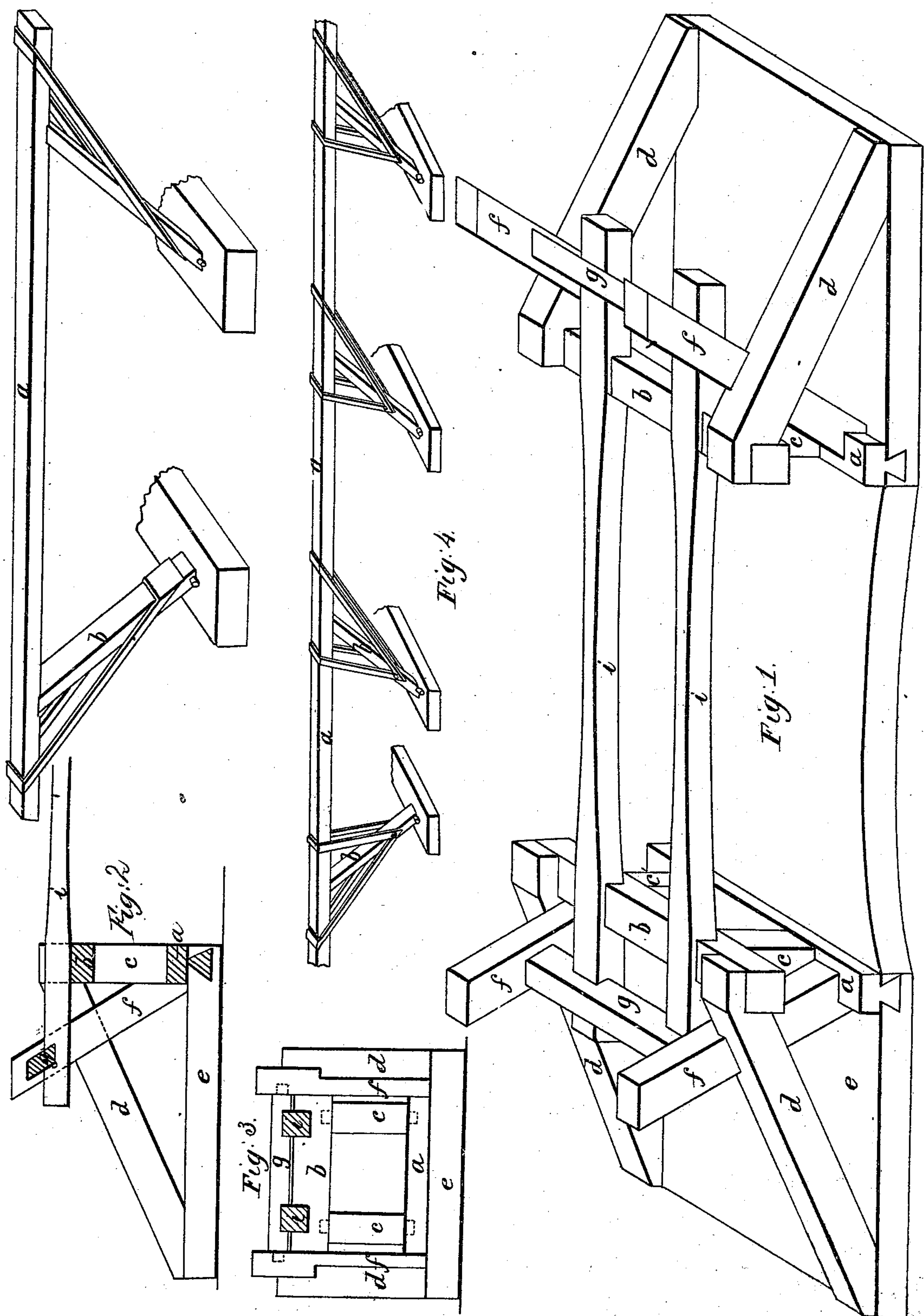


*J. R. Remington.*

*Truss Bridge.*

*No. 3,095.*

*Patented May 19, 1843.*





# UNITED STATES PATENT OFFICE.

JNO. R. REMINGTON, OF LOWNDES COUNTY, ALABAMA.

