3 Sheets—Sheet 1.

J. THORNTON & J. THALLON.

PROCESS OF INLAYING WOOD.

No. 186,180. Patented Jan. 9, 1877.

Fig. 1

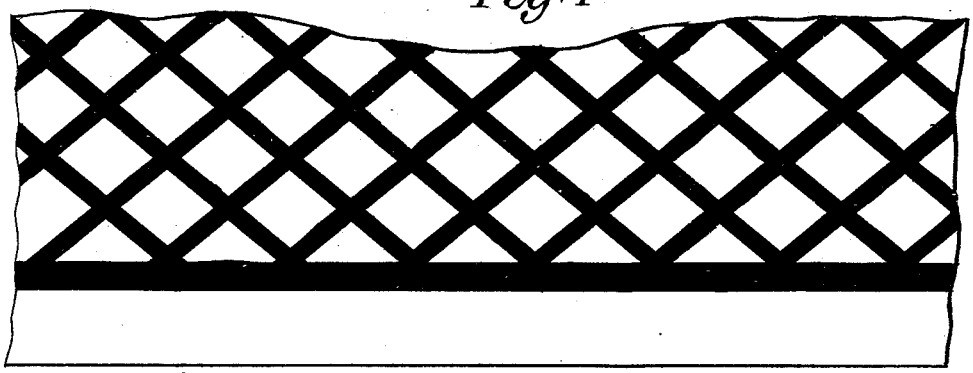


Fig. 2

Fig. 3.

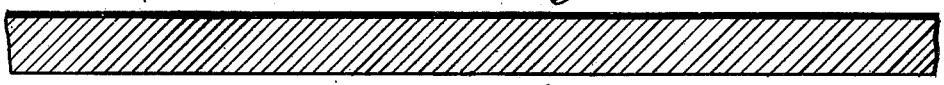


Fig. 4.

Fig. 5.

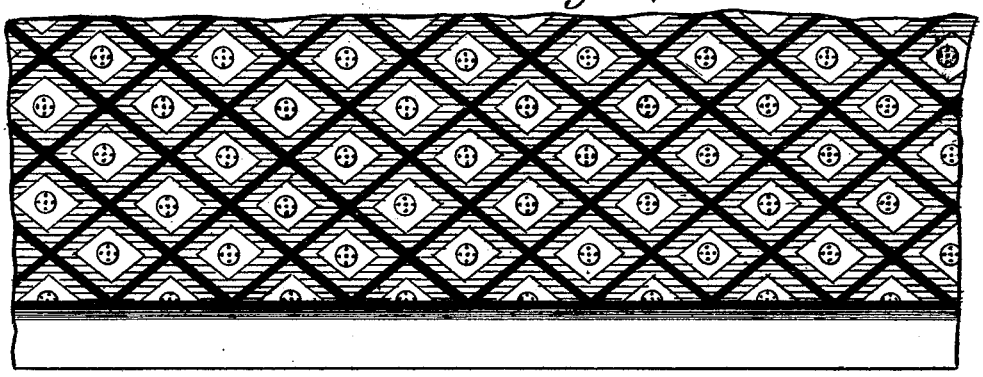


Fig. 6.

Fig. 7.

Witnesses:
Michael Ryan
Fred. Haynes

James Thornton
James Thallon
by their Attorneys
Brown & Allen

3 Sheets—Sheet 2.

J. THORNTON & J. THALLON.

PROCESS OF INLAYING WOOD.

No. 186,180. Patented Jan. 9, 1877.

