A. Derrom.

Truss Bridge.

No. 48,530. Patented Jul. 4, 1865.

Fig. 1

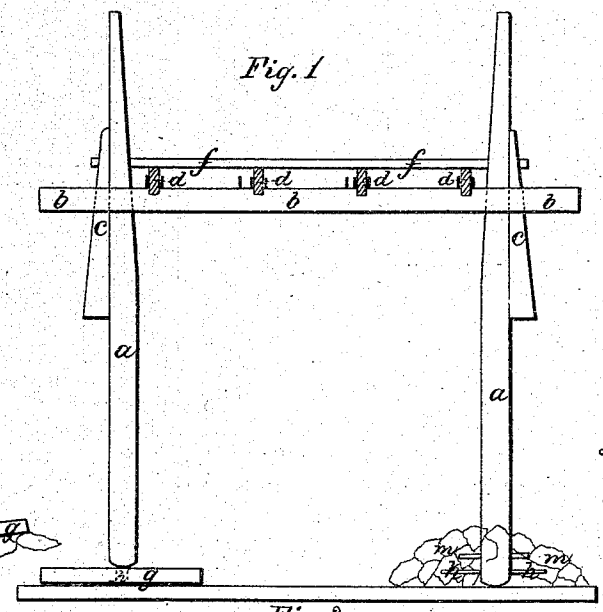


Fig. 5



Fig. 3

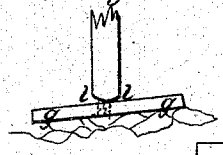


Fig. 4

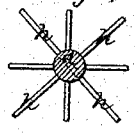
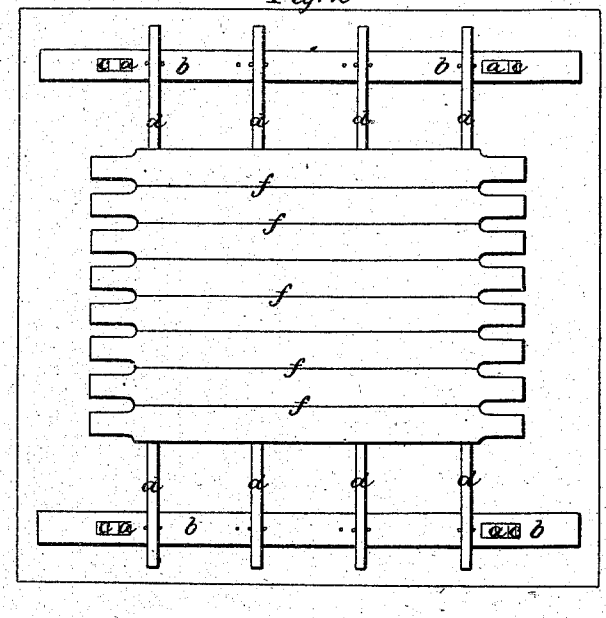


Fig. 2



Witnesses

Thos. Tuscl

Wm. Freurn

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attys

UNITED STATES PATENT OFFICE.

ANDREW DERROM, OF PATERSON, NEW JERSEY.

IMPROVED TRESTLE-BRIDGE.

Specification forming part of Letters Patent No. **48,530**, dated July 4, 1865.

To all whom it may concern:

Be it known that I, ANDREW DERROM, of Paterson, in the county of Passaic and State of New Jersey, have invented new and useful Improvements in Trestles for Bridges, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The present invention consists, first, in securing the cap of the trestle to and upon the legs or standards of the same by means of a wedge-shaped piece driven into and up through the cap from its under side and bearing against the upper portion of the leg therein, tightly and firmly holding the cap and leg together and in the proper position; second, in the use of adjustable feet for the legs of a trestle, which are so arranged and attached thereto as to adjust themselves to the inequalities of the surface upon which they may rest; third, in attaching to, and at or near the lower end of, the trestle-legs one or more horizontal radiating or projecting rods, so that by surrounding or completely covering the same with any common heavy materials—such as large stones, &c.—the legs are prevented from being affected by the currents of the stream in which they may be placed and other well-known causes, and thus made and preserved more firm and rigid therein.

