# H. & L. D. Benson,

## Jointing Staves.

No. 6,744. Patented Sept. 25, 1849.

Fig 1.

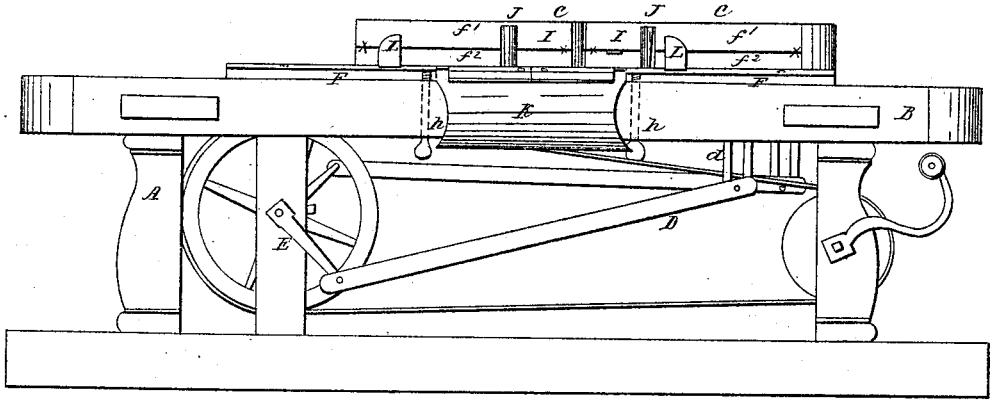



Fig 2.

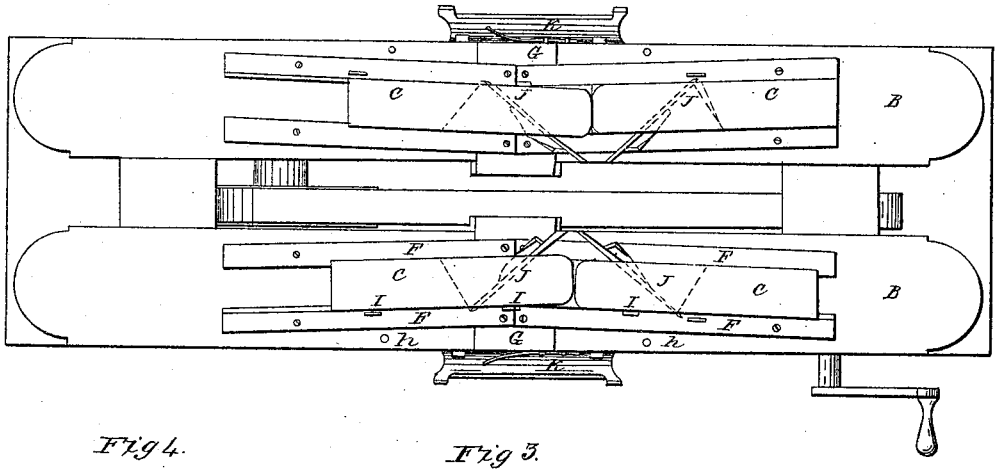



Fig 4.

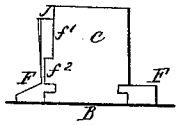
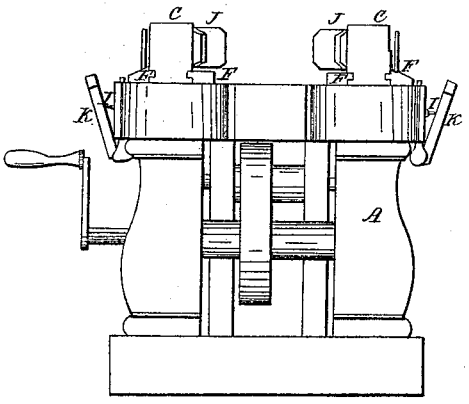



Fig 3.



# UNITED STATES PATENT OFFICE.

HOSEA BENSON AND L. D. BENSON, OF JACKSON, PENNSYLVANIA.

## MACHINERY FOR JOINTING STAVES.

Specification of Letters Patent No. 6,744, dated September 25, 1849.

*To all whom it may concern:*

Be it known that we, HOSEA BENSON and LORENZO D. BENSON, of Jackson, in the county of Susquehanna and State of Pennsylvania, have invented a new and useful Improvement on Machinery for Jointing Staves; and we hereby do declare that the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

Figure 1 is a front elevation. Fig. 2 is a top view. Fig. 3 is an end view. Fig. 4 is an end view of plane.

