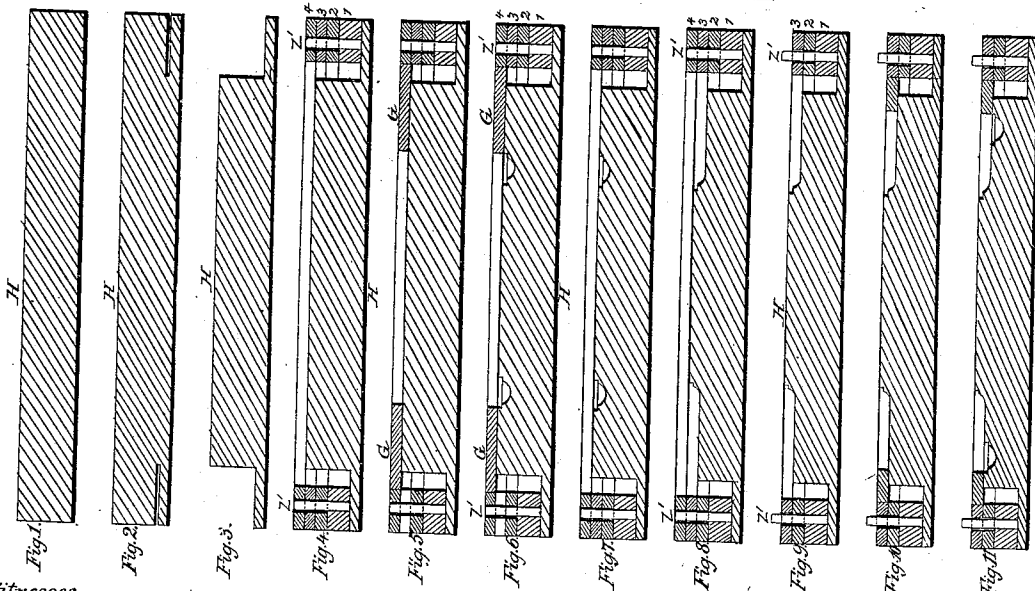
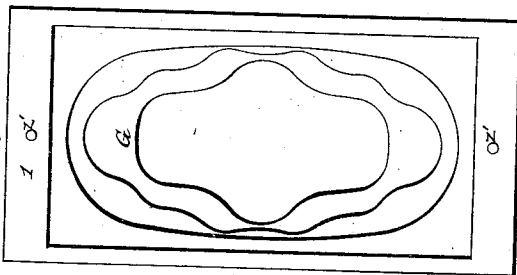
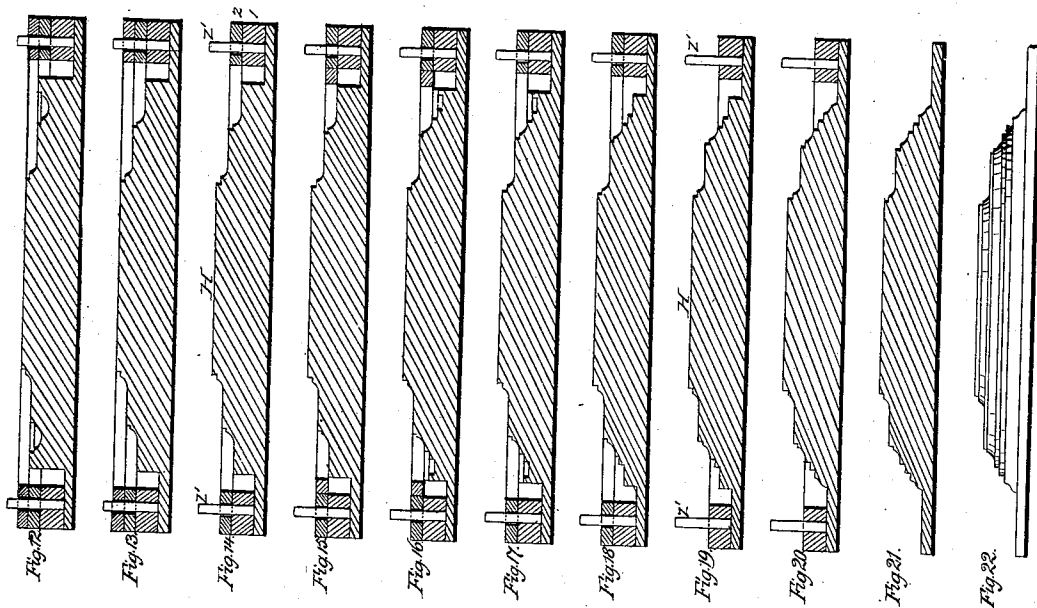


N. JENKINS.
Wood Carving.

No. 99,201.