Fig. 8

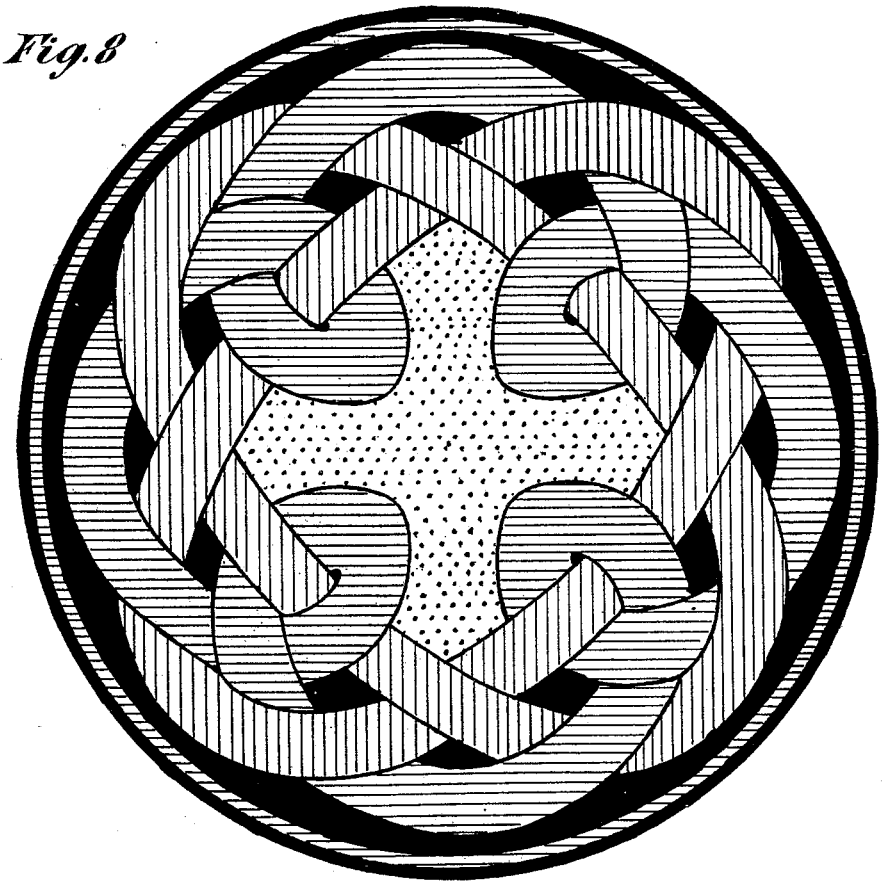


Fig. 9.

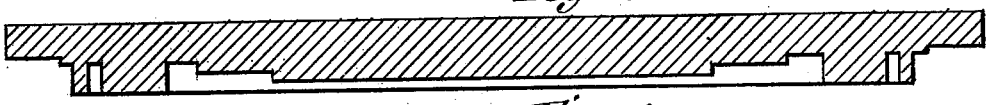


Fig. 10.

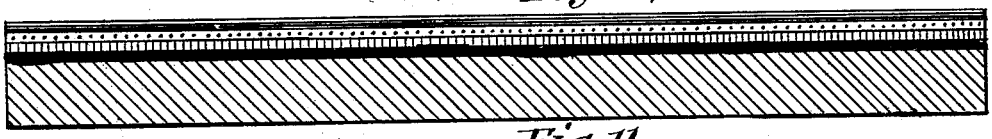
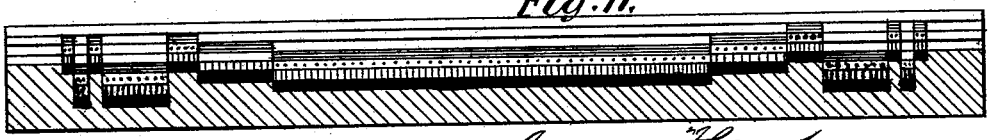


Fig. 11.



