G. PELSTRING.

Graining-Machine.

No. 204,078. Patented May 21, 1878.

Fig. 1.

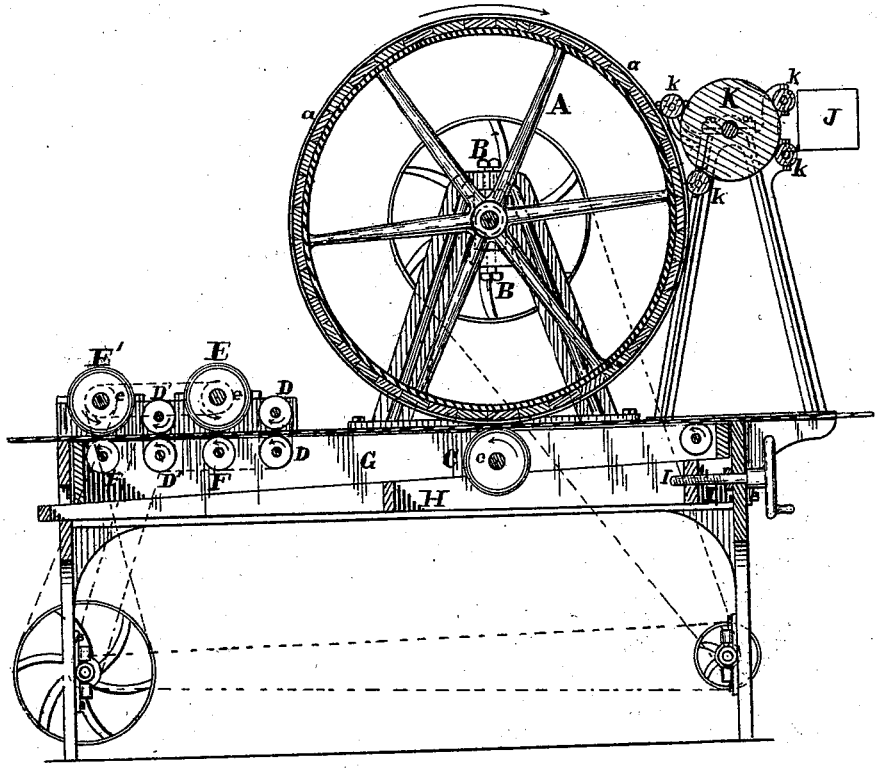
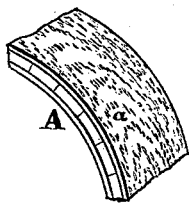


Fig. 2.



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UNITED STATES PATENT OFFICE.

GEORGE PELSTRING, OF CINCINNATI, OHIO.

IMPROVEMENT IN GRAINING-MACHINES.

Specification forming part of Letters Patent No. **204,078**, dated May 21, 1878; application filed April 20, 1878.

To all whom it may concern:

Be it known that I, GEORGE PELSTRING, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Graining-Machine, of which the following is a specification:

My invention has for its object the imitation of the grain of the more valuable woods on the surface of some of the cheaper kinds, as, for instance, the grain of cedar on poplar wood.

The device consists, essentially, of a revolving drum having on its peripheral face an electrotyped or engraved plate, which, having suitable raised parts corresponding to the indentations of the grain of the wood to be imitated, serves to impress in any board passed under it the exact imitation of the desired grain, said raised surfaces being inked with a suitable composition by rollers placed near the top of the drum, and the drum having immediately below it an idler covered with some yielding substance, to support the wood to be treated, and yet allow of its yielding to any inequalities in the wood, so as to prevent injury to the design on the plate.

It further consists of a system of feed, polishing, and filling rollers, which latter, by rotating in a reverse direction to the former, operate to smooth out any irregularities and to partially fill the artificial indentations with a mixture of glue, paste, and varnish previously spread over the board to be grained.

In the accompanying drawing, Figure 1 represents a longitudinal section of my machine, and Fig. 2 a perspective view of a part of the face of the graining-drum.

A is the graining-drum, which is of such dimensions as to insure sufficient variety of grain and be operated with any desired width of board. On the face of this drum there is an electrotyped or engraved plate, *a*, the exact counterpart of the grain of the wood desired to be imitated. The drum can be adjusted to any desired depth of grain by means of set-screws B B′.

Immediately below the drum A is an idler, C, constructed of a cylinder of wood, *c*, surrounded by canvas, leather, or other suitable somewhat elastic substance, in order that it may give way to any irregularity in the wood, which might otherwise injure the electrotyped plate.

D D and D′ D′ are feed-rollers of iron or steel, which move in unison with the drum A. Immediately following each of these sets of feed-rollers is a roller, E E′, similar in construction to the idler C, and made to rotate at a high speed in a contrary direction to the feed-rollers. Immediately under each of these rollers E E′ is a roller, F, which acts as a bed.

All the lower rollers F F, D D′, and C are journaled in a frame, G. This frame is capable of vertical motion, and is inclined on its lower surfaces, and rests on a corresponding inclined surface on the frame H, which may be adjusted horizontally by means of screw I. By this arrangement the frame G, and consequently all the lower or bed rollers, may be set to any desired height to accommodate different thicknesses of lumber.

The tank J contains a suitable dye, generally of somewhat darker shade than the dye with which the wood is stained. From a tank the die is imparted to the electrotyped or engraved plate *a* by means of rollers K *k*, in the same manner as the ink is delivered to the type in a printing-press.

In operation, the lumber, after being properly stained the desired color and coated with a mixture of glue, paste, and varnish, is then passed between the drum A and roller C with its stained side up, and becomes impressed on its stained side with numerous small indentations by means of the electrotyped or engraved plate *a*, which may be so engraved as to represent the grain of any desired wood. The dye on the plate *a* gives the indentations the natural dark appearance.

The board next passes between feed-rollers D D, and then under the roller E, which acts as a polisher and filler, it being necessary to partially fill the indentations in order to more fully imitate the natural grain.

Both the rollers E and E′ operate to fill the grain with the mixture of glue, paste, and varnish spread over the surface of the board; but the latter more particularly serves to give a proper finish to the lumber.

If desired, the machine may be used in direct connection with a planing-machine.

The operative rollers may, of course, be duplicated or triplicated on the upper side of the stuff for the production of more varied or more complicated grain effects, or may be duplicated below the stuff for operating simultaneously on both sides of the same, if desired.

I claim as new and of my invention—

1. In a graining-machine, the drum A, having on its peripheral face an electrotyped or engraved plate, *a*, the exact counterpart of the grain of some particular kind of wood, the rollers K *k* near the upper part of said drum for supplying the composition to the plate, and the idler C beneath the drum, for supporting the wood to be grained, substantially as set forth.

2. The series of bed-rollers F F, feed and polishing and filling rollers D D, D′ D′, and E E′, the latter rotating in the contrary direction to the former, and being composed of a cylinder, *e*, surrounded with canvas, leather, or other similar material, as and for the purpose set forth.

3. In combination with the drum A and engraved plate *a*, the feed-rollers D D and D′ D′, polishing and filling rollers E E′, and bed-rollers F F′, as and for the purpose specified.

In testimony of which invention I hereunto set my hand.

GEO. PELSTRING.

Attest:

WALTER KNIGHT,

L. H. BOND.