(No Model.)

W. GARDNER.

ADJUSTABLE CAUL.

No. 453,592. Patented June 2, 1891.

Fig. I.

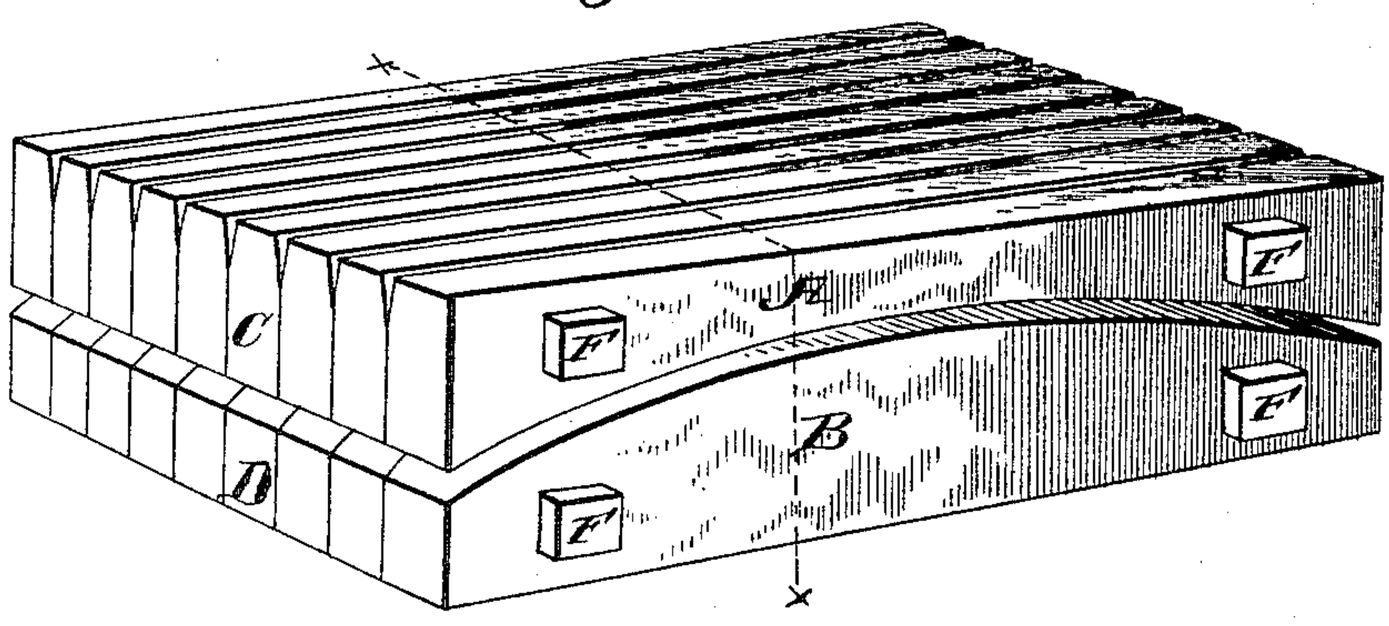

Fig. II.

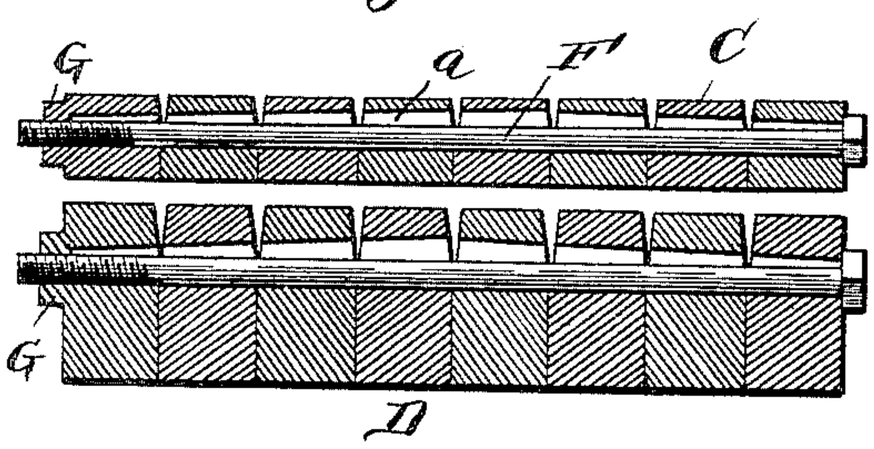

Fig. III.