Witnesses:
Michael Ryan
Jno. T. Harney

James Thornton
James Thallon
by their Attorneys
Brown & Allen

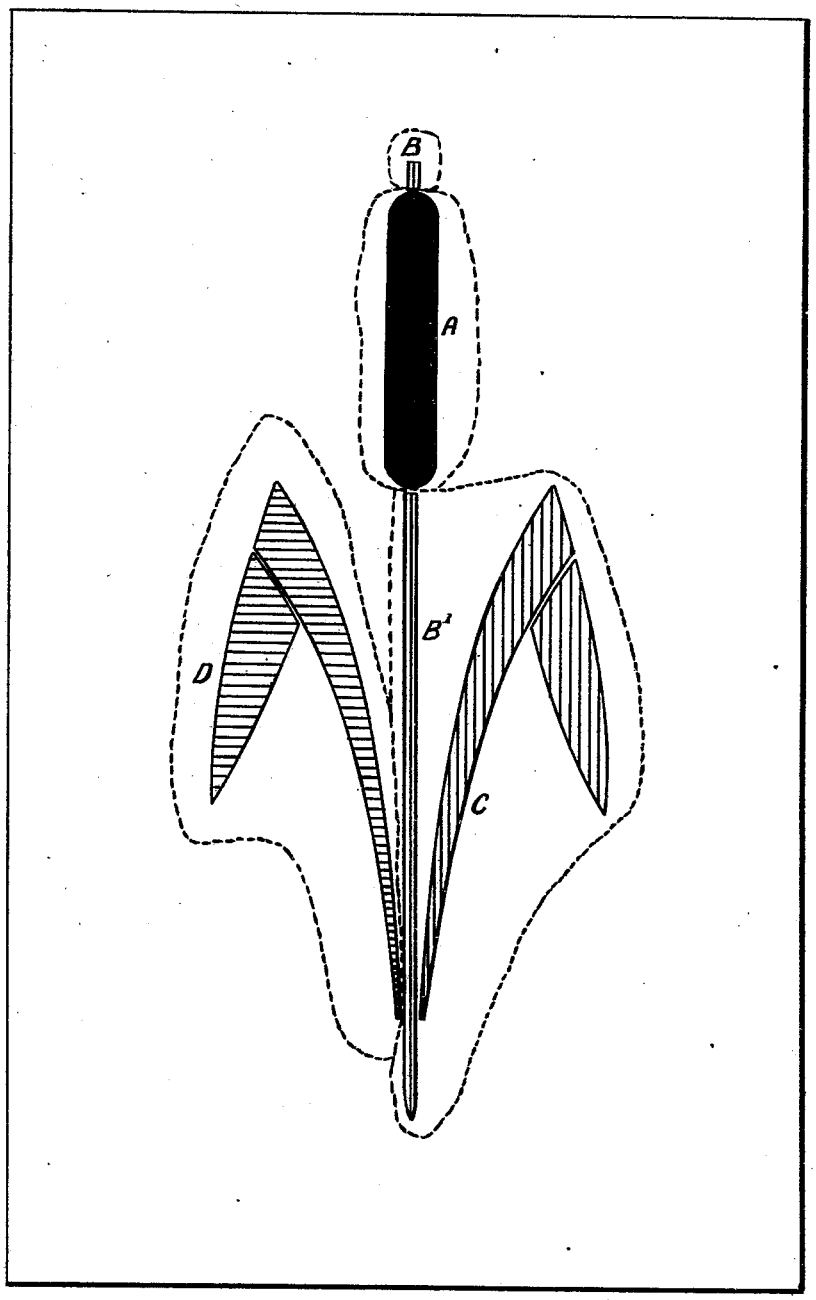
3 Sheets—Sheet 3.

J. THORNTON & J. THALLON.

PROCESS OF INLAYING WOOD.

No. 186,180. Patented Jan. 9, 1877.

FIG. 12.



Witnesses:
Michael Ryan
Fred. Hayney

James Thornton
James Thallon
by their Attorneys
Brown & Allen

UNITED STATES PATENT OFFICE.

JAMES THORNTON, OF CROWNDALE ROAD, CAMDEN TOWN, AND JAMES THALLON, OF LONGFORD STREET, REGENT'S PARK, ASSIGNORS TO GEORGE HOWARD, OF BERNER'S STREET, OXFORD STREET, MIDDLESEX COUNTY, ENGLAND.

IMPROVEMENT IN THE PROCESSES OF INLAYING WOOD.

Specification forming part of Letters Patent No. **186,180**, dated January 9, 1877; application filed December 30, 1875.

To all whom it may concern:

Be it known that we, JAMES THORNTON, of Crowndale Road, Camden Town, and JAMES THALLON, of Longford street, Regent's Park, both in the county of Middlesex, England, have invented an Improved Process of Inlaying Wood, of which the following is a specification:

This invention relates to a novel process of inlaying woods with colored woods and equivalent ornamental substances for the production of parquetry and marquetry work, whereby a great economy will be obtained, the work of mechanical pressure being substituted for operative skill.

In carrying out our invention we may use the pressure of rollers or of hydraulic or other presses, according to the nature of the design intended to be reproduced, the same being provided with or acting upon rigid surfaces, which are the counterpart of the pattern or design, or a portion thereof, which it is intended to apply to the surface required to be ornamented.

We propose by our invention to produce patterns in one, two, or more colors suitable for floors and walls, and also to ornament furniture and other cabinet-work with colored woods, ivory, horn, or other ornamental materials.

The invention consists, substantially, in applying to the surface of the wood to be ornamented a veneer, or two or more overlying veneers, and then, by means of mechanical pressure, bringing down a roller or die or dies upon such overlying veneer or veneers with a force sufficient to drive the portions of the veneers underlying the raised surfaces of the roller, die, or dies into the backing-wood to such depth or depths as will insure the portions of the veneers that are to compose the pattern being brought to a level with the surface of the backing-wood. When this is effected the superfluous overlying veneer is to be removed, and the inlaid patern will then be exposed to view, the bed or backing forming the ground of the design.

