

No. 627,859.

Patented June 27, 1899.

J. E. LOCKE.

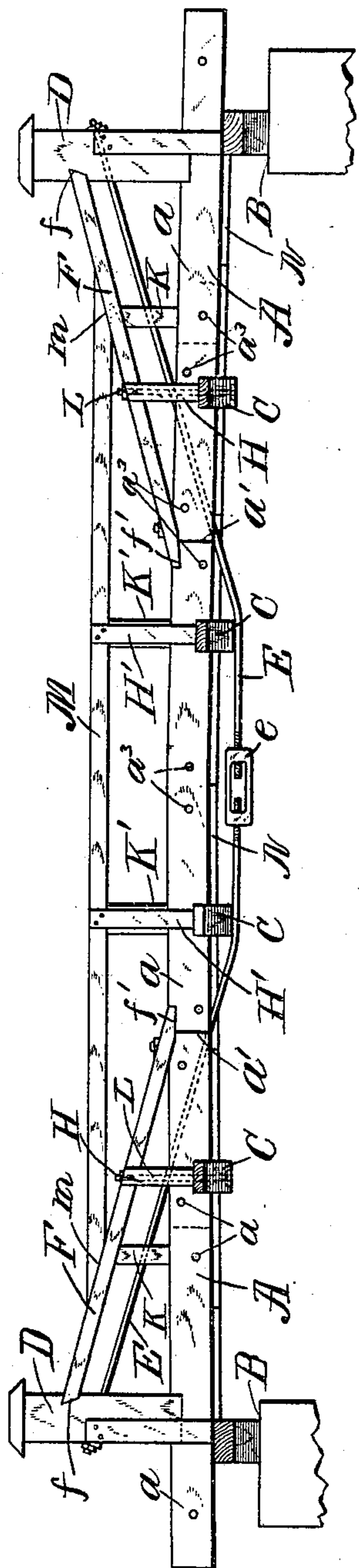
BRIDGE.

(Application filed Sept. 26, 1898.)

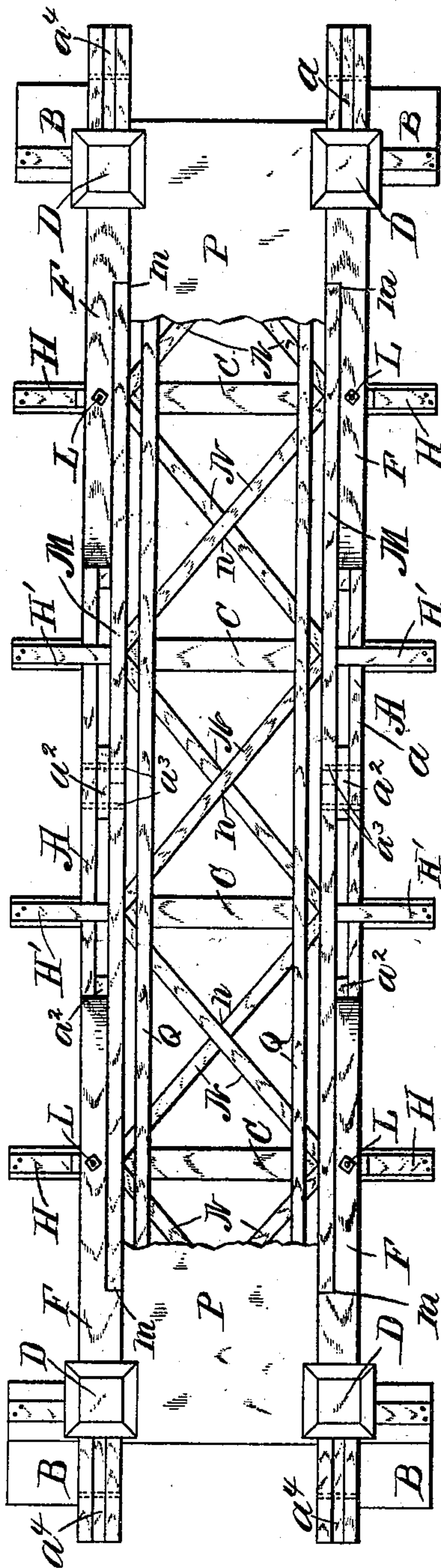
(No Model.)

2 Sheets—Sheet 1.

七



四
三
二
一



Witnesses

John V. Hall
Percy C. Bowen.

Inventor.

