

B. F. GRAHAM.
Bridge Trusses.

No. 146,332.

Patented Jan. 13, 1874.

Fig. 1.

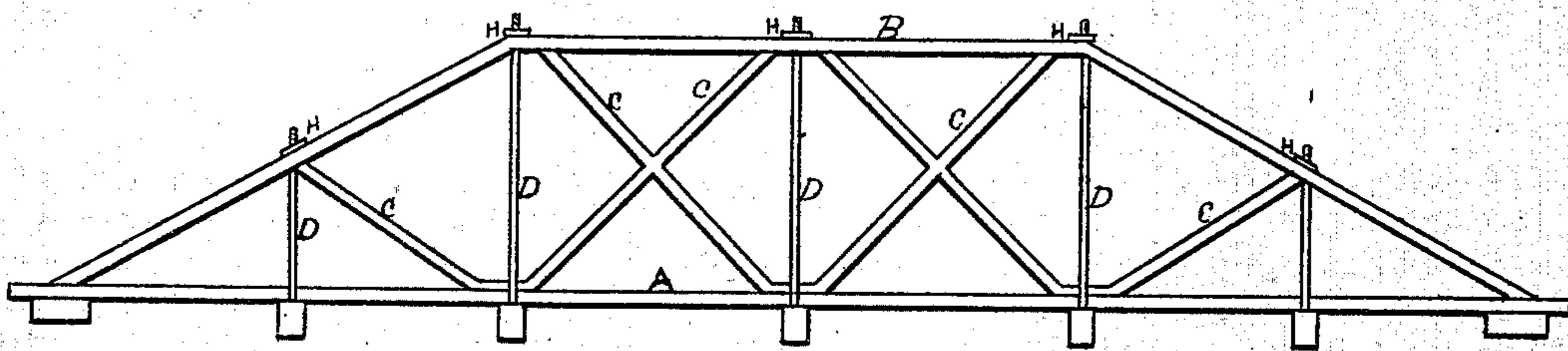