In the accompanying drawings, Figure 1 shows a simple parquetry pattern, suitable for floors and walls, and Fig. 2 is a section of the same. This pattern may be formed by the aid either of a flat die or plate or of an engraved roller, as thought most desirable. The wood backing, whether consisting of oak or other ordinary wood, is overlaid by a veneer, as shown in the section, Fig. 3, the color of the veneer being determined by the taste of the designer, a good contrast to the backing-wood being most desirable.

The veneer is, by preference, to be attached to the backing by means of glue or other suitable adhesive material, preference being given to that cement which will not soften by the application of moisture, and the thickness of the veneer will be determined by the use to which the inlaid wood is to be applied. For flooring purposes a veneer of about one-eighth of an inch in thickness may be advantageously used; but for furniture or wall decorations a veneer of about one-thirtieth of an inch in thickness will in general suffice. The height of the raised pattern-surfaces of the die or the engraved roller used must correspond with the thickness of the veneer employed; and the pressure used should be such as to insure these raised surfaces entering to their full depth into the veneered wood. Thus, supposing a piece of veneered wood, such as that shown at Fig. 3, to be submitted to the pressure of a flat die or of a roller furnished with the pattern shown at Fig. 1, portions of the overlying veneer, corresponding to the pattern of the die or roller, will be forced to their full depth into the backing-wood, as shown at Fig. 4. It only now remains to remove the superfluous veneer by planing or otherwise, and the inlaid backing will then present a smooth even surface.

When it is desired to obtain an intricate inlaid pattern in two or three colors, the backing, which will in general form the ground color, is to be overlaid by a corresponding number of veneers of different colors. Fig. 5 shows a pattern worked out in three colors, and Fig. 6 a section of a piece of backing-wood covered with three layers of veneers, of colors

corresponding with the pattern desired to be reproduced. In this case the die or roller used for effecting the inlaying will have the several portions composing the pattern which it carries arranged at various heights corresponding to the various positions of the differently-colored veneers relatively to the backing. By the acting-surface of the die being thus stepped, some parts of the inlaying will be produced by forcing down portions of the veneers to a depth that will bring the uppermost veneer to a level with the mean surface of the backing.

Again, other portions of the veneer will be forced down to bring the second veneer on a level with the backing, and other portions of the inlaying will be formed by the depression of that veneer which lies next to the backing to the surface-level of the backing. This is clearly illustrated in the sectional view, Fig. 7. By submitting a slab of backing thus inlaid to the action of a planing-machine, the superfluous veneer may be readily removed, and a smooth even surface will result from this operation, and the pattern will appear as indicated at Fig. 5.

Fig. 8 shows an interlaced design produced in four colors, and suitable as a central design for marquetry work. The raised surfaces of the pattern-die will, as before explained, correspond in height with the thickness of the veneers employed, their arrangement being such as to insure the reproduction of the various parts of the patterns in the correspondingly-colored veneers.

Fig. 9 shows in section the die used for reproducing the pattern.

Fig. 10 shows in section the veneered wood intended to be impressed, and Fig. 11 shows the same after it has been impressed.

It should be remarked that, instead of employing dies, as above described, it may be convenient, where simple detached patterns are required, to employ a kind of stencil-plate of corresponding thickness to that of the veneer intended to be inlaid, and to place the same in position over the veneer preparatory to submitting it to the action of the press. The stencil-plate will then serve to impress the wood in the same manner as an engraved die; or, instead of the plates being used loose, they may be attached to the follower of the press or to the face of the pressing-roller, and they will thus form cheap and efficient dies.

As a modification of the mode of applying the veneers, when two, three, or more colors are required to be inlaid, to produce a simple detached pattern, we sometimes arrange pieces of differently-colored veneers side by side on the backing at one and the same level. When the veneers are thus arranged, a stepped die will not be required to produce the inlaying in different-colored woods.

Fig. 12 shows a conventional floral device produced after the manner just described, the flower A being formed from a piece of veneer indicated by the dotted lines that circumscribe it, and the stem B B′ and leaves C and D being severally produced from veneers indicated by the dotted lines which circumscribe them.

Having now explained the nature of our invention, we wish it to understood that we claim—

The process of inlaying wood, consisting essentially of displacing, by compression, a wooden backing at points in the surface of the latter according to the design to be produced, by pressing into such wood backing one or more veneers by means of a die or roller having the design in elevation corresponding to the thickness of the overlying veneer or veneers, and then removing the superfluous veneer or veneers not embedded in the wood, substantially as described.

Dated the 25th day of November, 1875.

JAMES THORNTON.
JAMES THALLON.

Witnesses:
H. K. WHITE,
A. S. BISHOP,
66 *Chancery Lane, London.*