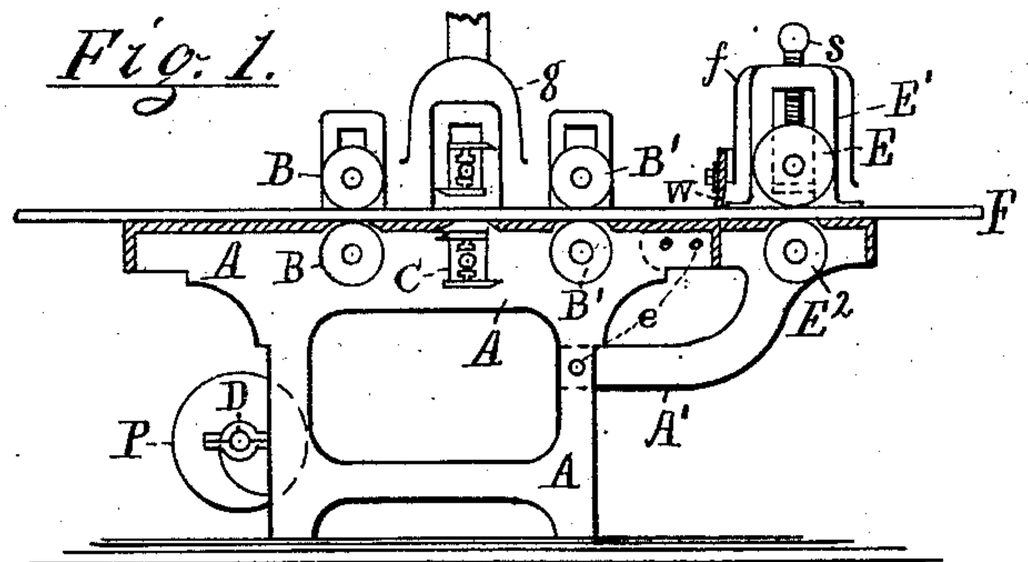
(No Model.)

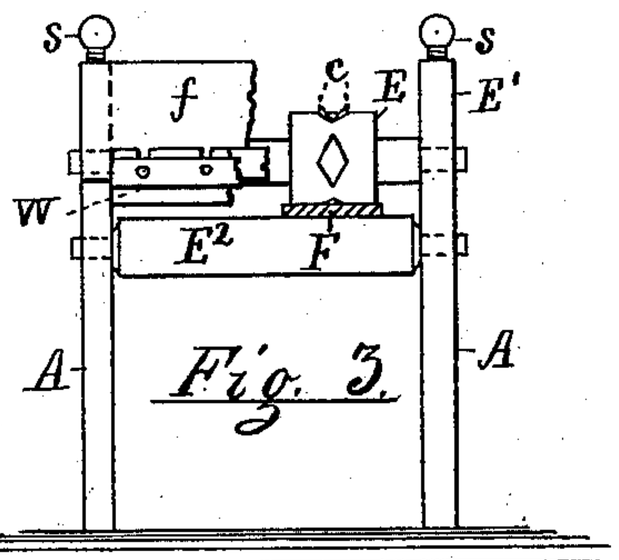
W. A. COMPTON.

WOOD EMBOSSING MACHINE.

No. 367,366. Patented Aug. 2, 1887.

Fig. 1.





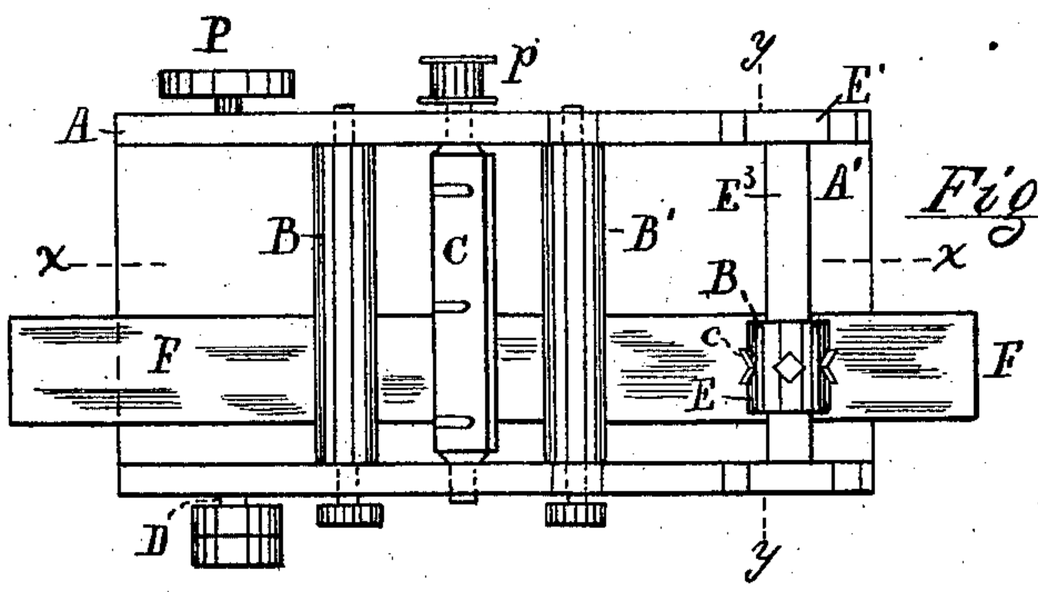


Fig. 2.