## METHOD OF INCREASING THE EFFECTIVE STRENGTH OF BEAMS OR RAFTERS OF WOOD OR OTHER MATERIALS USED IN BRIDGES AND OTHER STRUCTURES.

Specification of Letters Patent No. 3,095, dated May 19, 1843.

*To all whom it may concern:*

Be it known that I, JOHN R. REMINGTON, of Lowndes county, in the State of Alabama, have invented a Method of Increasing the Effective Strength of Timbers or Beams Used in Bridges and other Structures; and I do hereby declare that the following is a full, clear, and exact description of the same.

10 The nature of my invention consists in so arranging timbers or beams as to avoid their tendency to break in the middle of their length, and this is effected by extending the ends of the timbers beyond the points of  
15 support and there bracing or tying them down so as to render the points of support fulcra; the tendency to break in the middle of the length is thus in part transferred to the points of support,—for it will be evi-  
20 dent that thus supported the timbers can not break in the middle without breaking also at the two points of support. I shall proceed to describe the application of this principle to bridges without truss frames.

25 In the accompanying drawings, which make a part of this specification, Figure 1 is an isometrical projection of the bridge, Fig. 2, a longitudinal section of one end, and Fig. 3 a transverse section of the same.

30 This bridge is to be constructed without truss frames and made to depend for strength wholly upon longitudinal sleepers *i i* resting on piers *b b* constructed of masonry or timber. In the drawings they are  
35 represented as made of timber, a cross sill *b*—supported on two or more piles *c c* constituting each pier. These abutments or piers, are so braced by inclined braces *d d*, as to retain their relative position. The  
40 end of the sleepers which extend beyond the piers are tied down by cross beams *g, g*, and inclined braces *f, f*, or this can be effected by bands of iron passing over the ends of the sleepers and bolted to the timbers of  
45 the piers or abutments, or fastened by being let into the masonry of the piers.

The great object of these ties is not only to support the weight of the mass of timber of the sleepers and the flooring, &c.,

put thereon which tends to break the sleep- 50  
ers in the middle of their length but also to assist in supporting the weight passing over the bridge and thus transfer a part of the tendency to break in the middle to the parts resting on the piers, so long as the ties are 55  
of sufficient strength to prevent the ends of the sleepers from rising. It is very evident that this principle can be applied under various modifications, and to all purposes requiring either length or strength of tim- 60  
bers, or both—and the many modifications of which it is susceptible must be left with the constructor as circumstances may require. It may be applied with jointed piers as represented in the accompanying draw- 65  
ings, Fig. 4, which is a longitudinal elevation of this modification. *A* is the sleeper, supported on the inclined piers *b, b*, which incline inward, that is to say they are nearer together at their lower ends than at the top, 70  
so that the weight of the sleepers and what may be placed thereon shall tend to separate the piers at their upper ends, and thus stretch the sleepers longitudinally, the ends of the piers at the bottom being so formed 75  
and constructed as to permit sufficient play for this purpose. The ties or braces to hold the extremities of the sleepers which project beyond the piers being also modified in the attachment as to effect this end. 80

What I claim as my invention and desire to secure by Letters Patent is—

The method of increasing the effective strength of timbers or sleepers, or preventing their tendency to break in the middle of 85  
their length by tying or bracing down their ends beyond the points of support, in manner and for the purpose substantially as herein described.

It is to be understood that this method 90  
of increasing the effective strength of beams is applicable to all kinds of material of which beams are made in various constructions.

JOHN R. REMINGTON.

Witnesses:

DIXON H. LEWIS,  
CHS. M. KELLER.