In the accompanying plate of drawings my improvements are represented as applied to a bridge, Figure 1 being a vertical section through one trestle thereof; Fig. 2, a plan or top view of one section of a bridge between two trestles; Fig. 3, a detail view of a trestle-foot; and Figs. 4 and 5, other detail views, to be hereinafter particularly referred to.

a a in the drawings represent the two legs of the trestle, made of any desired length and size, and of any suitable material, either wood or metal, placed parallel, or nearly so, to each other, across which, and extending from one to the other and a little beyond each, the cap *b* is placed, having suitable-shaped apertures at each end for the legs to pass through. The cap-piece *b* can be made of wood or any other suitable material, and into each of its apertures, through which the upper ends of the legs are passed, as described, a wedge-shaped piece, *c*, is driven from the under side thereof, and brought to a tight bearing thereon between the leg and cap-piece, firmly and securely fastening and holding the two together, or the cap upon its legs.

d d d, &c., represent a series of longitudinal beams or balks running from trestle to trestle, placed parallel to each other at short distances apart, and over and across which the planking *f f*, constituting the road-bed of the bridge, is laid, the balks and planking being secured to each other and to the trestles in any proper manner.

g represents the trestle-feet, hung upon a short shaft, *h*, of the lower end of the legs, and turning upon the same, the legs being cut away, as seen in detail view, Fig. 3, at *l*, so as to allow the feet to incline toward them, and thereby conform to any unevenness in the surface upon which they may rest. The trestle-feet may be made of various shapes and sizes, according to the contour and nature of the ground upon which they are to rest, such as, for instance, of a flat or disk shape, or with two cross arms or pieces.

The trestles, constructed and arranged as above described, when desired to bridge a stream, are sunk, one after another, and at desired distances apart, in the water until they rest upon the bottom thereof, when the balks and planking are then laid across the same, as above described; or, in lieu of first fastening the parts composing the trestles together before they are placed in the stream, each leg can be inserted by itself and then its cap attached thereto by the wedge-shaped pieces, as before described, and the remainder of the bridge fastened thereon in any proper manner.

If any trestle should settle, or either one of its legs, thus causing the road-bed to be uneven, by my improvements it is easily obviated, as it is only necessary that the wedges of such trestle or of its leg should be first loosened, and the cap-piece can then be raised to the proper level by any suitable lever arrangement, when it is again fastened by setting the wedge as before, the advantages of which are evident.

In case the current of the stream that it is intended to bridge is strong or its waters deep

which sometimes will cause a lifting or raising of the trestle, I secure to and near the lower ends of its legs a series of radiating or projecting arms, *h h*, &c., around and over which I cause to be thrown a sufficient quantity of heavy materials—such as, for instance, large stones, as represented at *m* in Fig. 1—which, by their weight, counterbalance the upward tendency of the bridge, caused by the current or depth of the stream, and retain and hold the legs firmly upon the bottom thereof.

From the above description it is evident that my improvements in trestles for bridges render the bridge exceedingly simple and easy to be put together, as well as readily adjustable to any and all inequalities in and the nature of the bottom of the river that it is intended to bridge, the great advantage and importance of which, in the erection of bridges to be used for military purposes, are evident. Bridges with my improved trestle, it may be here remarked as one evidence of its utility and practicability, and of its especial adaptation to military purposes, were constructed and erected by me during the siege of Suffolk, Virginia, in April, 1863, and were there subjected to the severest tests with complete success, and were so certified to and strongly recommended by the commanding general, Brigadier-General George W. Getty, at that place; and it is evident that by driving the wedge into the cap from the under side thereof, as described, the greater the pressure upon the said cap from its upper side the tighter it is held by the wedge.

In lieu of using only one wedge, two or more may be used, if desired, but I deem one to be sufficient for all practical purposes; and, furthermore, the upper ends of the legs may be made of a wedge or tapering shape, if desired, although it is not necessary in order to hold the cap thereon.

Although I have described my improvements as particularly applicable to bridges for streams, they may as well be applied to the erection of staging, scaffolding, and to various other purposes, and therefore I do not intend limit myself to their use for bridges as the only purpose to which they may be adapted.

The trestle may, if deemed necessary, be braced by diagonal or cross braces fastened thereto in any proper manner.

I claim as new and desire to secure by Letters Patent—

1. Securing the cap-piece to the legs of a trestle to be used for bridges, &c., by means of one or more wedge-shaped pieces driven into the same from the under side thereof, substantially as herein described.

2. The adjustable feet for the trestle-legs, arranged upon the same, substantially as herein described, and for the purposes specified.

ANDW. DERROM.

Witnesses:

ALBERT W. BROWN,

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