Inventor.
J. E. Locke,
by Wilkinson & Fisher,
Attorney S.

No. 627,859.

Patented June 27, 1899.

J. E. LOCKE.

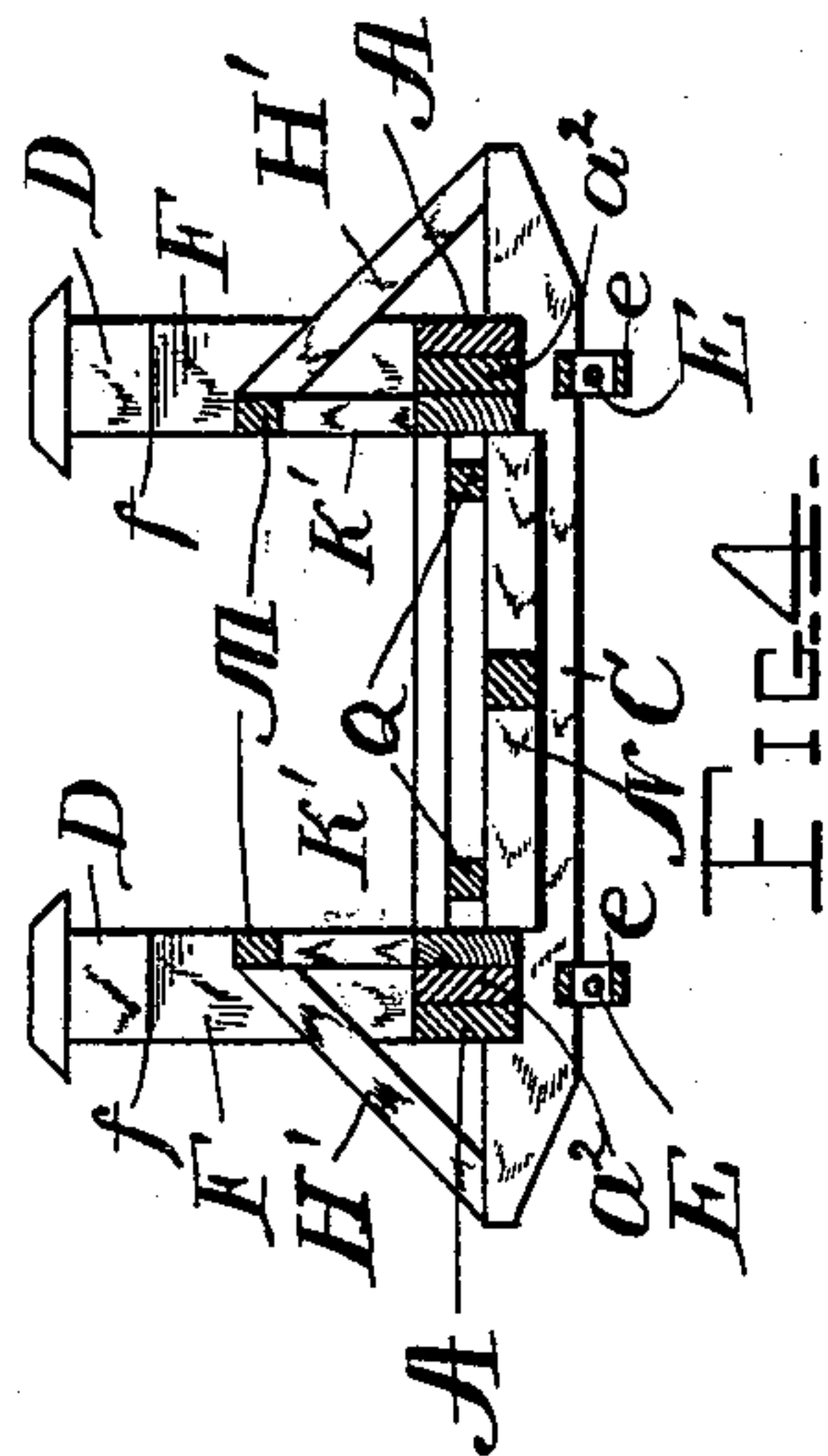
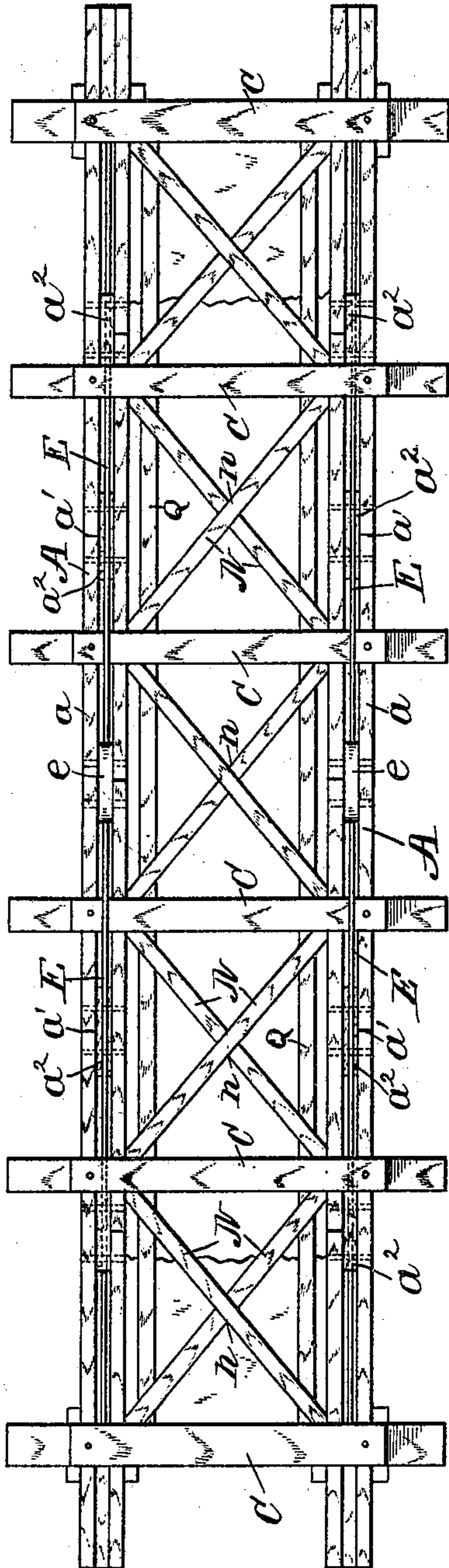
BRIDGE.

