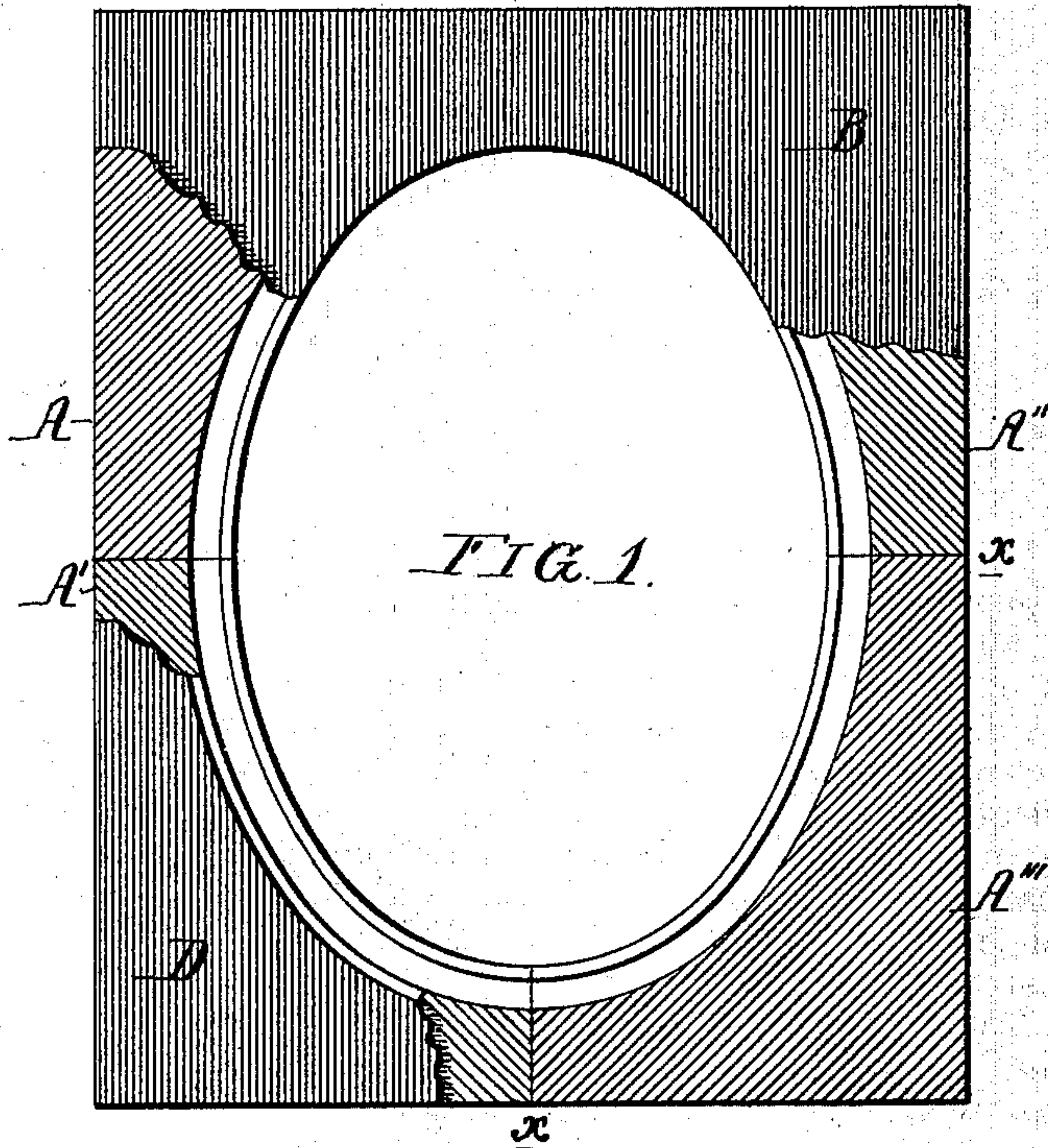


H. S. HALE.

Wooden Mats for Picture-Frames.

No. 146,067.

Patented Dec. 30, 1873.



Witnesses, Harry Smith  
Hubert Houston,

Henry S. Hale  
by his Atty.  
Hudson and Son



# UNITED STATES PATENT OFFICE.

HENRY S. HALE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HALE, KILBURN & CO., OF SAME PLACE.

## IMPROVEMENT IN WOODEN MATS FOR PICTURE-FRAMES.

Specification forming part of Letters Patent No. **146,067**, dated December 30, 1873; application filed August 15, 1873.

*To all whom it may concern:*

Be it known that I, HENRY S. HALE, of the city and county of Philadelphia, State of Pennsylvania, have invented an Improved Wooden Mat for Picture-Frames, of which the following is a specification:

The object of my invention is the production of a wooden mat for picture-frames which shall not be so liable to warp as the wooden mats heretofore constructed. I attain this object by making a frame composed of four pieces, A, A', A'', and A''', united at the points shown in the accompanying drawing, and then veneering both sides of the frame, as shown.

In the patent, No. 120,250, granted to my present assignees October 24, 1871, the applicant, H. W. Curtis, describes a wooden mat composed of four pieces, united at the points *x x*, instead of at the corners, the grain of the wood in each piece having an inclined direction; this plan being adopted partly to avoid the unsightly opening of the ordinary corner joints, partly on the score of economy in the consumption of the wood, and partly to prevent warping. In making thick wooden mats this plan served the desired purpose; but I have found comparatively thin mats made in accordance with this plan would become more or less warped, and that the joints were weak, owing to the limited surface for receiving the glue.

I have made thin wooden mats of three veneers glued together in such a manner that the grain of the wood of one veneer crossed that of the adjoining veneer at right angles; but I did not succeed by this plan in preventing the frame from warping. To meet this difficulty I adopt, as part of my present invention, the plan described in the aforesaid

patent—that is to say, I make the body of the frame in four pieces, and unite, as shown, and then glue to the back a strip of veneering, B, and to the front a similar veneer, D.

By this arrangement I obtain all the advantages of the patented mat, while the joints, which, in the thin wood, would be too weak, are effectually protected by the veneers. But the most important result is attained by the arrangement which involves the crossing of the grain of the intermediate frame by that of the veneers at an angle of forty-five degrees, or thereabout, and by the crossing of the grain of two parts of the frame, by the veneers, at an angle the reverse of that at which the grain of the same veneer crosses that of the other two portions of the intermediate frame.

I have found, in practice, that a much more homogeneous mat, and one more free from liability to warp, may be thus constructed than by making it of three veneers with grains crossing each other at right angles.

Disclaiming a mat composed of three veneers—

I claim as my invention—

The within-described wooden mat, composed of an intermediate frame made of four pieces, united as shown, and having veneers glued to the said frame in respect to the grain of its wood, as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY S. HALE.

Witnesses:

HARRY SMITH,  
HUBERT HOWSON.