Fig. 2

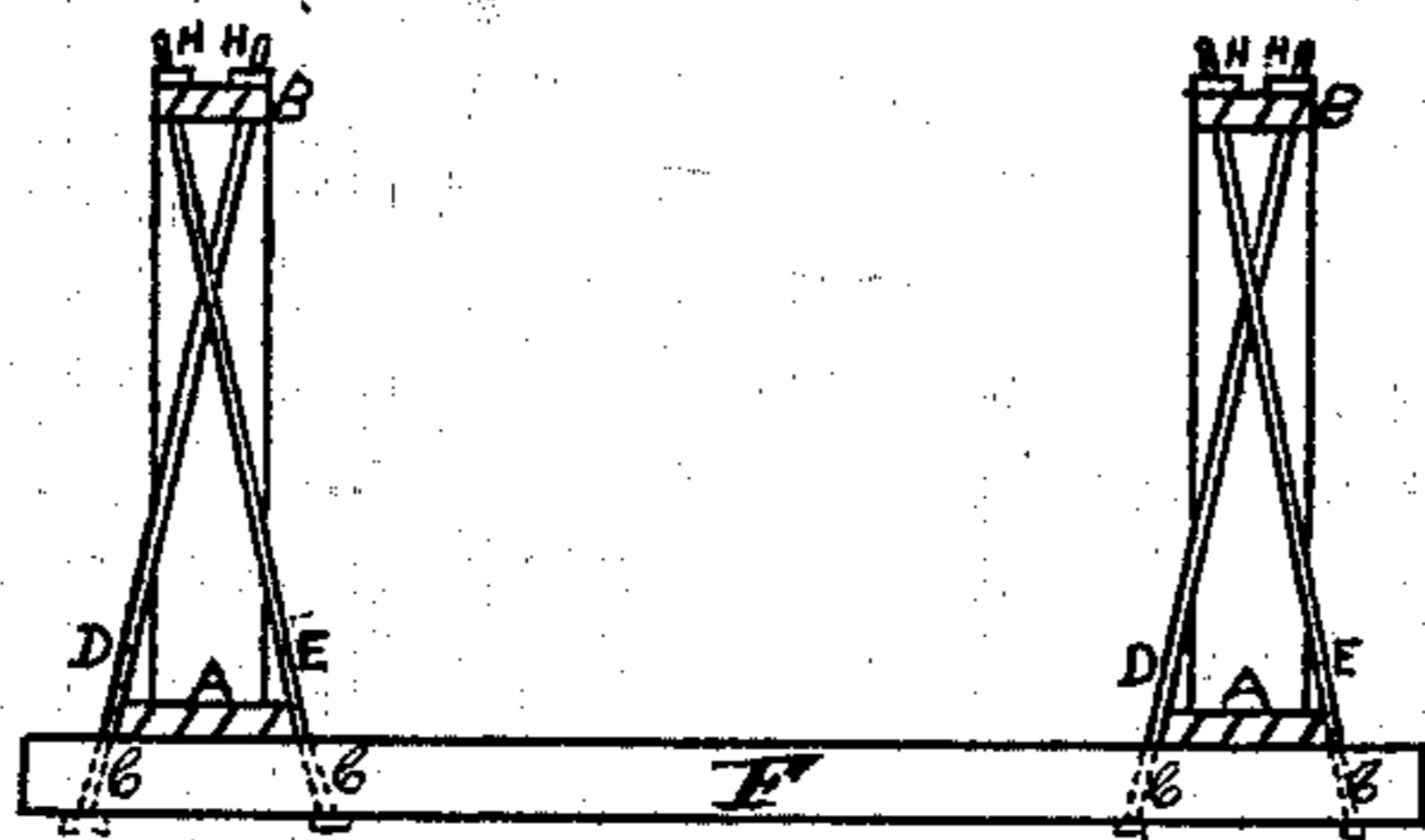
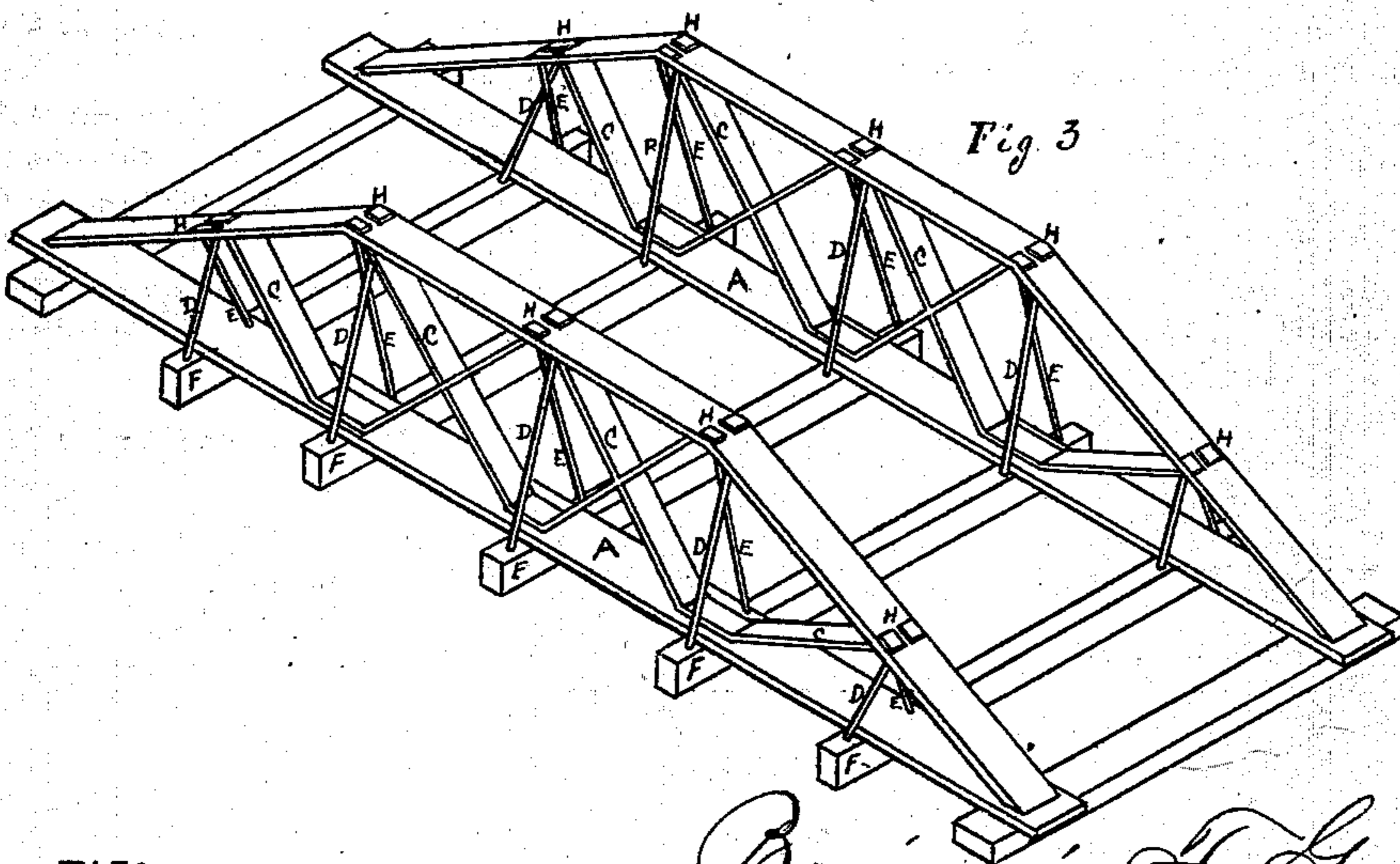


