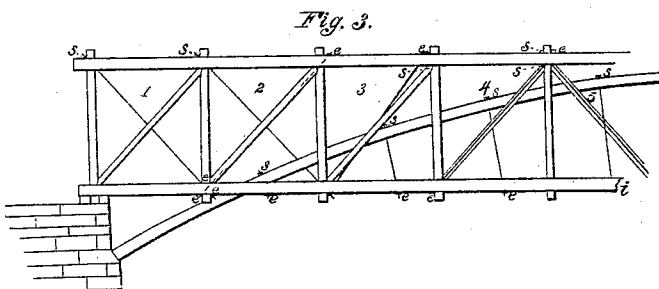
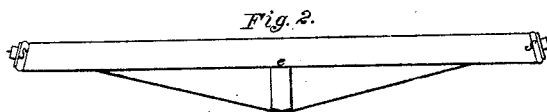
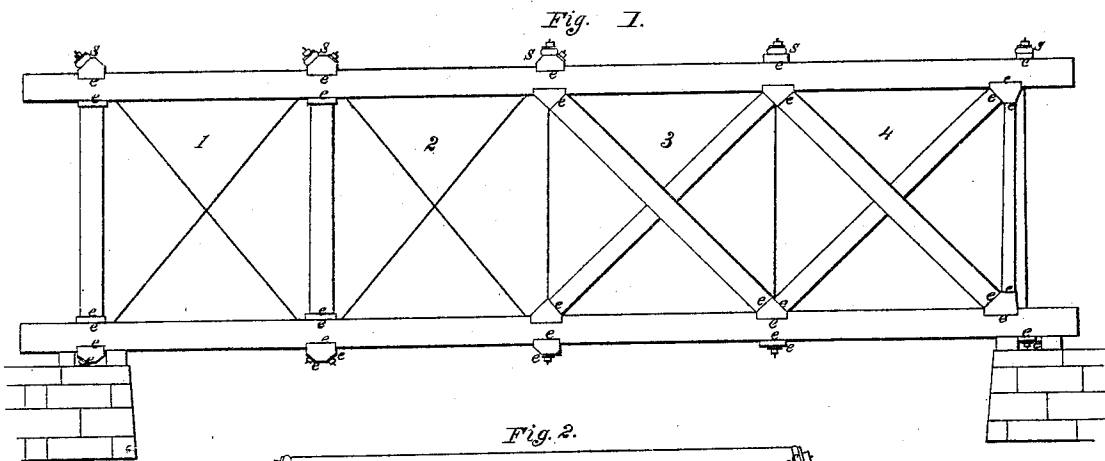


*J. C. Briggs.
Truss Bridge.*

N^o 22,106.

Patented Nov. 23, 1858.



UNITED STATES PATENT OFFICE.

JOHN C. BRIGGS, OF CONCORD, NEW HAMPSHIRE.

TRUSS-BRIDGE.

Specification of Letters Patent No. 22,106, dated November 23, 1858.

To all whom it may concern:

Be it known that I, JOHN C. BRIGGS, of Concord, in the county of Merrimack and State of New Hampshire, have invented a new and Improved Mode of Giving Elasticity to the Compressed Joints of Truss-Frames; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and the letters of reference marked thereon.

My invention consists in the application of springs to the bearings of either the posts, main braces, counter braces, iron rods of all descriptions, or to any compressed joint in trusses constructed, either of wood, iron, or wood and iron combined. The most convenient and available material for these springs is india rubber. The shape most generally required is the same as that of the ordinary india rubber car-springs of the market; that is, short solid cylinders, with holes through their centers, as represented by Figure 4. This is the shape most suitable for iron rods. Those for other compressed joints may be of a size and shape to suit the particular size and shape of the adjacent surfaces. The place of application of these springs in ordinary wood and iron truss-frames is most convenient, as represented by the drawings; that is, generally under the washers of the iron rods, as S. S. S. Figs. 1, 2 and 3.

Panels 1 and 2, of Fig. 1, represent a side view of a Pratt truss-frame, and panels 3 and 4 the same of a Howe truss. Fig. 2 represents a truss beam. Fig. 3 represents an arch combined with a truss frame, in which the different panels show some of the various different modes in use of arranging the diagonal supports.

S. S. S. are the points where I think the springs may generally be most economically applied. E. E. E. are points where the springs might be applied with similar effects. The application at one point in the panel is considered to be generally sufficient. It may, however, be sometimes desirable to apply it at several.

I have intended to represent by the drawing, the leading features of all the truss

frames in use, and thus to show the applicability of my invention to all truss frames. There result from its use the following advantages:

1. The truss-frame is rendered more elastic, and therefore less liable to be broken by a sudden strain, such as would be caused by the impact of a falling body. For the same reason the durability of trussed bridges and other trussed structures is increased, by lessening the effects of the constant jar and violent concussions to which they are exposed. This is true of trusses made of any kind of material, as all wood, all iron, or both combined.

2. The springs of themselves (by having them previously tested and gaged) serve as dynamometers, by which the strains upon different parts of a truss can be more accurately ascertained and more correctly proportioned. This is especially desirable when two systems are combined, as an arch and truss frame. Fig. 3 shows an instance of this.

3. Unequal contraction and expansion of different parts of the same truss, from change of temperature, can take place without doing violence to each other, or making loose joints. The thickness of the springs should be such as to give sufficient elasticity for this purpose.

4. The springs show when the strain produced by a counter-rod or brace upon a main rod or brace is equivalent to a given load, thus making it practicable so to load any trussed structure, by means of counters, that it shall remain inflexible under the maximum load admissible thereon. They enable this desirable quality in trusses to be gained, with greater safety than it is now done.

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

The application of india rubber, or equivalent springs, to the compressed joints of truss frames and truss beams, substantially in the manner and for the purposes described above.

JOHN C. BRIGGS.

Witnesses:

P. S. CHANDLER,
JOHN ABBOTT.