United States Patent Office.

ROBERT W. SMITH, OF TIPPECANOE, OHIO.

Letters Patent No. 66,900, *dated July* 16, 1867.

IMPROVEMENT IN BRIDGES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ROBERT W. SMITH, of Tippecanoe city, in the county of Miami, and State of Ohio, have invented a new and useful Improvement in Bridges; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a vertical longitudinal section.

Figure 2 is a horizontal section of one side on the line *x x*.

The same letters are employed in both figures in the indication of identical parts.

A is the sill, which in the case represented is composed of three parallel flat pieces of timber, laid near to but not in contact with one another. This number is, however, not absolute. B is the chord, similarly constructed, but it may be made of lighter pieces C C are the posts. The end posts C^1 are vertical, as also the two central posts C^2; all the others marked C are inclined on each side upwards from the centre towards the respective ends. They are attached above and below to the sill and chord-pieces by bolts passing from side to side through the whole. When the sills and chords are composed of more than two pieces the posts are placed alternately on each side of the middle timber. The posts are framed into the sills and chords by cutting partly from each. The braces D D are set diagonally between the opposite faces of the posts C C, reaching from one post at the top to the base of the second post, in succession. The end braces rest against the base of the vertical posts C^1, and these, near the middle, are set into a notch cut in the vertical middle posts C^2. The braces D^1 are placed on each side of the centre posts C^2, their feet resting against the posts C. These braces D between the inclined posts D are not framed into the posts, but rest squarely against the posts at the top and bottom, the angle only touching the sills and chords. C^1 D^2 are braces from the base of the end posts, framed into the side of the post C near the top. E and E′ are the upper and lower cross-ties, on one or the other of which the floor of the bridge is laid. The bridge represented is known as a double-truss bridge, as there are two sets of posts and braces. Bridges may be made with a single truss, or with three or more, depending upon the strength required.

The advantages claimed for this bridge are its strength, owing to the equal distribution of the load; its staunchness following from the mode of bracing; and its lightness and cheapness. All iron supporting and brace-rods, and also the cast-iron triangular foot-pieces in common use, are dispensed with.

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

1. The bridge constructed with inclined posts C C, in combination with the braces D D, resting equally against the sides of the posts, and arranged in relation to the sills and chords, substantially as described.

2. In combination with the inclined posts and braces, as described, I claim the vertical central posts C^2, and braces D^1, substantially as described.

R. W. SMITH. [L. S.]

Witnesses:

JNO. T. WOODWARD,

C. F. BOWER.