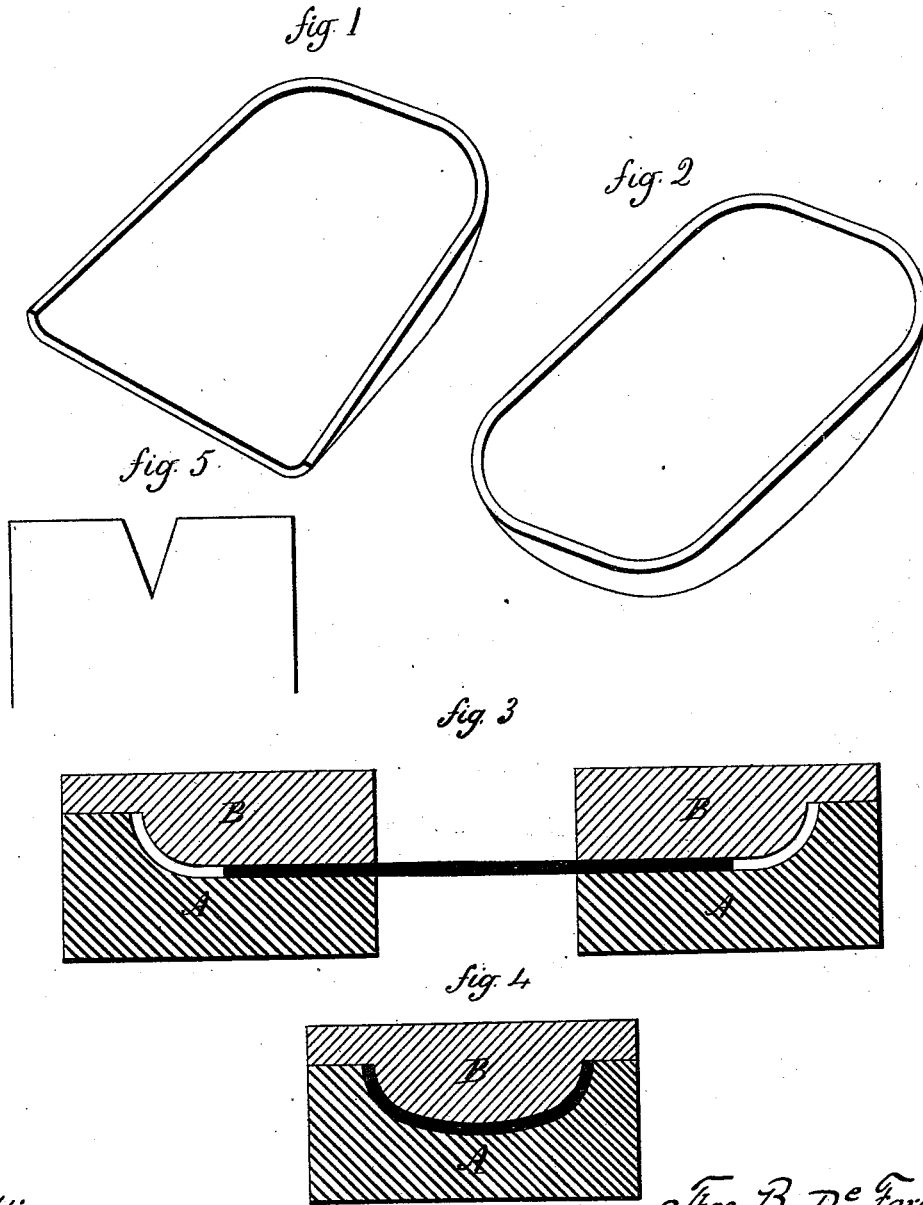


T. B. DeFOREST.
Process of Bending thin Sheets of Wood.
No. 213,179. Patented Mar. 11, 1879.



Witnesses.

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IMPROVEMENT IN PROCESSES OF BENDING THIN SHEETS OF WOOD.

Specification forming part of Letters Patent No. **213,179**, dated March 11, 1879; application filed March 4, 1878.

To all whom it may concern:

Be it known that I, THOMAS B. DE FOREST, of Birmingham, in the county of New Haven and State of Connecticut, have invented a new improvement in the process of bending or shaping articles from thin plates or sheets of wood; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a perspective view of a shovel or scoop in which the bending is made at one end only; Fig. 2, a bowl or article in which the bend is made at both ends; Fig. 3, a longitudinal section, illustrating the process of bending; Fig. 4, a transverse section.

This invention relates to an improvement in bending plates or sheets of wood for the purpose of forming hollow articles, such as wood bowls, or such as are bent and contracted at one end only, as scoops, shovels, &c. The usual method of forming these articles has been to work them from the solid wood.

The object of this invention is to produce such articles from thin sheets or plates of wood; and it consists in contracting or shaping the sheet by a combined longitudinal bend and transverse contraction of the sheet. The expression "longitudinal" is here used as in the direction of the grain of the wood.

In describing this invention, I employ the best means known to me for producing the desired result. First, to form hollow articles, such as bowls and the like, two dies, as shown in Fig. 3, are made, each a duplicate of the other, and each preferably in two parts, A B. The part A has a cavity formed in it corresponding to the exterior of the article to be produced, and B corresponding to the interior of the article, and so as to leave a cavity between the two corresponding to the article.

A flat thin plate of wood, in thickness corresponding to the thickness of the cavity, and of the length required, is first steamed or softened in any of the usual methods employed for preparing wood for bending, and then introduced into the two dies, as seen in Fig. 3,

but only to the extent to which the two dies are in line, solid black in Fig. 3, showing the wood in that position. The edges are thereby turned up into the cavity, as seen in Fig. 4. Then power is applied to the opposite or outer end of the two dies to force them toward each other onto the wood. The wood gradually works its way into the end, the end contracting and consequently turning up until the cavity is filled and the article completely shaped. It is held in this position by the same die or a holding-form until completely dried.

This method of bending contracts and consolidates the wood at the ends, making it harder and firmer than in its original state, and produces an article very much stronger than the article worked from the solid wood, and with the grain following the curves rather than across the grain, as when the article is worked from the solid wood.

Shovels or scoops—such, say, as shown in Fig. 1—are produced in like manner, but by bending one end only.

While it is preferred to make the article from the plain blank without cut or slit in the end, there may be a notch cut in the end preparatory to bending, as seen in Fig. 5, which will make the bending much easier, but will require a stay to support or hold the joint after bending, and the article will be inferior in consequence of such slit.

I am aware that it is not new to bend wood longitudinally by forcing it into a cavity closed on all sides to prevent the outside fiber of the wood from being disturbed, and as for bending fellies of wheels, and like purposes. I therefore do not wish to be understood as claiming the bending of wood by forcing it into a cavity of irregular shape.

I claim—

The herein-described method of forming hollow articles from sheets or plates of wood, consisting in subjecting the plate or blank to a combined longitudinal bend and transverse contraction, substantially as specified.

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Witnesses:

HENRY S. DE FOREST,
SARAH H. DE FOREST.