Patented Jan'y 25, 1870.



Witnesses
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NICHOLAS JENKINS, OF NEW YORK, N. Y.

Letters Patent No. 99,201, dated January 25, 1870; antedated January 14, 1870.

IMPROVEMENT IN METHOD OF WOOD-WORKING.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, NICHOLAS JENKINS, of the city and county of New York, in the State of New York, have invented a certain new and useful Method of Producing Ornamental Panels for Front Doors, and analogous work in wood; and I do hereby declare that the following is a full and exact description thereof.

I employ a machine like or analogous to that described in my patent, dated August 6, 1867. I repeat the operation two or more times, using different patterns in succession, inside of what I term chasés, and by reason of the chasés having plain rectangular figures, they may be easily produced, and the patterns easily fitted therein, and by reason of the entire pattern being removed, after each groove or channel is cut, I am able to rout off the surface outside of each groove, and to lay the next pattern on the new plane or surface thus produced, and thus to produce swelled work of any required pattern.

My method requires only a very moderate degree of skill in the operator, to produce very richly ornamental surfaces rapidly, and with mathematical correctness. I prefer to employ improved mechanism, for which I have prepared an application for patent, on which the oath was executed October 20, 1868, but such improvements are not essential to the success of this method of operating. I will describe it as carried out by the aid of the machine described in my patent of 1867, aforesaid.

The accompanying drawings form a part of this specification, and similar letters of reference indicate corresponding parts.

Figure 1 is an edge view of a plain piece of wood, of which I form my panel.

Figure 2 represents the same after it has been sawed into from the edge.

Figure 3, the same after it has been sawed into from the face, and after the pieces thus liberated have been removed. It will be understood that at this stage of the work there is a deep and broad rebate extending quite around the panel, on the face side.

Figure 4 represents the same, after a series of chasés have been laid into said rebate.

These chasés are plain rectangular frames, of iron or other suitable material, all of equal size. The lowermost, marked 1, is retained in position on the wood below by the aid of points Z, which project from its under surface, and prick in the wood. These points are represented larger than are necessary in practice.

The upper chasés are held in their proper positions on the lowermost by the aid of pins Z', which project up from the lowermost chase, and are received into holes in the chasés above, numbered successively upward. The set of chasés is firmly compressed together by the aid of clamps on the machine, not represented.

The upper chase, 4, lies above the face of the wood block H. I press down into the rectangular space within the upper chase, a pattern, G, fitting tightly within the interior of the chase. This pattern is cut out in and near the centre, according to some ornamental or tasteful figure. This condition is represented in Figure 5.

The parts being properly mounted on the movable table of the machine, the cutter of the machine is lowered in the said opening in the pattern, and by moving the table with the patterns and wood, as described in my former patent, the cutter is caused to traverse around the interior of the pattern, and to excavate a corresponding wavy or otherwise ornamental channel in face of the block H below. This condition is represented in Figure 6.

I now remove the pattern. This is represented in Figure 7.

I now traverse the cutter over the whole surface, outside of the channel before produced. In other words, I cut off or "rout" the wood down to the level of the bottom of the channel. This leaves the figure enclosed within the channel, in relief in the centre of the panel, and leaves all the space outside of the channel, plane, and ready to receive further ornamentations. This condition is shown in Figure 8.

I now remove the upper chase 4. This condition is shown in Figure 9.

I now apply a pattern within the chase 3, below. This pattern, having a larger central opening than that last applied, fits down upon the plane surface produced by the routing-operation. In other words, it rests on that surface the same as if the whole face was equally plane, the swelled part left by the previous operation standing unaffected in the opening of the pattern. This condition is shown in Figure 10.

I now lower the cutting-arbor, changing the cutter, if necessary, to produce a different ornamental channel, and move the wood, with the pattern and chasés, laterally and longitudinally, so as to traverse the cutter smoothly around within this pattern. This completed, and the cutter again lifted, there is a second groove or channel, having the desired form and relation, exterior to the groove or channel first produced. This condition of the parts is represented in Figure 11.

I now remove the second pattern. This condition is shown in Figure 12.

I now rout off the wood outside of the channel, as in Figure 13, again open the clamps, and remove the top chase, as in Figure 14, again introduce a pattern, having a larger opening, as in Figure 15, and again produce a groove or channel, outside of the last, as in Figure 16.

I repeat the operation in this manner, until all the patterns have been successively used. Each forms a channel outside of that previously made, and after each is

formed, the exterior wood is routed down to the level of the bottom of the channel. By having two cutters revolving in opposite directions, and using one or the other, according as the grain of the wood requires, a higher degree of smoothness in the carving may be obtained; but I have produced very satisfactory work with a single cutting-arbor.

