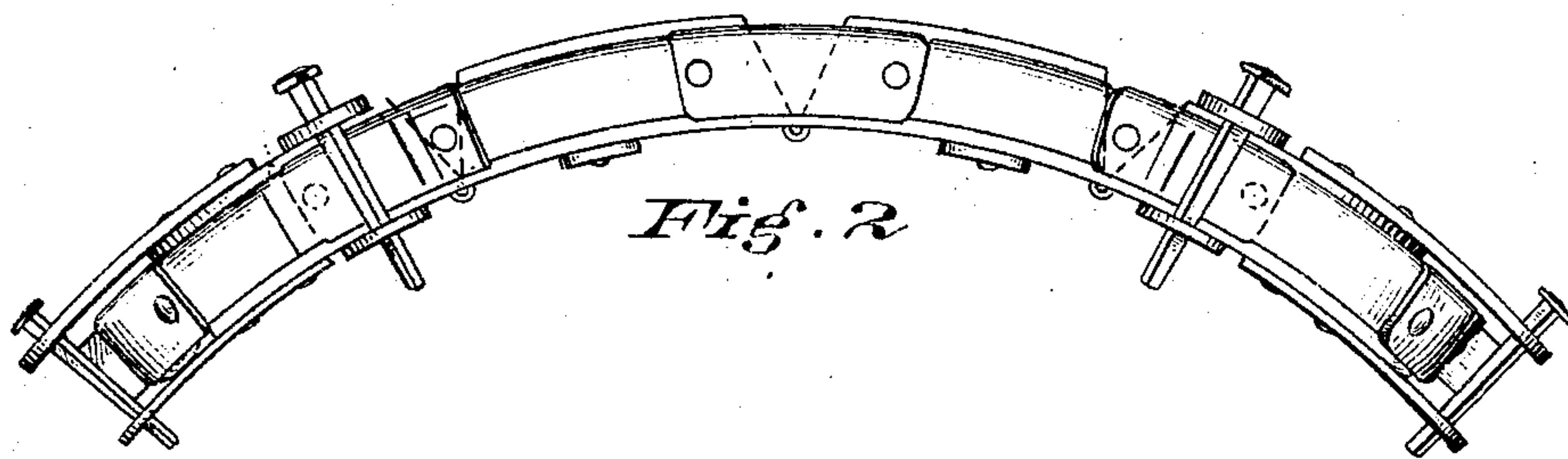
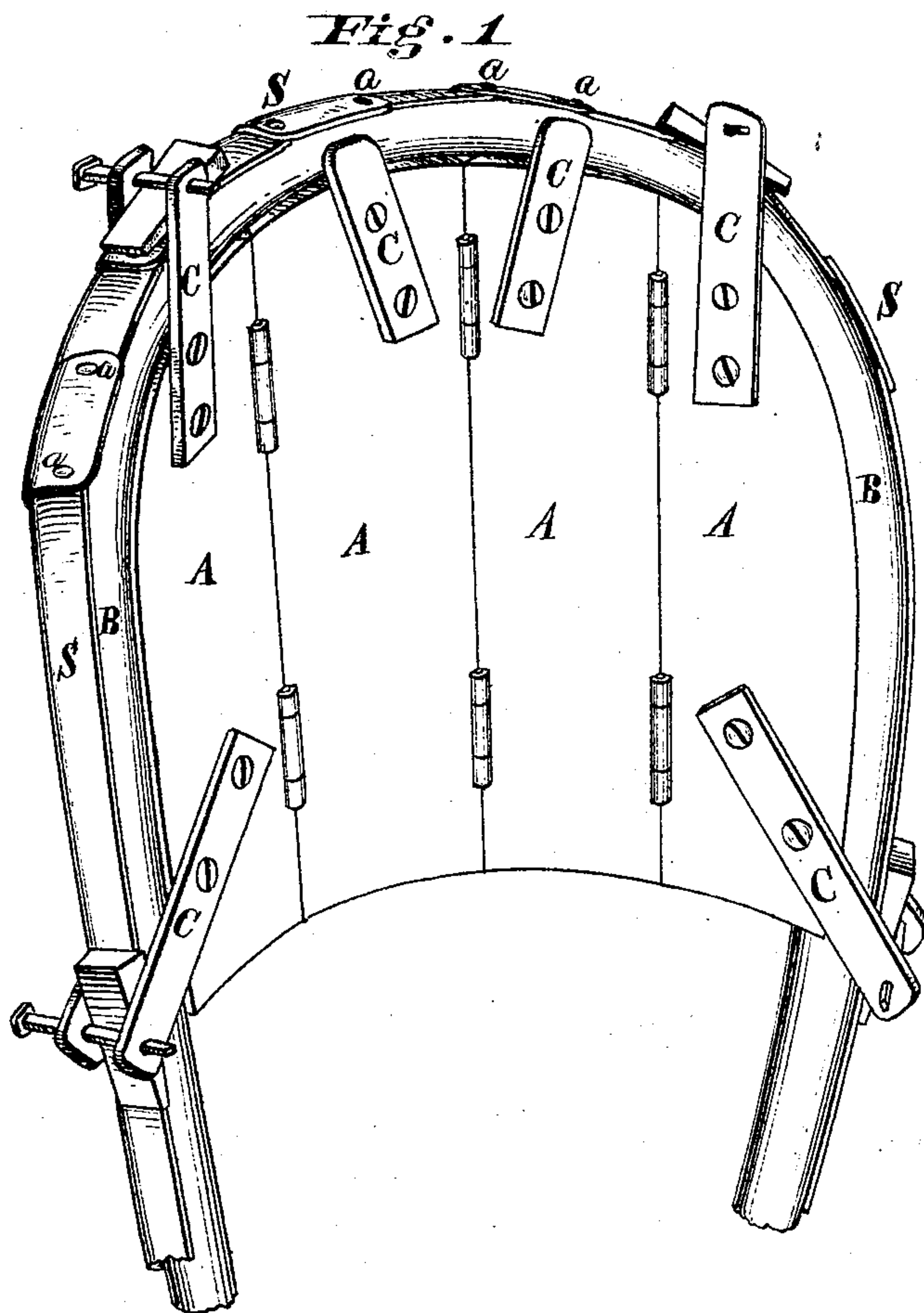


