K K' are held to the table by screws going through slots arranged transversely in the guides; and, furthermore, there are, to one of such guides, certain screws, *i' i'*, one for forcing the guide inward toward its fellow, and the springs are to cause the guide to fit closely to a piece of board, and keep it in contact with the fellow guide while such piece of board may be subjected to the action of the cutters of the cutter-stock.

In advance of each of the bed-wheels, and extending underneath the cutter-stock and pressers, there is also a bed-guide, the same being as shown at L and M.

The smaller of these bed-guides is movable vertically within the table, and is provided with adjusting-screws *m' m' n'*, by which its vertical position, with respect to the upper surface of the table, may be regulated.

The other bed-guide M, arranged in a slot, N, wider than the guide, is held down by screws *o o*, which go through slots extending transversely of the machine. Clamp-nuts *p' p'* on such screws serve to confine the guide M in position. Thus it will be seen that the guide M is adjustable laterally of the bench, and ca-

pable of being fixed in any assumed position within the limits of its movement. It also has screws, *q' q'*, applied to it and its supports, for the purpose of adjusting it in height, or regulating the projection of it above the bench.

In using the machine, the cutters of the cutter-stock, being supposed to have been suitably formed and adjusted for dressing the upper surface or part of a piece of board to the shape as shown in section at *r' h' s' t' u'*, in fig. 5, and the bed-wheels and bed-guides having been disposed so as to be even with the top surface of the table, and the edge gauges also having been properly adjusted, the piece of board to be dressed should be placed between the rear edge gauges and advanced up to the feed-wheels *q q*. These feed-wheels, as the pieces of board are successively brought up, will advance them, or each of them, toward the cutter-stock, which, as they in succession pass underneath it, will dress them to the required shape on their upper surfaces.

After being thus dressed, any desirable number of such pieces of board, the bed-wheels and bed-guides should be properly adjusted to support each board at its bottom *s t*, and on the part *r' h'*, while the piece may be again submitted to the action of the machine, which should follow in order to reduce the board on its opposite side in proper correspondence with the first reduction, the two reductions bringing the board into a shape whose transverse section is represented in fig. 7 or in fig. 9, as the case may require.

In the above-described machine,

I claim, as my invention, the following:

1. The combination of the adjustable bed-wheels F G, bed-guides L M, and edge guides H H' K K', with the cutter-stock B, and one or more feed-wheels, *q*, the pressers C D, and the table or bench A, the whole being arranged substantially in manner, and so as to operate together, as and for the purpose as explained.

2. The combination of the gauge I with the frame F, the feed and bed-wheels, the cutter-stock, the pressers, and the edge and bed-guides, arranged with the table or bench, and to operate together, as set forth.

3. The combination of the adjustable bearers *k k* with the front spring presser, when combined with the rear presser, the cutter-stock, the feed and bed-wheels, and guides, as set forth.

EDMD. S. HUNT.

Witnesses:

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L. N. MILLER.