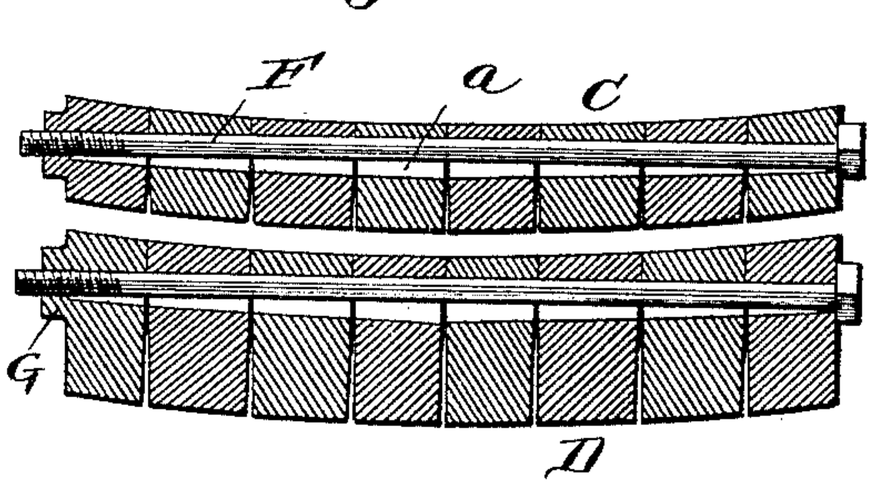

Fig. IV.

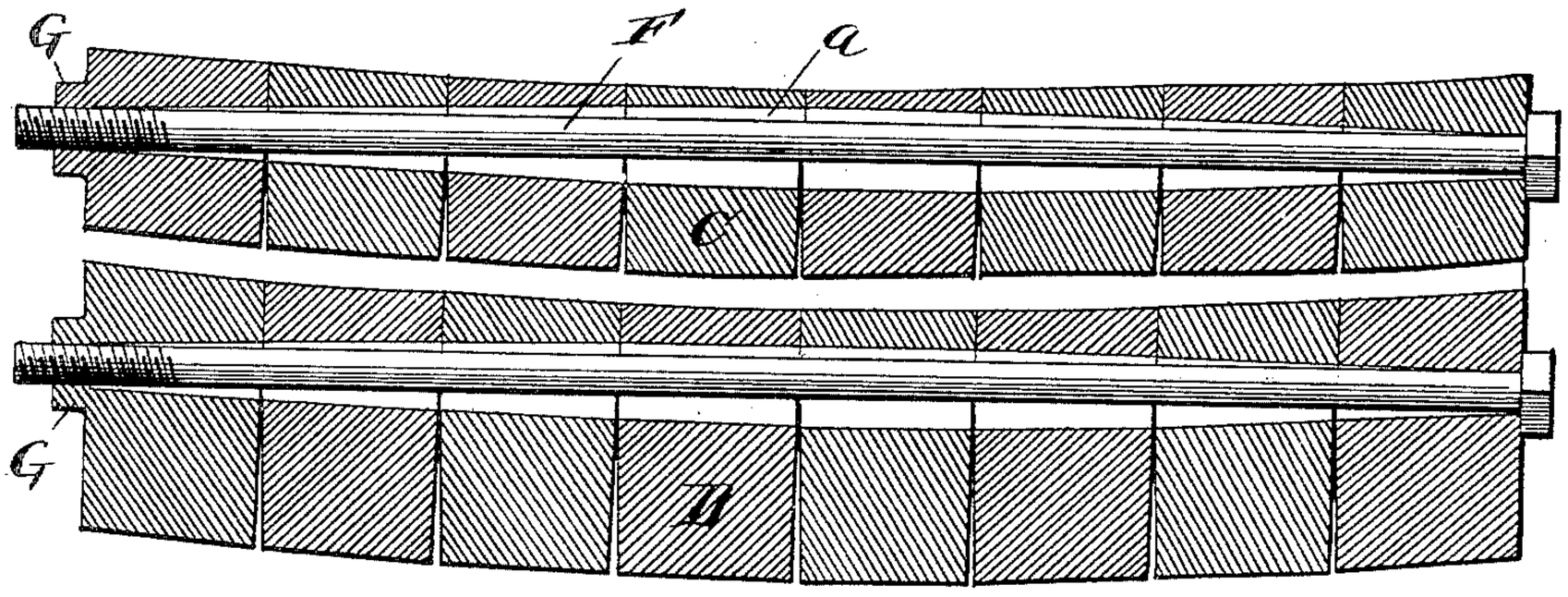

Fig. V.

Witnesses:
J. B. McGirr.
W. J. Brinkerhoff

Inventor:
William Gardner
By Edson Bros.
His Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM GARDNER, OF NEW YORK, N. Y., ASSIGNOR TO THE FROST VENEER SEATING COMPANY, OF SAME PLACE.

ADJUSTABLE CAUL.

SPECIFICATION forming part of Letters Patent No. 453,592, dated June 2, 1891.

Application filed December 3, 1890. Serial No. 373,441. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM GARDNER, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Adjustable Cauls; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improved caul for shaping or forming and pressing veneers for the backs and seats of settees, church-pews, and the like.