(Application filed Sept. 26, 1898.)

(No Model.)

2 Sheets—Sheet 2.

FIG. 3.



Witnesses
John N. Kalk
Rey C. Bowen

Inventor
J. E. Locke,
by *Williamson & Fisher*,
Attorneys.

UNITED STATES PATENT OFFICE.

JAMES E. LOCKE, OF CROSS HILL, SOUTH CAROLINA.

BRIDGE.

SPECIFICATION forming part of Letters Patent No. 627,859, dated June 27, 1899.

Application filed September 26, 1898. Serial No. 691,904. (No model.)

To all whom it may concern:

Be it known that I, JAMES E. LOCKE, a citizen of the United States, residing at Cross Hill, in the county of Laurens and State of South Carolina, have invented certain new and useful Improvements in Bridges; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in bridges, and more especially to a certain form of truss-bridge possessing the novel features and advantages hereinafter particularly described and claimed.

In order to clearly describe my said invention, reference will be had to the accompanying drawings, in which—

Figure 1 represents my improved bridge in side elevation. Fig. 2 represents a top plan view of the same. Fig. 3 represents an inverted plan view of the same, and Fig. 4 represents a central transverse sectional view of the bridge.

Similar letters refer to similar parts throughout the several views.

A A represent two truss-beams resting near their ends upon the abutments B. These beams are each made up of a plurality of timbers or strings a , extending parallel to each other and spliced, as at a' , in such a manner as to break joints. At each splice a block a^2 is inserted between the timbers, and bolts a^3 , passed therethrough as well as through the side timbers of the beams, hold them together. Blocks a^4 may be also inserted between the side timbers of the beams, at or near their ends, as shown.

The beams A are slightly bowed—that is, the bridge is higher at its center than at its ends, varying, of course, in degree as any particular case may demand.

A number of cross-timbers C are secured by mortising or otherwise to the lower sides of the truss-beams and act both as braces and as supports for the bridge-flooring. These tie-beams or cross-timbers C extend at each end out beyond the sides of the bridge and support the stays hereinafter described.

