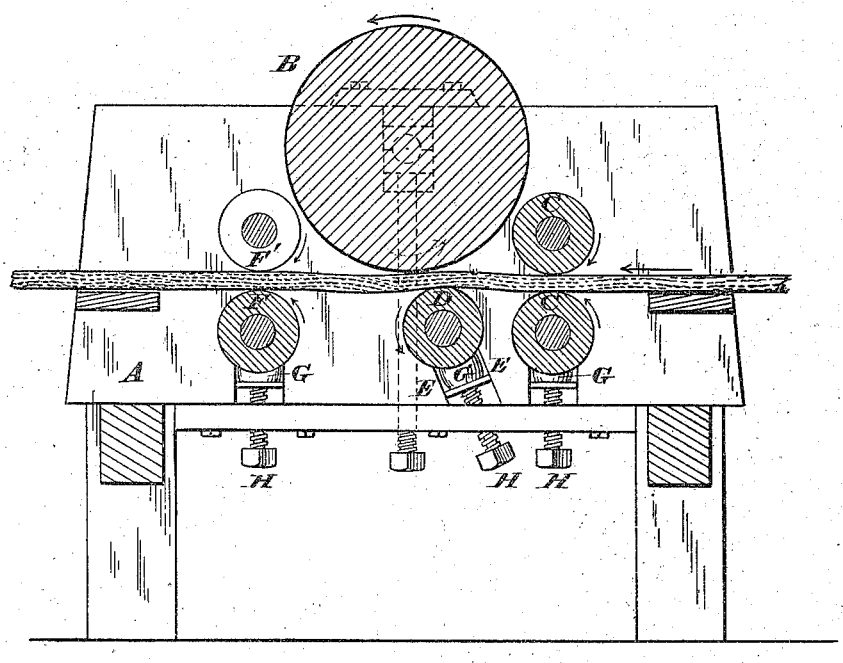
2 Sheets—Sheet 1.

J. CREAGER.

Wood-Polishing Machine.

No. 207,717. Patented Sept. 3, 1878.



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2 Sheets—Sheet 2.

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Wood-Polishing Machine.

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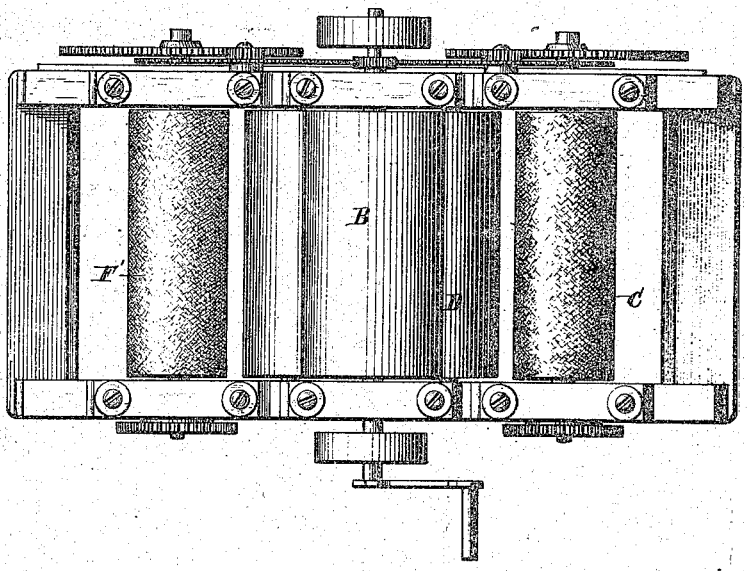
Fig. 2.



Attest.

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UNITED STATES PATENT OFFICE.

JONATHAN CREAGER, OF CINCINNATI, OHIO.

IMPROVEMENT IN WOOD-POLISHING MACHINES.

Specification forming part of Letters Patent No. **207,717**, dated September 3, 1878; application filed July 26, 1878.

To all whom it may concern:

Be it known that I, JONATHAN CREAGER, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Improvement in Wood-Polishing Machines, of which the following is a specification:

My invention relates to a mechanical device for producing a smooth and dense surface upon wooden boards.