Fig. 6

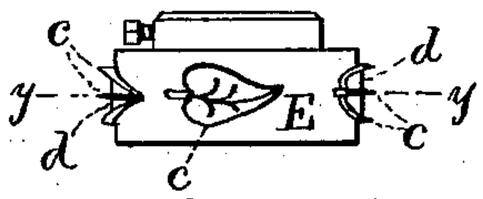


Fig. 7.

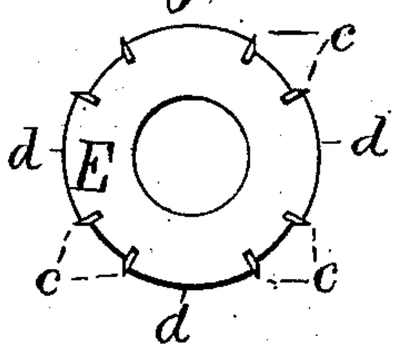


Fig. 4.

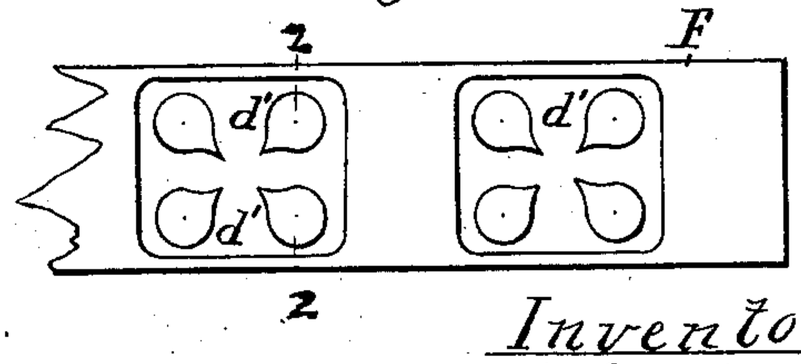
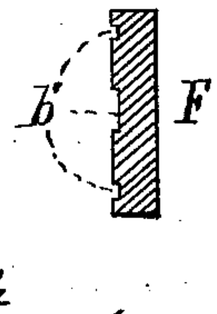


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM A. COMPTON, OF LIBERTY CORNER, NEW JERSEY.

WOOD-EMBOSSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 367,366, dated August 2, 1887.

Application filed February 2, 1884. Renewed October 26, 1886. Serial No. 217,266. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. COMPTON, a citizen of the United States, residing in Liberty Corner, Somerset county, New Jersey, have invented certain new and useful Improvements in Wood-Embossing, fully described and represented in the following specification, and the accompanying drawings, forming a part of the same.

This invention relates to a combined wood planing and embossing machine, the same consisting in the combination, with the rotary cutters, of a rotary wood-embossing roller and an intermediate device for clearing the chips from the planed surface, that they may not interfere with the proper operation of the embossing-tool.

The invention will be understood by reference to the annexed drawings, in which—

Figure 1 is a section on line *x x* in Fig. 2 lengthwise of a wood-planing machine provided with my improvements. Fig. 2 is a plan of the same. Fig. 3 is an elevation of the same, showing the embossing-rollers only. Fig. 4 is a plan of a board thus embossed, and Fig. 5 is a section of the same on line *z z* in Fig. 4. Fig. 6 is a side view of an embossing-roller detached, and Fig. 7 is a section on line *y y* in Fig. 6.

My invention is shown in the annexed drawings as applied to a wood-planing machine to secure the utmost advantage in the economical application of an ornamental impression to the surface of the wood; but it will be obvious that certain parts of my invention are not dependent upon the use of a planing-machine in combination therewith, as the cutting-edges upon the embossing-roller, which I have therefore specifically claimed in my application No. 143,027.

A is the frame of the machine; B B′, the feed-rollers; C, the planing-cutters, of any suitable construction; D, a counter-shaft attached to the frame and provided with the necessary pulleys to operate the other parts, and E an embossing-roll mounted in vertically-adjustable boxes provided with set-screws to press the roller upon the wood with the desired force.

The cutters C and feed-rollers are shown mounted in the usual manner upon the frame of the planing-machine; but the embossing-roll is shown in the drawings mounted upon an extension-piece, A′, secured to the rear end of the planer-frame, that the same may be made long enough to support the embossing devices.