At or near each end of the truss-beams and preferably mortised therein are the end posts D. To these posts are secured the rods E, the

said rods passing through the posts, passing downward between the side timbers of the truss-beams, and then beneath the two center tie-beams C, being joined at their inner ends near the center of the bridge by the turn-buckles e . It will thus be seen that the tie-rods on each side are composed of but two members, reducing the number of joints to a minimum. In this way the beams A are trussed; but to further strengthen the posts and to further add to the rigidity and strength of the structure the struts F are provided. These struts are mortised or otherwise secured to the posts D, as at f , and slanting downward are mortised or otherwise secured to the truss-beams, as at f' .

The strain on the struts F being one of compression it becomes necessary to provide against any lateral bending or sidewise movement. This is done by providing the stays H and K and the rods L.

In addition to the struts F for overcoming the compression strains I provide the side rails M, which are secured at their ends, as at m , at points near the middle of the struts F. These side rails are braced by the stays H' and K', the former being supported upon the projecting portions of the tie-beams C. It will thus be seen that in addition to forming a part of the strain-resisting system the side rails at the same time act as banisters and are quite useful in that respect, especially when the bridge is used as a foot or carriage bridge.

N N are cross-braces extending obliquely across the bridge, being secured at their ends to the inside of the truss-beams A and to the beams C where the former and latter join. These cross-braces are mortised into each other, as at n , where they cross, thereby causing one to resist any tendency on the part of the other to bend.

When used as a carriage or foot bridge, the flooring P is laid upon the timbers Q, but when used as a railroad-bridge the timbers Q may be moved closer together and the cross-ties placed upon them.

While reference has herein been made particularly to a wooden bridge, it is obvious that the herein-described bridge may be made wholly of iron, steel, or other metal, or partly of metal and partly of wood, and the princi-

ple of the invention would remain the same. Thus for the side timbers composing the truss-beams A plates of metal may be substituted, for the posts D iron posts may be substituted, and so, indeed, any of the wooden parts of the bridge may be replaced by iron without departing from the spirit of my invention. Obviously other changes involving merely mechanical variations and modifications may also be made without departing from the spirit of my invention; but

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In a bridge, the combination with truss-beams forming the chords of the bridge, of posts secured to said beams near the ends thereof; slanting struts secured to said posts and extending therefrom to the upper faces of said truss-beams; vertical stays for strengthening said struts; tie-beams extending across said bridge and secured to the lower side of said truss-beams; tie-rods secured at their outer ends to said posts and extending down beneath the center tie-beams, in the same vertical plane with said truss-beams and joined at their inner ends by turnbuckles at the center of the bridge and beneath each of said truss-beams, substantially as described.

2. In a bridge, the combination with truss-beams forming the chords of the bridge and each composed of a plurality of parallel jointed strings, of posts secured to said beams near the ends thereof; slanting struts secured to said posts and extending therefrom toward the center of the bridge and secured to the upper faces of the truss-beams; tie-beams extending across the bridge and secured to the lower faces of the said truss-beams, stays for strengthening said struts; tie-rods secured to the posts and extending down beneath the center tie-beams, the said rods being in the same vertical plane with said truss-beams, and each composed of two members, the members of each being joined at their inner ends by turnbuckles at the center of the bridge and beneath each of said truss-beams and

terminating at their outer ends where they join said post, said tie-rods located beneath said slanting struts and extending parallel thereto for a portion of their length; longitudinal braces, one over each of said truss-beams and secured at their ends to the said struts; crossed braces between said truss-beams, and lateral slanting stays secured to said braces and to the tie-beams, substantially as described.

3. In a bridge, the combination with truss-beams forming the chords of the bridge and each composed of a plurality of parallel jointed strings; of posts secured to said beams near the ends thereof; slanting struts secured to said posts and extending therefrom toward the center of the bridge and secured to the upper faces of the truss-beams; tie-beams extending across the bridge and secured to the lower faces of the said truss-beams; vertical stays for strengthening said struts; tie-rods secured to the posts and extending down beneath the center tie-beams, the said tie-rods being in the same vertical plane with said truss-beams and each composed of two members, the members of each being joined at their inner ends by turnbuckles at the center of the bridge and beneath each of said truss-beams; the said members terminating at their outer ends where they join said posts, and the said tie-rods extending for a portion of their length parallel to said slanting struts and beneath the same; longitudinal braces, one over each of said truss-beams and secured at their ends to the said struts; crossed braces between said truss-beams; lateral slanting stays secured to the horizontal braces and to the tie-beams; longitudinal timbers secured to the tops of said beams and flooring secured to said timbers, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES E. LOCKE.

Witnesses:

HENRY MARTIN,
JONES F. BOLT.