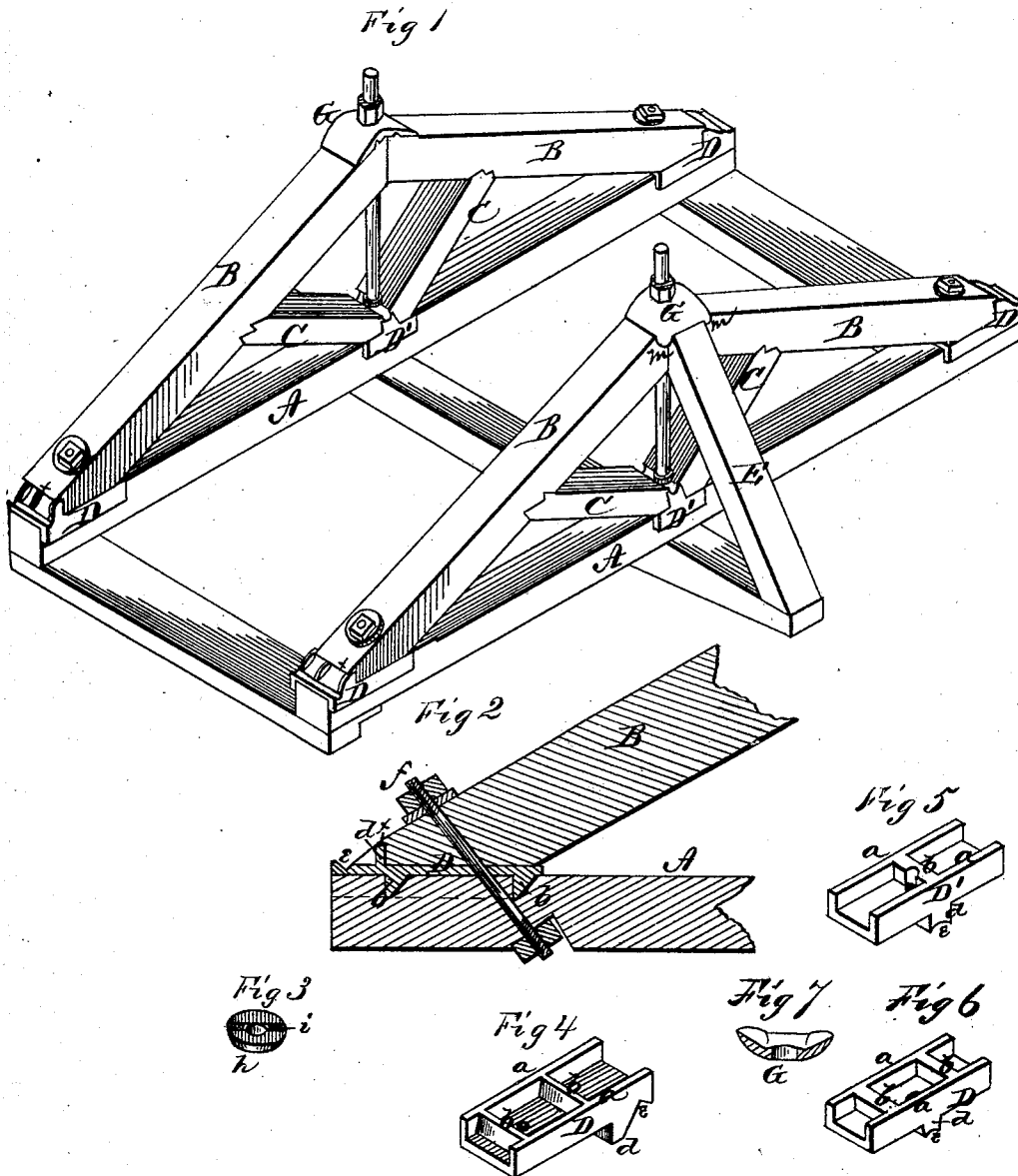


A. REILING.
Bridges.

No. 145,685.

Patented Dec. 16, 1873.



WITNESSES.
H. L. Ousand
C. L. Evert

INVENTOR
Arnold Reiling.
By Alexander Ainsworth
Attorneys.

UNITED STATES PATENT OFFICE.

ARNOLD REILING, OF BELLEVUE, IOWA.

IMPROVEMENT IN BRIDGES.

Specification forming part of Letters Patent No. 145,685, dated December 16, 1873; application filed September 24, 1873.

To all whom it may concern:

Be it known that I, ARNOLD REILING, of Bellevue, in the county of Jackson and in the State of Iowa, have invented certain new and useful Improvements in Bridges; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, making a part of this specification.

My invention relates to wooden bridges having metal shoes at the joints between the bed-timbers or sills and the other timbers of the bridge; and the nature of my invention consists in the construction of said metallic shoes, as well as other metal attachments to the bridge, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a perspective view of a section of a wooden bridge embodying my invention. Fig. 2 is a longitudinal section through a part of the same; and Figs. 3, 4, 5, 6, and 7 are detached views of the metal parts of the bridge.

A A represent the bed-timbers, and B B and C C the bracing-timbers, of a wooden bridge. These timbers may all be constructed and arranged in any desired manner. D D represent the shoes at the points where the timbers B B connect with the bed-timbers A A. These shoes are constructed as shown in Figs. 1, 2, and 4, they being provided with longitudinal flanges *a a*, projecting downward, one from each side. Each shoe is also provided with transverse flanges *b b* on its under side, between the flanges *a a*, and all these flanges are let into the wood of the bed-timber A. On the upper side of the shoe D is an abutment, *d*, against which the end of the timber B rests, the said abutment being let into the wood so that a part of the wood will overlap the upper edge of the abutment, as shown particularly at *x* in Fig. 2. This will prevent water

from collecting between the wood and the metal, as the water will run from the timber B to the outer side of the abutment *d*, and into a transverse groove or gutter, *e*, formed in the shoe, and out at either side. The parts are then fastened by a bolt, *f*, passing through the shoe and timbers. In the center of the bridge, where the timbers C C meet and join the bed-timber A, a double shoe, D', is used, the flanges *a* and *b* of which may be arranged either as shown in Fig. 5 or in Fig. 6. The abutment *d*, in this case, is in the center of the shoe, with the groove *e* formed in the upper edge of the abutment, so that the water from the timbers C C will pass into said groove or gutter, and run off at the sides. *h* represents the washers used in the bridge, which are provided with a groove, *i*, in the under side, so that any water that might pass in between a washer and the wood will collect in said groove and pass out. G represents the cap covering the upper ends of the beams B B and the side brace E, said cap being made with projections *m m* extending downward at the angles between the side brace E and the timbers B B, to carry off the water and prevent it from collecting in the joints.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The metallic shoe D D', constructed as described, with flanges *a b*, abutment *d*, and groove or gutter *e*, all substantially as and for the purposes herein set forth.

2. The washer *h*, provided with the groove *i* in its under side, for the purposes herein set forth.

3. The cap G, provided with projections *m m*, for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 5th day of August, 1873.

ARNOLD REILING.

Witnesses:

HENRY BOWER,
FRANK HANORKE.