The nature of our invention consists in providing two planes with unequal faces, and coupling the said planes together on a moveable gate to set the planes at different angles to one another, and in operating the said planes by a reciprocating motion, to plane the joints of staves of any bulge, and any bevel on the edge, the one plane shaving in one direction and the other plane shaving in the other direction, cutting both ways of the reciprocating motion and also planing off the rough and smoothing by the construction of each plane.

To enable others skilled in the art to make and use our invention we will proceed to describe its construction and operation.

The same letters of reference on the above figures indicate like parts.

A is the frame of the machine. It is made of any of the known forms and any materials most suitable.

B is a top longitudinal sleeper.

C C are two planes like those in common use by joiners. These planes are coupled together and secured to slide on the top of the sleeper B. These planes are attached to the pitman D by a link *d* and they receive a reciprocating motion from the crank E in the well known way to produce such a motion and therefore in this particular need not be farther described.

F F F F is a guide fence. It is composed of four rails secured by screw axles to the sleeper B at their outer ends and secured to the movable gate or gage G by screw axles at their inner ends. The under sides of the planes are formed with a groove on one side and a tenon on the other side, and the rails of the fence are made with grooves and tenons to receive and embrace the planes, to hold and guide them steady, but to allow the planes to slide backward and forward freely. This is also a well known way of guiding moving bodies steadily over a certain surface and need not be further described.

The gage G is secured transversely in a mortise cut in the face of the sleeper B. By moving the gage out or in the position of the fence F F will be changed and the planes set at different angles to shave or plane staves of a different bilge; *h h* are set screws to retain the fence at different angles.

The planes are coupled together in any known manner to be taken apart for sharpening, &c. The planes are placed reverse to one another, the one to act upon the stave when the pitman is moved forward in one direction and the other to act upon the stave when the pitman is moved back in an opposite direction. As the planes are shifted at their inner ends by the gage G to cut at different angles according to the bilge required to be formed on the stave they therefore answer the purpose of cutters or planes and face plate at the same time.

Figure 2 represents the planes set at an angle to shave staves to a certain bilge. Each plane has its knife or shaving iron set in the common way. On the upper half of each plane divided by the line *x x* the knife protrudes farther than on the lower half. This is done by forming a recess on the wood or what we term the face of the plane, making two faces to each plane.

The upper face of the plane is therefore to take off the rough of the stave, and the lower part to finish or smooth the joint. *f'* is the upper face of the plane and $f^2$ the lower face. J, is the knife of the plane.

I, I, are two rests or projections inserted into the face of the planes to support the stave that is held to the planes. The rough stave (unjointed) is placed on the rests I I with its edge pushed against the upper face of the planes. A few strokes of the planes takes off the roughest part of the stave edge, and it is then shifted and placed on the feed table K, with the edge against the lower face $f^2$ of the plane, and is there finished, completely matched or jointed, as it is technically termed.

The feed table K, is made or hung upon the frame to be set at any inclination, to allow the edge of the stave to be fed to the planes to shave the edge of the stave to any required bevel; but as such tables are known and used in various machines it need not be

further described. L L, are two guide posts on the fence F F. We employ two sets of planes on one frame operated exactly in the same manner as represented in Fig. 2. This plan of jointing staves makes beautiful work. No other plan to our knowledge is so well adapted to make an accurate stave joint. Saw jointers and cleaning knife jointers do not make a joint for a stave sufficiently accurate for all purposes—every person acquainted with the business knows this.

By our jointer or method of jointing the most perfect joint can be formed, are far superior to that produced even by hand and the old shaving knife.

Having thus explained our invention we claim—

1. The combination of the two planes C, C, with the guide rails F, F, and the gage G, to set the planes at different angles to joint staves of different bulges—the planes answering the purpose of a face plate, and the one plane shaving in one direction and the other shaving in an opposite direction in the manner described or in any manner substantially the same.

2. We also claim the planes C, C, constructed with the face $f'$ and $f^2$ in each plane in combination with the supports I I on the planes, to shave off the rough and smooth or finish the jointing, by one set of planes, in the manner substantially as set forth.

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Witnesses to signature of Hosea Benson:
SILAS F. MCRUM,
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Witnesses to signature of Lorenzo D. Benson:
ELFORD E. IARMAN,
ISAAC CLOWES.