The cutter-spindles are shown provided with pulleys *p*, to be driven by a belt from a pulley, P, upon the shaft D; but the gearing to drive the feed-rollers is not shown, as the same constitutes no part of my invention and may be arranged in any well-known manner. The set-screws *s* (shown in the housings E′ applied to the embossing-roller) may be replaced with weighted levers, if desired, such as are commonly used with the feed-rollers.

The embossing-roller is not provided with any driving mechanism, as it is preferably rotated by the friction of the board F as the latter is delivered from the feed-rollers of the planing-machine. To carry the boards to it after they have passed the ordinary feeding-rollers, B, I have shown another pair of rollers between the cutters and the embossing-roll, as at B′; but these latter feed-rollers may be dispensed with when the boards are fed to the cutters continuously, as each board then pushes the preceding one through.

To produce a clean impression of the raised embossing surfaces, I provide projecting cutting-edges around the margin of any figure in the embossed pattern, whereby the fibers of the wood are cut loose from the adjacent parts of the surface, so that the material, either inside or outside of such cut fibers, may be sunk to the desired level without the tearing of any of the substance of the wood. Such a construction enables me to operate successfully upon the flat surface of boards or upon the faces of worked moldings, whereas the pressure of any kind of die without my cutting projections almost inevitably tends to split and roughen the surface adjacent to the depressed parts when operating across the grain, as in the cases referred to.

The rollers are shown upon a larger scale in Figs. 6 and 7, *c c* representing the projecting cutting-edges, and *d d* the raised parts of the roller intended to depress specified parts of the surface when cut around by the cutters. As such cutters have a greater radius than the surfaces *c* or *d*, they penetrate the wood first, thus making the operation of embossing with such tool a progressive process, the fibers at

the margin of a given design being first cut through and the tool operating to press upon such cut surface afterward. In Figs. 4 and 5 is shown the effect of such a tool, the parts *d'* being depressed below the general surface of the board and the margin and inscribed figures being in relief.

By applying the embossing-roller directly to a planing-machine I am enable to ornament the surface of boards or moldings without any appreciable expense. To accomplish this it is necessary in many instances to make an extension to the planer-bed, as at A' in Fig. 1, and to provide some means—as the wiper shown at W—for cleaning off the surface of the board or molding before embossing it.

The extension A' is shown bolted to the frame at the rear end at *e e*, with the roller E mounted upon it to receive the boards directly from the cutter C or rolls B'. A hood, *f*, is fitted to the housings E' to inclose the roll E, and a wiper, W, is secured adjustably to the front edge of the same, so as to press upon the upper surface of the board and clear off the dust and chips before it passes to the embossing-roller.

If preferred, a rotary brush may be substituted for the roller B' and rotated quickly to clean the board as it passes from the cutter C.

An exhaust-hood, *g*, is shown applied to the cutter C in Fig. 1, as is common in many planing-shops, and the greater part of the shavings being thus removed the function of the cleaner is chiefly to remove the dust and stray chips from the board or molding, that such foreign substances may not be forced into the embossed impression. The hood *f* may be made adjustable on the housings E', to suit planks of different thicknesses, or the wiper W may be slotted and secured adjustably to the hood, as shown at Fig. 3 at the left side, the hood being broken away at the right side to expose the roller E. The roller may be made in sections and secured on a mandrel, E^3, as shown in Figs. 2 and 3, that it may be moved to any part of the mandrel, as in other embossing-machines. It is obvious that the extension-piece A' is chiefly useful in combining the embossing-roller with planing-machines having a frame too short to directly support the housings E', and that the combination of the said roller with the other parts claimed herein is entirely independent of the use of cutting-edges upon the roller, as the latter form a separate invention and have been thus claimed by me.

The extension A' consists, essentially, in pieces bolted to the frame of the machine, to which the roller is to be applied in such manner as to form a continuation of the wood-supporting table, (shown by hatched lines in the section at Fig. 1,) and provided with the housings E', and with a pressure or anti-friction roll to hold the board or wood against the roller E, as shown in Fig. 1, beneath the roller E.

The embossing-roller may be driven by gearing connected with the feed-rollers in any case where it is desirable to give it a positive motion in lieu of the rotation by contact with the planed board.

Having thus described my invention, I claim herein the combination of the embossing-roller with the planing-machine by means of the intermediate cleaning device, and also by means of the extension-piece A', as follows:

1. The combination, in an organized machine, of a mechanism for planing wood, as the cutter C, a mechanism for cleaning the wood, as the wiper W, and a rotary embossing device, as the roller E, the whole arranged and operated substantially as set forth.

2. The combination, with the frame and cutter of a wood-planing machine, of the extension A', carrying the housings E' and embossing-roller E, and the mechanism for cleaning the wood, as the wiper W, interposed between the cutter and embossing-roller, substantially as herein shown and described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM A. COMPTON.

Witnesses:
THOS. S. CRANE,
C. C. HERRICK.