When the whole is completed, (the number of operations in this manner depending on the number of patterns and chases employed,) the panel is completed, and the wood is routed down to the level of the sawkerf first made. The panel is now ready for sandpapering, oiling, varnishing, or other treatment, or to be used immediately, without further treatment, in the door, bureau-front, church, cabin, organ, or other decoration, as may be desired.

Instead of removing each chase, and lowering the cutting-arbor, and the successive patterns, as above described, I can, if preferred, leave the chases all tightly held in the clamps, and can effect analogous changes by removing the patterns and routing off, as desired, blowing or otherwise removing the chips from the enclosing wall of chases, which thus remains, and holding at the same level the successive patterns, and using cutters longer and longer, to reach down as the work proceeds. This last-described mode of operation is preferable, for some reasons, in doing shallow work. In such case, I can employ small turning stops or buttons, to hold up the several patterns in the plane of the upper chase, as will be usually preferable.

I find that very long cutters are liable to tremble, and to make the work defective. I prefer, therefore, to employ a thick and stiff cutting-arbor, with a short, stout cutter. Practice with any given wood and any given cutters, must determine whether or not to remove the chase at each change of patterns. By preparing my entire series of chases with their interiors exactly alike, each pattern may be received in each chase interchangeable. This gives a facility for operating with a great variety of modifications in the tools for the several steps, but all possessing the novel feature of operating in succession, with a number of patterns on the same wood, the patterns being held within the same, or precisely similar chases. Thus, for example, I can, by changing the length of the cutters as the work sinks, as above described, perform all the successive steps by patterns held within a single chase, resting on the original face of the wood, instead of on other chases. To effect this, I omit the sawing or otherwise rebating the wood at the commencement, fix a single chase firmly on the face-surface of the wood, and introduce the pattern with the smallest aperture first, traverse around it with a short cutter, then remove the pattern, and apply the one with the next larger aperture, and traverse around this with a just sufficiently larger cutter; then removing this, I apply the next pattern, and traverse around it with a still larger cutter, and thus proceed, finally using a cutter of sufficient length to reach down nearly the whole thickness of the original block. It will be understood, of course, that the space between one channel and the next, in such work, must be routed off, as the work proceeds. The considerable mass of wood

left at the edge, under the chase, may be routed off, or removed by sawing afterward.

Instead of lowering the cutting-arbor, it is practicable to cut it deeper by raising the wood at each stage. My improved machine, above referred to, is admirably adapted to effect all the changes, to cut in different planes in this way, and it has the advantage of requiring no care in adjusting, it being simply necessary to elevate the wood and its appurtenances, after each chase is removed, until the next chase below comes up to the same level as the preceding.

A pleasing variety of work, for some purposes, may be produced by operating with successive patterns within a single chase, in the manner last described, without increasing the length of the cutters, and without routing off the wood. In such case, the depths and cross-sections of the several channels may be uniform or otherwise, according as the cutters are changed, or not, and the surfaces between the channels will be all in the same plane, the original surface of the wood. I have tested this mode of working, and although its effect is not as rich as the swells before described, it may be highly useful in some situations.

It is not essential in this last-described mode of operating that the smallest pattern should be used first, either may be used first, or the patterns may be such that the channels shall cross and recross each other at pleasure. I can rout off the wood between any channels in this variety of the work, if preferred, and by elevating the arbor, or changing the length of the cutter, can rout off at a level a little above the bottoms of the channels, thus making a great variety of work, all depending on the same original feature of treating with a succession of patterns.

It will be readily understood that if, in the production of the swelled work first described, the thickness of the wood is a little less than I have above assumed. It may be pinned, screwed, or otherwise secured upon a plain piece of wood, and the chase, in such case, secured to the projecting edges of the plane wood, and thus made to serve in the same manner as if the wood was thicker, and rebated, as described.

After the wood thus confined upon a board has been worked down to the proper swelled and ornamented configuration, it may be removed, and ultimately glued, or otherwise secured to a plane piece of the same or different wood.

Having now fully described my invention,

What I claim as new, and desire to secure by Letters Patent, in the working of wood, is—

The method herein described, of producing carved ornaments in wood, by revolving cutters, traversed with in a series of patterns, applied in succession within the same chase, or within similar chases, the same being constructed and arranged to operate in the manner herein set forth.

In testimony whereof, I have hereunto set my name, in presence of two subscribing witnesses.

NICHOLAS JENKINS.

Witnesses:

THOMAS D. STETSON,
WM. C. DEY.