A. B. TRIPLER.

Machine for Imitating the Grain of Wood.

No. 214,970. Patented April 29, 1879.

Fig. 1.

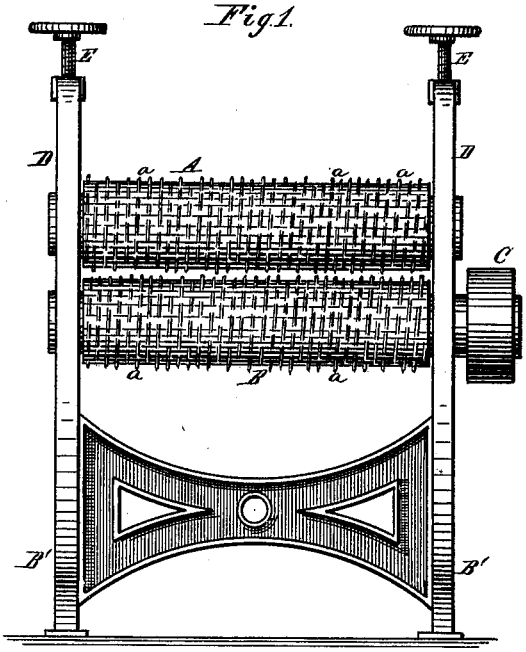


Fig. 2.

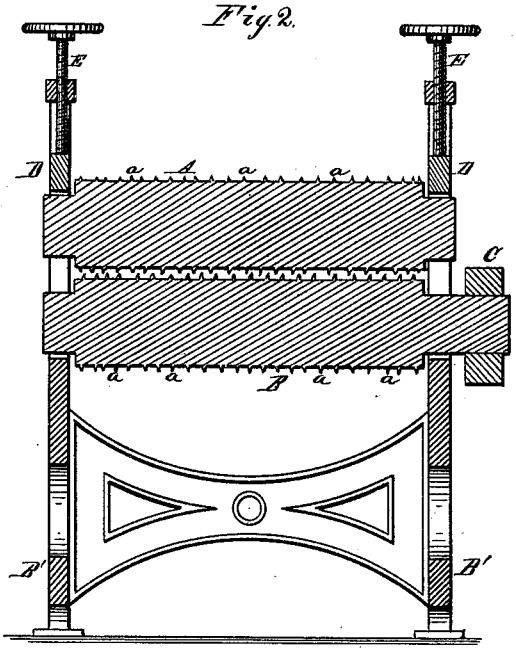


Fig. 3.

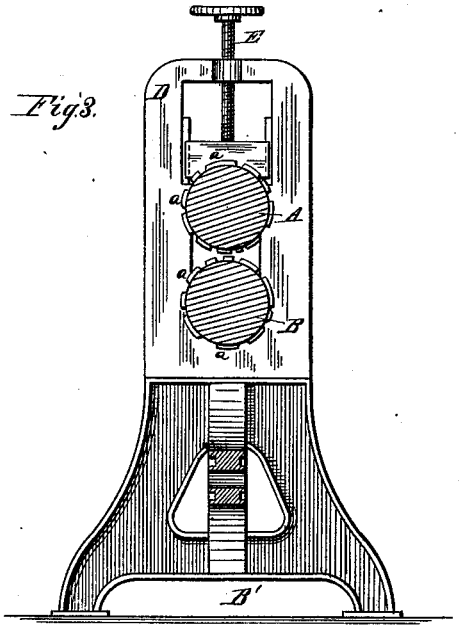
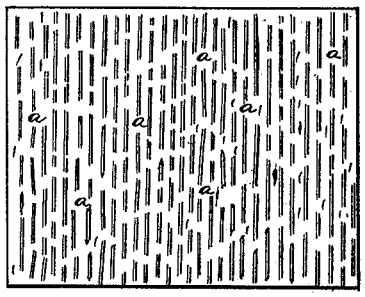


Fig. 4.



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UNITED STATES PATENT OFFICE.

ARCHIBALD B. TRIPLER, OF NEW YORK, N. Y.

IMPROVEMENT IN MACHINES FOR IMITATING THE GRAIN OF WOOD.

Specification forming part of Letters Patent No. **214,970**, dated April 29, 1879; application filed February 1, 1879.

To all whom it may concern:

Be it known that I, ARCHIBALD B. TRIPLER, of New York city, county of New York, and State of New York, have invented certain new and useful Improvements in Processes and Machines for Imitating the Grain of Wood, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 is a front elevation of a machine constructed in accordance with my improvements and intended to illustrate the principles of my invention. Fig. 2 is a sectional view upon a plane through the axes of the cylinders, and Fig. 3 a sectional view upon a plane perpendicular to such axes. Fig. 4 is a plan of the surface of one of the cylinders developed.

Like letters in all the figures indicate corresponding parts.

The object of my invention is to produce an accurate imitation of the grain of natural wood upon the surface of woods of a different or cheaper quality or variety; and to accomplish this the invention consists in a method of cutting the cheaper wood or base, and in a peculiar form of cutter-roller, all of which will be hereinafter first fully described, and then pointed out in the claims.

