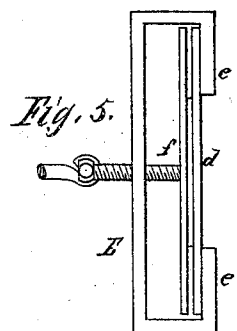
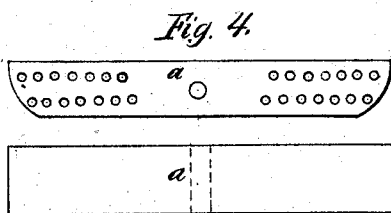
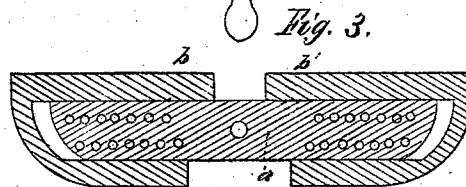
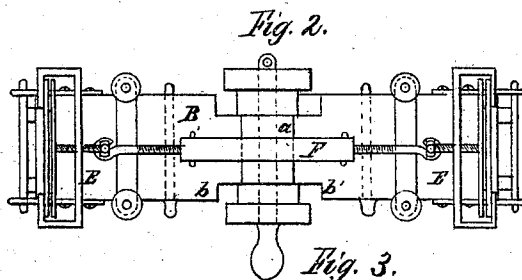
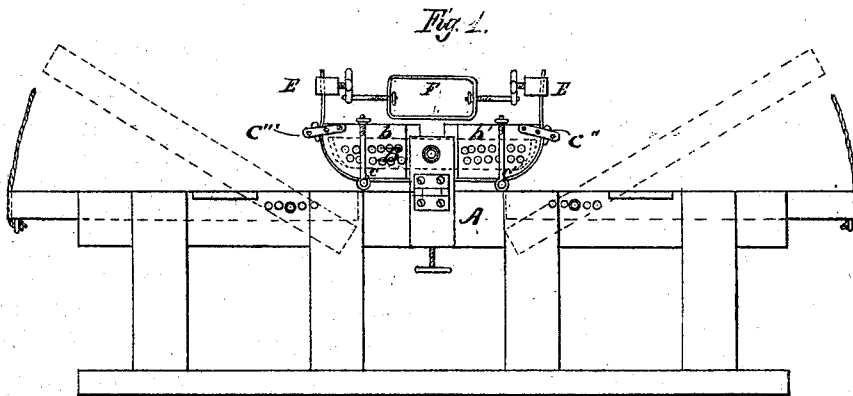


CHRISTIAN LESEBERG.

Improvement in Machines for Bending Wood.

No. 124,753.

Patented March 19, 1872.



Witnesses.

John C. Morris
Ezra Cope

Inventor.

Christian Lesenberg.

UNITED STATES PATENT OFFICE.

CHRISTIAN LESEBERG, OF CINCINNATI, OHIO.

IMPROVEMENT IN MACHINES FOR BENDING WOOD.

Specification forming part of Letters Patent No. 124,753, dated March 19, 1872.

Specification describing certain Improvements in Wood-Bending Appliances, invented by CHRISTIAN LESEBERG, of Cincinnati, in the county of Hamilton and State of Ohio.

One part of my invention embraces the combination of a wood-bending form, constructed in such a manner as to be adjustable for shaping different sizes of the articles to be bent, as is required in bending wagon and carriage bows with a wood-bending machine that effects the bending from the middle toward the ends of the wood, constructed and operated in the manner as hereinafter described.

The other part of my invention relates to the combination of the foregoing-described wood-bending form and machine with the upsetting clamp or clamps, constructed with a separable base supported by lugs to resist the thrust of the screw and platen when in use.

Figure 1 is a side elevation of the main part of a wood-bending machine, with the form after the operation of bending has been completed and the product secured in its new shape. Fig. 2 is a plan of the form removed from the machine. Fig. 3 is a section of the empty form. Fig. 4 represents two views of the mandrel. Fig. 5 represents the upsetting-clamp.

A is a frame or table, with timbers separated to receive two levers, which are pivoted asunder to suit any adjusted size of the form and be flush with the top of the table. Two uprights, erected at the center of the length of the table, take a pin or stud, which holds the form in position while the straight wood is being bent to the shape of the form. One of the uprights is hinged to better permit of placing and removing the form. A set-screw works from beneath the table to force the wood against the form. B is a wood-bending form, constructed of several adjustable parts, but mainly of a mandrel, *a*, two sheaths, *b* and *b'*; both the mandrel and the sheaths are pierced for adjusting-pins, which are employed to fix the length of the form to suit the varied required sizes. The form is provided with two shackle-clamps and two or more pairs of clamp lugs, *c*, *c'*, *c''*, and *c'''*. E is the upsetting-clamp, with the separable base

d lodged on the lugs *e* and *e'*, to form the rectangular shape and the parallel space between the platen *f* and the base *d*, wherein the usual bending band of iron and the wood to be bent is so securely clamped together as to upset the wood on the inner curve while being bent. F is a loop or catch bar, to hold the bent wood and permit the levers to be returned, and the form and bent wood thereon to be removed.

The operation is as follows: The levers being level, the bending-band is placed on the levers with the bars of the shackle-clamps, and the upsetting-clamps beneath the band, and the wood to be bent upon the band. The form is placed in contact and upon the wood, and fixed in position by the stud or pin passing through the uprights and mandrel; the two upsetting-clamps are applied, one on each side away from the form, so as to embrace the bending band and the wood firmly enough to produce the upsetting of the inner curve in producing it. The set-screw beneath the table is turned and the shackle-clamps adjusted to bring the wood in closer contact with the form before beginning to bend. The outer ends of the levers are then brought up together by manual or other power, usually by means of cords and drum, to effect the bending to the extent desired, when the bent articles are caught and held by the catch-bar, the levers allowed to go back, and the form, having the wood in the new shape additionally secured to it by inserting pins in the clamp-lugs and driving wedges, is then removed to give place for another form.

If required, the same form may be stripped for immediate use again; but several forms should always be used with one machine, in order that the cooling and setting of the steamed and bent wood in the new shape be more thorough.

I do not claim the mechanism whereby the bending is effected; nor the loop or catch-bar; but

I claim as my invention—

1. A wood-bending form, composed of the mandrel *a*, sheaths *b* and *b'*, shackle-clamps and clamp-lugs *c*, *c'*, *c''*, and *c'''*, combined

with levers moving about fulcrums outside of the form, all constructed and operated substantially as hereinbefore described and shown.

2. The combination of the upsetting-clamp, the bending band or strap, the form, when adjustable for size on a central mandrel, and supported by a hinged upright and central

pin, all constructed and operated substantially as hereinbefore described and shown.

CHRISTIAN LESEBERG.

Witnesses:

JOHN C. MORRIS,
EZRA COPE.