J. M. WATERS.  
Forms for Bending Wood.

No. 149,084.

Patented March 31, 1874.



*Attest*

*Charles H. Smith.*  
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*Inventor*

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*by Fisher & Duncan*  
*his attorneys*

# UNITED STATES PATENT OFFICE.

JABEZ M. WATERS, OF CINCINNATI, OHIO.

## IMPROVEMENT IN FORMS FOR BENDING WOOD.

Specification forming part of Letters Patent No. **149,084**, dated March 31, 1874; application filed November 3, 1873.

*To all whom it may concern:*

Be it known that I, JABEZ M. WATERS, of Cincinnati, county of Hamilton and State of Ohio, have invented an Improvement in Forms for Bending Wood, of which the following is a specification:

In bending chair-rims, &c., it has heretofore been customary to give the rim the required shape by bending successive portions of it around forms which are inflexible, so that each portion is bent but once.

The object of my invention is, by the use of a flexible form, to make it possible to bend a piece of wood a second time in the same part which has already been bent once in the ordinary way. It is evident that a piece of wood can thus be bent into shapes which could not be obtained by successive bendings of separate portions.

The flexible form which I have invented consists of parts, as A A A A, Fig. 1, which are hinged, jointed, or linked together in any convenient manner. The outer and upper edge of this form is of the shape to which the piece of wood is desired to conform at the first bending. In use, this form (which may be of any suitable material) is first laid flat, and the piece of wood B, previously made pliable by steam or hot water, is bent around it in the ordinary way, and held in place by clamps C C C; or the wood may first be bent around a separate form, and then transferred to the flexible form, and fastened to it. The flexible

form, with the bent wood fastened to it, is now itself bent around a secondary form of desired shape by the application of suitable pressure. This is made possible by the hinges, joints, or links between A A A A. The metallic strap S is also jointed at *a a a*, so that it also may conform to the curvature of the secondary form. By this operation, the piece of wood B which was previously bent is now bent again in a new direction, and the combined effect of the two curves is to produce a chair-rim of the most desirable shape and the greatest attainable strength, with the greatest economy of material; and, by the use of the flexible form, the symmetry of the rim or other piece of wood is preserved during the second process of bending.

In the drawings, Figure 1 represents the form and wooden rim B in the shape given them after the process of double bending is completed, and Fig. 2 is a top-edge view of the same.

I claim as my invention—

A yielding or flexible form for bending wood, which may be bent or made to conform to a secondary form, for the purpose of bending again a previously-bent piece of wood which is secured to it, substantially as herein specified.

JABEZ M. WATERS.

Witnesses:

CHARLES H. SMITH,  
JEREMIAH F. TWOHIG.