Heretofore, and previous to my invention, in order to imitate natural woods using cheaper varieties of wood as a base, it has been customary to simply paint or print the base in imitation of the surface-graining upon the woods desired to be imitated, or to slightly indent the mere surface of the wood after the manner of embossing-machines. This affords only an imitation, which can be detected readily by an ordinary observer, and, moreover, fails to give the same effect upon the eye as does the natural wood, wherein the grain is produced by the cutting through of some of the cellular portions of the wood.

To obviate all these imperfections and to more closely imitate the natural products, my method consists, essentially, in cutting out, tearing out, or otherwise actually removing some of the material of the base along those lines or parts of lines where the grain of the wood to be imitated would naturally appear.

In many varieties of wood the cells are naturally quite straight and nearly parallel with the axis of the tree, and in others the cells are more or less tortuous, giving in the one case a cut or board surface in which the graining appears in long lines seldom broken, and in the other very irregular and frequently broken lines of varying depths and widths.

In the machine which I employ for cutting the imitation of the grain in the surface of the base there are preferably two cylinders, A and B, each provided with a series of elevations or cutting projections, so that both sides of a board may be operated upon at the same time, thus economizing in both labor and time of handling, though for many purposes it will be sufficient to grain only one side of the board, in which event one of the cylinders may be omitted.

The cylinders should be made of very hard metal—such, for instance, as steel—so that they will last a long time, and the cutting projections or teeth thereof are formed preferably by cutting away or otherwise removing the surrounding surface of the cylinder.

The teeth or cutters are represented at *a a*, &c., and they are arranged differently, of course, for the different varieties of imitations desired.

It is very seldom that the grain will run accurately in the direction of the length of the board, and therefore the cutting projections upon the surface of the cylinders are placed at a slight angle with respect to the axes of the cylinders, greater or less, according to the cut desired to be made, and these teeth or cutters are made short or long, accordingly as a short or long grain is to be produced. When the board or base is fed in between the revolving cylinders it will be scraped, torn, or cut away in a manner easily understood.

If it be desired to imitate some of the varieties of the softer woods—as, for instance, Spanish cedar—wherein the grain is a little ragged and very irregular, some advantage may be derived from running the two cylinders at different velocities, or, if at the same velocity, then by running them more or less rapidly than the feeding in of the board. In this way the cutting-teeth can be made to tear out the material slightly, producing thereby a

more perfect imitation of the natural grain; and this variation in the motion of the two cylinders and their velocity with respect to the feed can be easily attained, since, as will be observed, the cylinders are not geared together. The depth of the grain is regulated, of course, by the height of the cutters above the surface of the cylinders, some of the cutters being made of one height and some of another, the arrangement being such as to produce the desired effect.

The axes of the two independent cylinders are mounted in suitable boxes carried or supported by the frame or uprights D D. The machine is mounted upon any suitable base, B′, and one of the cylinders, A, is provided with a band-wheel or hand-crank, C. The remaining cylinder may also have a similar crank or band-wheel; but for ordinary uses one will be found sufficient.

One set of the cylinder-boxes is made adjustable by use of the ordinary screw-follower E, so that boards of varying thicknesses may be passed between the two cylinders, or, if only one cylinder be used, then between it and the bed-plate of the machine. A spring might be advantageously employed between the axes of the two cylinders, if desired, so that the surfaces will not touch each other, and so that they will remain sufficiently removed from each other to permit the easy insertion of the end of the board or base which is to be operated upon.

The invention is specially applicable to the imitation of such woods as the before-mentioned Spanish cedar, though, of course, it will be readily understood that any variety of wood may be imitated in a similar manner.

To determine the size, location, and arrangement of the cutting projections upon the surface of the cylinders which may be necessary or most advantageous for use in producing an imitation of any particular piece of wood, it will be only necessary to take a negative cast from the piece, and from this negative to produce an imitation thereof upon the cylinders.

The machinery necessary to carry out the invention is easily made, is very simple and cheap, and it is found in actual practice to operate very satisfactorily.

To complete the imitation, I prefer to stain or color the artificially-grained wood or base in accordance with some one of my previously-patented processes; but any suitable process for coloring may, of course, be adopted, since the particular process is no essential part of the previous operation of cutting the grain.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The method or process of imitating the graining of natural woods herein described—that is to say, cutting or tearing or otherwise actually removing the material of the surface of the base in lines of varying depths, widths, and lengths, and in varying directions, to correspond with the natural graining, all substantially as herein set forth.

2. The herein-described cylinder for cutting or removing the material of wood in imitation of the natural graining, said cylinder being provided with a series of cutting projections upon its surface, of varying widths, heights, lengths, and directions, and being suitably mounted and provided with a band-wheel or equivalent crank, by which it may be turned with varying velocities, substantially as and for the purposes herein set forth.

3. In a machine for cutting or removing the material of wood in imitation of the natural graining, the combination of the two independently-moving cylinders A and B, each being provided with a series of cutting or tearing projections upon their surfaces, of varying widths, heights, lengths, and directions, said cylinders being adjustably mounted, and capable of being turned, substantially as explained, the whole being arranged substantially as shown, so as to accommodate boards of varying thicknesses, and so as to operate upon both sides of the board at the same time, for the purposes and objects named.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of two witnesses.

ARCHD. B. TRIPLER.

Witnesses:
S. W. HOLCOMB,
WORTH OSGOOD.