My machine comprises among its essential features a suit of feed and delivery rollers, which may be all of hard wood except the upper delivery-roller, which is preferably of rubber; a cylinder of hard wood, glass, bone, ivory, or metal, highly polished on its periphery, and driven at a high speed in a direction contrary to the feed, so as to rub and slick the face of the board; a support and pressure-roller, journaled underneath the slicking-roller, located somewhat on the feed or receiving side of said slicker, and having its journal confined in a slanting housing or guide, and supported on a spring or cushion which is itself adjustable within the guide. The diameter of said supporting-roller and its location relatively to said slicking-roller are such as to bend the stuff convexly upward as it approaches the said slicker.

This temporary camber of the stuff enables the slicker to operate with its best effect in leveling and polishing the board, and so compensates for the contracting action of the slicker as to cause the polished stuff to escape from the apparatus in a straight condition. Moreover, a support and pressure-roller thus guided and capable of yielding in a slanting direction operates to, on the entrance of thicker stuff, automatically recede in a direction contrary to the feed, so as to remove the crown of the camber to a greater distance to one side of the sticker.

In the accompanying drawing, Figure 1 is a longitudinal section of a machine embodying my invention, a board being shown in position. Fig. 2 is a plan of the machine.

A is the frame of the machine, supporting at its mid-length a roller, B, which can be made either of metal, glass, bone, ivory, or hard wood, and if of the former material it may be provided with corrugations, which will facilitate the action of the roller in polishing; but in a machine comprising only one slicker, or the finishing-slicker in a machine possessing more than one, I prefer that the periphery of the slicker be that of a perfectly smooth and polished cylinder.

The lumber is fed in by two rollers, C, of iron or wood, the latter material being preferable for the upper or face roller when the machine is intended to operate on stained lumber.

A roller, D, is placed under the polisher or slicker B in such a position that the board will first be bent slightly upward before passing under the said polishing-roller B, as represented, in order to counteract the tendency of the polishing-roller to warp the board in the opposite direction. For this purpose the center of the roller D is placed a short distance toward the feed end of the machine from the center or vertical plane of the axis of the polishing-roller B.

The journal-boxes of the roller D slide in oblique slots E, inclined at an angle of about twenty-two and one-half degrees to the vertical, so that as the lumber compresses the spring G the roller D will be moved forward a distance proportional to the thickness of the lumber, and by this means provide room for a wider camber, and on the other hand permit a reverse action to take place with thin lumber, so as to bring the convexity of the stuff nearer to the slicker.

Two rollers, F F′, serve to assist the feed-rollers C, and to support the board on the delivery end. The upper roller, F′, may be made of india-rubber, so as not to injure the polished side of the lumber.

All the lower rollers are provided with adjusting-screws H and springs or cushions G.

Suitable gearing is provided on the various rollers to insure their rotation in the directions indicated by the arrows, and at the proper speeds for the respective rollers.

I have found effective, and recommend, a peripheral velocity of the slicker equal to twelve times that of the feed-rollers. The upward stress of the support and pressure-roller is from twenty to one hundred pounds to each inch in width, depending on the condition and material of the stuff.

The effect of the machine on lumber run through it is to compact and level the surface,

so as to make it more durable, more ornamental, and more capable of receiving a high polish, either of oil or varnish, at a far less expenditure of time and material, and with a better result than is possible with stuff which has been merely planed and sandpapered.

I claim as new and of my invention—

1. The combination of hard polishing-cylinder B, yielding supporting-roller D, and suit of feed and delivery rollers C F F', arranged and adapted to operate substantially as and for the purpose set forth.

2. In combination with polishing or slicking cylinder B, the supporting-roller D, whose bearings rest on adjustable springs contained in oblique housings E, located to one side of the vertical plane of the slicker-axis, substantially as and for the purpose designated.

In testimony of which invention I hereunto set my hand.

JONATHAN CREAGER.

Attest:

GEO. H. KNIGHT,

HORACE E. JOHNSON.