The object of my invention is to provide a caul capable of a limited flexure or adjustment, and which can be used for pressing backs of church-pews where the seats are arranged in a circle, each having a different radius, thereby obviating the necessity of employing a different caul for each segmental church-pew of a different radius; and a still further object of the invention is to provide an improved caul which can be easily and quickly adjusted to shape or form any desired length of back, and which is simple in construction and effective in operation.

With this end in view my invention consists of a caul comprising an upper member having a working-surface of the desired contour and a lower member having a corresponding or inverted working-surface, each of said members being made or composed of a series of sections and provided with means for laterally compressing the sections together and securing a slight lateral adjustment to vary the relative position or angle of the working-surfaces of each of the sections in their relation to each other, whereby the desired curvature may be imparted to the working-surfaces of the caul to mold the work on segments of a circle of varying radii, all as will be hereinafter fully described and claimed.

To enable others to understand my invention, I have illustrated the same in the accompanying drawings, in which—

Figure I is a perspective view of the caul constructed in accordance with my invention. Fig. II is a sectional view on the line *x x* of Fig. I. Fig. III is a similar view after the pieces composing each member have been drawn together. Figs. IV and V are views illustrating the manner of adjusting the members of the caul.

Like letters of reference denote corresponding parts in all the figures of the drawings, referring to which—

A B denote the upper and lower members of the caul, respectively.

The members A B are made up in sections or composed of a series of pieces C D, each section C D having one face curved in the direction of its length, either concavely or convexly, according as the section belongs to the upper or to the lower member of the caul, the opposite or outer face of each section being flat. The sections C D are arranged parallel in relation to each other, and each is provided with two or more transverse passages or apertures *a*, elliptical or oblong in cross-section. Through these passages extend the long bolts F, which are screw-threaded for a portion of their length, and such threaded portion passes through an internally-threaded box or nut G, secured on or bearing against the outer exposed side of the outside section C D of each member A B of the caul.

As is obvious, the bolts F may be made of any length and the number of sections C D varied according to the length of the veneer to be shaped or formed.

The sections C, composing the upper member A of the caul, are beveled on ther lateral faces or sides throughout their length, the bevel beginning at the median line of the section and crossing the passages *a* about the middle thereof and extending to the upper flat surface of said caul member A. The sections D, composing the lower member B of the caul, are each beveled slightly on the lateral faces or sides, the bevel extending from the median line to the curved working surface of the lower member B.

The operation of my invention is as follows: The veneer to be shaped or formed is placed between the two members of the caul, and, if it is desired to bend or curve it in the direction of its length only, pressure is applied to the upper member of the caul after the veneer and the caul have been prepared by heating in a manner well known to the trade. If it is desired to curve the veneer longitudinally as well as transversely, the threaded rods or

bolts F are turned or rotated, thereby drawing toward each other the upper beveled edges of the sections comprising both members A B of the caul and giving each member of the caul a slight curvature transversely on its working surfaces or in the line of the length of the bolts, after which pressure is applied to the members of the caul to compress and mold the veneer, as before stated. The transverse passages in the sections C D through which the bolts pass are elongated, as before stated, to permit the upper edges of said sections to be drawn toward each other without bending or twisting the bolt.

If the veneer to be shaped is very long, as is often the case in shaping backs and seats for church-pews, in lieu of making the rods F continuous throughout the whole length of the caul, said bolts can be made in sections of any suitable or desirable length, thus making the bolts comparatively short and dispensing with passages of such large diameter through the sections as to weaken the sections.

I am aware that changes in the form and proportion of parts and details of construction herein shown and described can be made without departing from the spirit or sacrificing the advantages of my invention, and I therefore reserve the right of making such changes as fairly fall within the scope of my invention.

In order to obtain the proper transverse curvature of the caul, I mark on and saw out of one or more boards the curve to which it is desired to bring the work, and I then apply this curved edge of the board or boards to the upper surface of the lower member of the caul and tighten the rods until the upper surface of the lower member corresponds exactly with the curve in the board or boards.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An adjustable caul comprising the upper and lower members having working-surfaces of the desired form, each member comprising a series of pieces or sections connected together by rods or bolts, substantially as shown and described, for the purpose specified.

2. In an adjustable caul, the members each comprising a series of parallel pieces or sections having the working-surfaces of the desired form and the opposite faces of less width than the working-faces, and the tightening rods or bolts extending through the sections of each member near the ends thereof, substantially as shown and described, for the purpose specified.

3. In an adjustable caul, the members each comprising a series of pieces or sections, each having one face suitably curved and having beveled sides, the transverse passages in each member of the caul, the threaded box or nuts, and the threaded bolts passing through the transverse passages in each member, substantially as shown and described, for the purpose specified.

4. In a caul for molding pliable work, the members each comprising a series of pieces or sections joined together and capable of a limited adjustment so as to impart varying curves or shapes to the working-surface of the member, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM GARDNER.

Witnesses:
OSCAR B. JARVIS,
W. E. RUSSELL.