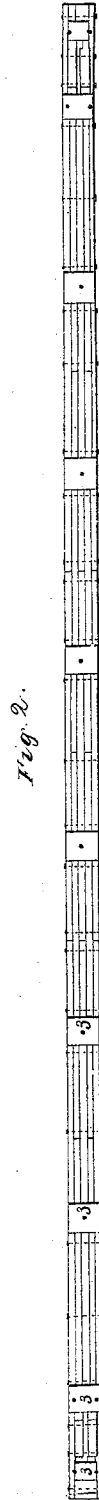
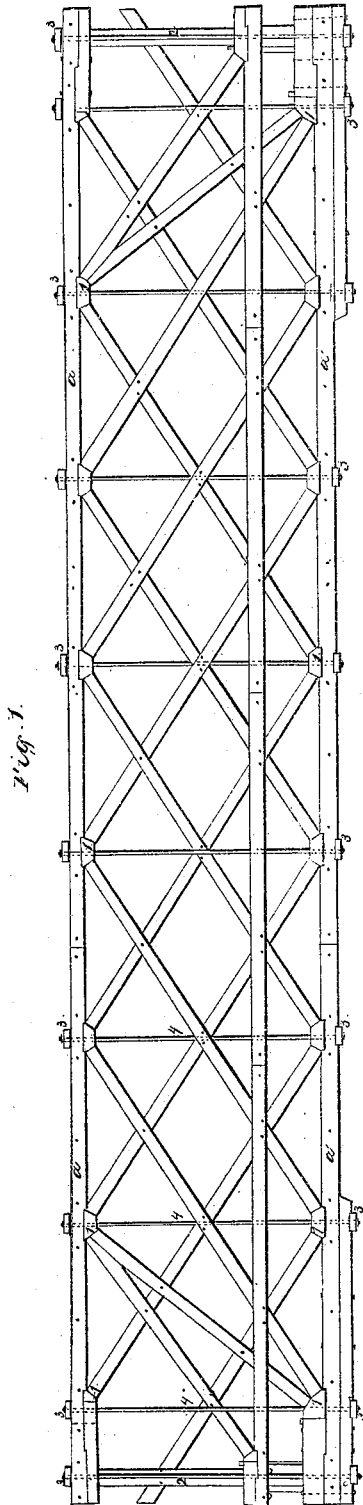


*W. Howe.*  
*Truss Bridge.*

*N<sup>o</sup> 1,711.*

*Patented Aug. 3, 1840.*



# UNITED STATES PATENT OFFICE.

WM. HOWE, OF WARREN, MASSACHUSETTS.

## MANNER OF CONSTRUCTING THE TRUSS-FRAMES OF BRIDGES AND OTHER STRUCTURES.

Specification forming part of Letters Patent No. 1,711, dated August 3, 1840; Reissued September 3, 1850, No. 175.

*To all whom it may concern:*

Be it known that I, WILLIAM HOWE, of Warren, in the county of Worcester, in the State of Massachusetts, have invented a new and improved manner of constructing a truss-frame which is principally intended for bridges, but which is applicable also to trussed roofs and many other structures where trussing is employed; and I do hereby declare that the following is a full and exact description thereof.

The truss-frame which I am about to describe is in many respects similar to the truss-frame for which, under several modifications thereof, Letters Patent of the United States are about to be granted to me, under an application therefor dated the eleventh day of May, 1840; but it differs therefrom in the effecting of the straining up, and cambering, by the operation of iron bars, or rods, furnished with screw nuts, and of wedge pieces so placed as to be rendered effective by the action of said screw rods, or bolts. For the general construction of my truss-frame I refer to the description, or specification, which will accompany, and make a part of, said Letters Patent, as above applied for, and in which it was intended to include the truss-frame herein described; but it has been deemed expedient to separate it therefrom, and to make it the subject of a distinct patent.

In the accompanying drawing, Figure 1 is my truss-frame, which has rods, or bars, of iron, in the place of the posts of wood by which the straining up is effected in the truss-frames above alluded to.

The braces and counter braces in the present instance are similar in their action to that described and illustrated in said specification and drawings. Nos. 1, 1, 1, in Fig. 1, are wedge pieces of hard wood, or of iron, which are placed crosswise of the string pieces *a, a, a', a'*, to form the bearings for the ends of the braces and counter braces.

Pieces of wood, or of iron, 2, 2, are also placed at the ends of the truss-frame, having their ends bearing against the string pieces, for the purpose of resisting, or counteracting, the action of the turning screws. Nos. 3, 3, are blocks of wood, or pieces of iron, placed between the screw nuts and the string pieces, for the iron bolts to pass through, and intended to afford an equal bearing on the string pieces, both above and below the truss-frame. Nos. 4, 4, 4, are the iron bolts which are to be strained up by screw nuts which have their bearing against the pieces 3, 3, 3, or against washers placed upon them.

To cause this truss-frame to camber by the tightening of the screws, it must be so framed in the first instance as that by the length of the braces inclined toward the center, or by the width given to the upper wedge pieces 1, 1, it shall camber to a certain extent, which effect will then necessarily be augmented by the tightening of the screws.

Fig. 2 is a top view of the string piece of my truss-frame, and I have there represented it as made by combining together several thicknesses of plank, a mode which, although not essential, I sometimes adopt.

What I claim as constituting my invention in the above described truss-frame, and which I desire to secure by Letters Patent, is—

The manner in which I have combined the iron bolts, and the wedge pieces against which the braces and counter braces abut, so as to cooperate in increasing the camber to any desired extent, the whole truss-frame being constructed, and acting, substantially as herein set forth.

WILLIAM HOWE.

Witnesses:

DANIEL HITCHCOCK,  
JOS. F. HITCHCOCK.