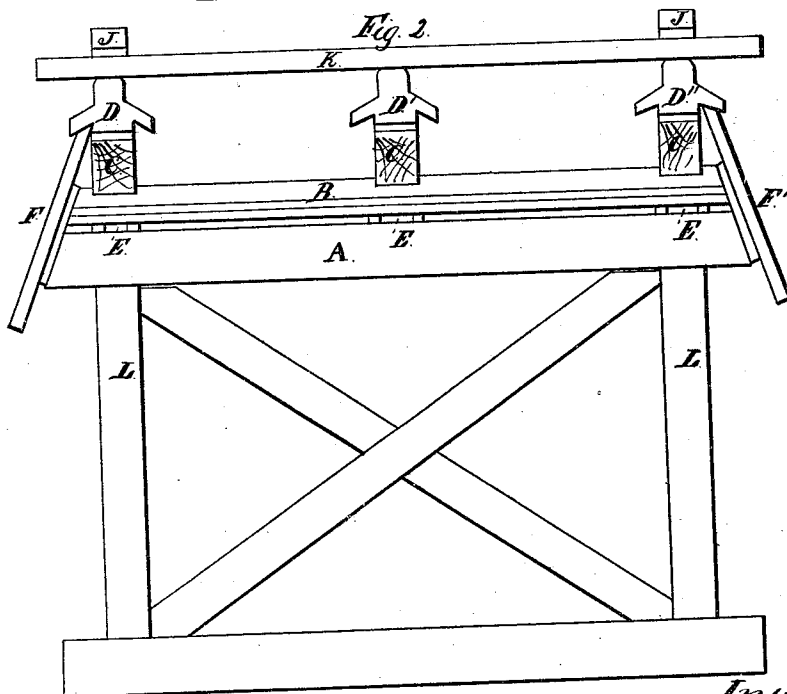
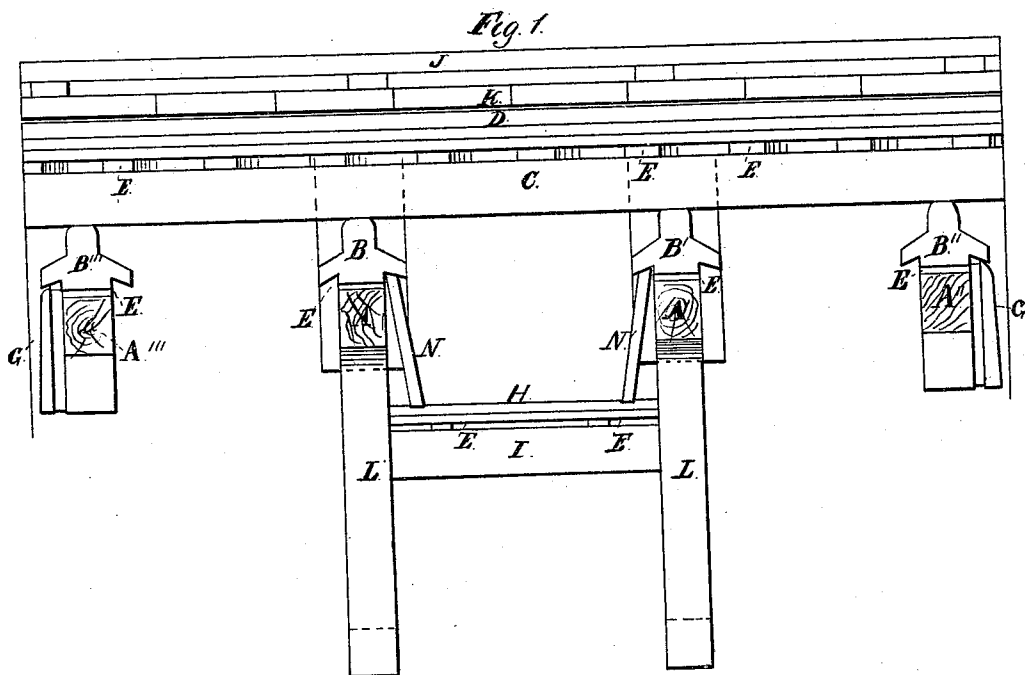


F. Monroe.
Truss Bridge.

No 54,004.

Patented Apr. 17, 1866.



Witnesses
Smith Green
Peter L. Kemp

Inventor
Frederic Monroe
Amos Braulley atty.

UNITED STATES PATENT OFFICE.

FREEDOM MONROE, OF BRUCE, MICHIGAN.

IMPROVEMENT IN BRIDGES.

Specification forming part of Letters Patent No. 54,004, dated April 17, 1866.

To all whom it may concern:

Be it known that I, FREEDOM MONROE, of the town of Bruce, in the county of Macomb and State of Michigan, have invented a new and useful Improvement in Bridges; and I do hereby declare the following to be 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 longitudinal vertical section through a railroad-bridge, and Fig. 2 a vertical section through the same, with my improvement applied thereto.

My invention consists in protecting the main timbers of the bridge from wet and dirt from above, to preserve them from decay.

The following description will enable anyone skilled in the art of bridge-building to practice my invention.

In the annexed drawings, similar letters of reference represent corresponding parts of the different figures.

Referring to the drawings L L represent the posts of the bridge, which are united by cross-ties I in the ordinary manner. A A' A'' A''' represent the abutment and cross-beams, and C C' C'' the stringers. These separate timbers I cover with roofing-strips, marked B B' B'' B''' and D D' D'', respectively. These roofing-strips are made wide enough to lap well over the main timbers, and are grooved out on the under side to throw the water clear off the timbers they are intended to cover; and the said strips are cut away on the upper side, so as to present a comparatively small surface to the timbers they are intended to support, and instead of being laid immediately upon the timbers they are intended to protect they are slightly elevated by the introduction between them and

the beams, stringers, &c., of thin cleats, E E E, &c., which are set diagonally across the timbers and under the roofing-strips.

To protect all of the timbers and keep the water from dripping off of the roofing-strips into the cross-tie joints and braces, I arrange diagonal water-tables N N' under the eaves of the strips at B B', and carry them down to the roofing-strip H, over the cross-tie I, which, being made and arranged the same as the other strips, throw the water clear of the timbers composing that part of the bridge.

To protect the ends of the cross-ties A A' A'' A''', the diagonal tables F F are applied thereto in the same manner that the pieces N N' are applied, but they are held from direct contact with the ends of the timbers by the introduction of diagonal cleats.

To protect the outside of the abutment-beams from the damp in the ground a shield is applied thereto in the same manner that the roofing-strips are applied to the main timbers, as shown by G.

From what I have above written it will be seen that my improvement in bridges is confined to roofing and protecting the main timbers thereof, without regard to the manner in which the bridge is constructed.

What I claim, therefore, and desire to secure by Letters Patent, is—

Protecting the main timbers of the bridge from the effects of the weather by combining the roofing-pieces B B' B'' B''', D D' D'', F F', N N', and H with them, respectively, substantially as shown and described.

FREEDOM MONROE.

Witnesses:

J. D. HANSCOM,
E. F. MEAD.