

UNITED STATES PATENT OFFICE.

SYLVANUS J. TALBOTT, OF MILFORD, NEW HAMPSHIRE.

IMPROVEMENT IN PLANING-MACHINES.

Specification forming part of Letters Patent No. 54,441, dated May 1, 1866.

To all whom it may concern:

Be it known that I, S. J. TALBOTT, of Milford, in the county of Hillsborough and State of New Hampshire, have invented a new and useful Improvement in Board-Matching Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a vertical longitudinal section of my improved machine, taken through the line *xx*, Fig. 2. Fig. 2 is a top or plan view of my improved machine. Fig. 3 is a vertical cross-section of the same, taken through the line *yy*, Fig. 2. Fig. 4 is an end view of a board matched by my improved machine.

Similar letters of reference indicate like parts.

My invention has for its object to furnish a machine by means of which the groove and tongue in matching boards may both be cut at the same time and by the same machine; and it consists, first, in a sliding cutter-frame, a swinging frame, and a connecting-bar, in combination with each other and with a board-matching machine; and, second, in the combination, with a board-matching machine, of a set of feed-rollers and the pulleys and gear-wheels by which they are connected and operated, as hereinafter more fully described.

A is a cast-iron table, which supports the various parts of the machine. Upon this table A is erected an upright table, B, which serves as a support and guide to the board while being operated upon, and which has a part cut away to allow space for the movable or sliding cutter-frame, as seen in Figs. 1 and 2.

C is the driving-shaft, which is hung beneath the table A in suitable supports D, and which receives motion from the power by means of a band passing over a pulley, L, on said shaft C. Upon the end of the shaft C is placed a double pulley, E, around which passes two bands, F and G. The band F passes around the pulley H, attached to the lower cutter-shaft, I, and communicates motion to said shaft. This shaft I revolves in bearings beneath the table A, and carries the cutter-block J, to which the cutters K are attached. These cutters K pass up through an opening or slot in the table A a sufficient distance to form the groove or tongue

in the edge of the boards. The band G passes from the pulley E around the large pulley M, which is attached to the shaft N.

O is a small gear-wheel attached to the shaft N, and revolving with it. This wheel meshes into a large gear-wheel, P, which works freely upon the shaft I. The small gear R is securely attached to the gear-wheel P, and they revolve loosely upon the said shaft I. The gear-wheel R meshes into and imparts motion to the large gear-wheel S, which revolves loosely upon the shaft N.

The double pulley T is firmly attached to the gear-wheel S, and revolves with it loosely upon the said shaft N.

The bands U and V pass over the double pulleys T and over the pulleys W and X upon the feed-shafts Y and Z, and impart motion to the feed-rollers A' and B' upon said shafts. These rollers pass up through openings in the table A, as shown in Figs. 1 and 2, and carry the boards forward as they are operated upon by the cutters.

It will be observed that while the cutters revolve very rapidly the motion is slowed by the gearing O P R S, so that the boards are fed forward to the cutters at the proper rate to enable them to complete their work. If the boards to be matched were all of the same quality, this arrangement would be sufficient; but as some boards work easier than others it is necessary that the operator should be able to vary the rate of feed as required. This he is enabled to do by tightening or slackening the belt G, which passes over the pulley M and drives the feeding apparatus.

C' is a bent lever, pivoted to the edge of the table A. Upon an arm at one end of the said lever revolves a pulley, D'. The other end of the lever C' comes in contact with the rack E, by the teeth of which the lever is held in any position in which it may be placed. By moving the lever in one direction along the rack E' the pulley D' is pressed down upon the belt G, tightening it, thus imparting a more rapid motion to the feed-rollers A' and B'. By moving the lever in the other direction the belt G is slackened and the feed apparatus operated more slowly, thus enabling the operator to vary the rapidity of feed as required.

To the upper surface of the table A is pivoted the lower end of the swinging frame F'. In the upper part of this frame revolves a shaft,

G', which carries two pulleys, H' and I'. This shaft receives motion from the driving-shaft C by means of the band J', which passes around a pulley on said shaft C and around the pulley H' of the shaft G'. The band K' passes around the pulley I' on the shaft G' and the pulley L' on the upper cutter-shaft, M', and communicates motion to said cutter-shaft. The shaft M' also carries the cutter-block N' and the cutters O'.

The sliding frame P' and the swinging frame F' are kept at the same distance apart, so as to keep the belt K' always taut by the inflexible connecting-bar R', which is pivoted to the said frames, as represented in Fig. 1.

S' are grooved guides, in which the sliding frame P' slides vertically to adapt itself to the various widths of the boards to be operated upon. T' is a gage attached to the frame P', by means of which the depth of the cut is regulated.

The board U' is kept up against the vertical table B while being fed through the machine by the vertical rollers V', which revolve in bearings placed in slots in the supports W', and are held up to their work and enabled to adjust themselves to the various thicknesses of the boards to be matched by springs placed in said slots and pressing against said bearings.

I claim as new and desire to secure by Letters Patent—

The sliding frame P', swinging frame F', and connecting-bar R', constructed as described, in combination with each other and with a board-matching machine, substantially as and for the purpose set forth.

SYLVANUS J. TALBOTT.

Witnesses:

BAINBRIDGE WADLEIGH,
THOS. L. LIVERMORE.