Fig. 3



Witnesses
John L. Boome.
Chas. Milton Richardson.

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UNITED STATES PATENT OFFICE.

BENJAMIN FRANKLIN GRAHAM, OF SAN JOSÉ, CALIFORNIA.

IMPROVEMENT IN BRIDGE-TRUSSES.

Specification forming part of Letters Patent No. **146,332**, dated January 13, 1874; application filed November 28, 1873.

To all whom it may concern:

Be it known that I, BENJAMIN FRANKLIN GRAHAM, of San José, Santa Clara county, California, have invented an Improvement in Trusses; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment.

My invention relates to certain improvements in trusses for bridges and other uses; and it consists mainly in a novel arrangement and combination of the main truss-rods placed angularly to each other and transversely to the length of the bridge, by which I am enabled to do away with all the outside struts or braces ordinarily employed to steady the trusses and prevent lateral motion of the same. I am also enabled by the use of these rods to straighten and set up any trusses which may have become inclined, bent, or buckled by reason of weakness in the top chords.

Referring to the accompanying drawings, Figure 1 is a side elevation of my truss. Fig. 2 is a transverse section. Fig. 3 is a perspective view of same.

A is the lower chord of a bridge, roof, or any kind of truss to which my invention is to be applied. B is the top chord, and C C are the braces and straining-beams; an ordinary truss being represented in the present case. The main truss-rods D and E, which unite the upper and lower chords, pass through the upper chords, cross each other, passing through or on the outside of the lower chords and through the center of the floor-beams F, as at C, Fig. 2. In a low truss the rods can be

placed a little oblique in the top chord, which will enable them to cross each other, as desired.

When every thing is in place the nuts H H are screwed up, thus holding the whole truss firm and vertical.

If an old truss has become inclined to one side or the other, the nuts H may be loosened and those upon one side or the other can be screwed up until the truss assumes an upright position, after which all the nuts can be set up tight.

In case of old or new bridges where the upper chords prove weak and show a tendency to buckle, this system of crossing the main truss-rods offers a ready means of straightening it and preserving it in line, and in new work all the rods and braces which are usually placed outside the truss and at right angles with the length of the bridge can be dispensed with. My system of crossing the rods will keep the whole truss steady and straight, thus saving a great amount of labor and material in every bridge.

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

The rods D and E, when combined with a bridge, roof, or any other truss, and crossing in pairs, substantially as and for the purpose herein described.

In witness whereof I have hereunto set my hand and seal this 19th day of September, A. D. 1873.

BENJAMIN FRANKLIN GRAHAM. [l. s.]

Witnesses:

EDWARD P. REED,

LOUIS H. VAN SCHAICK.