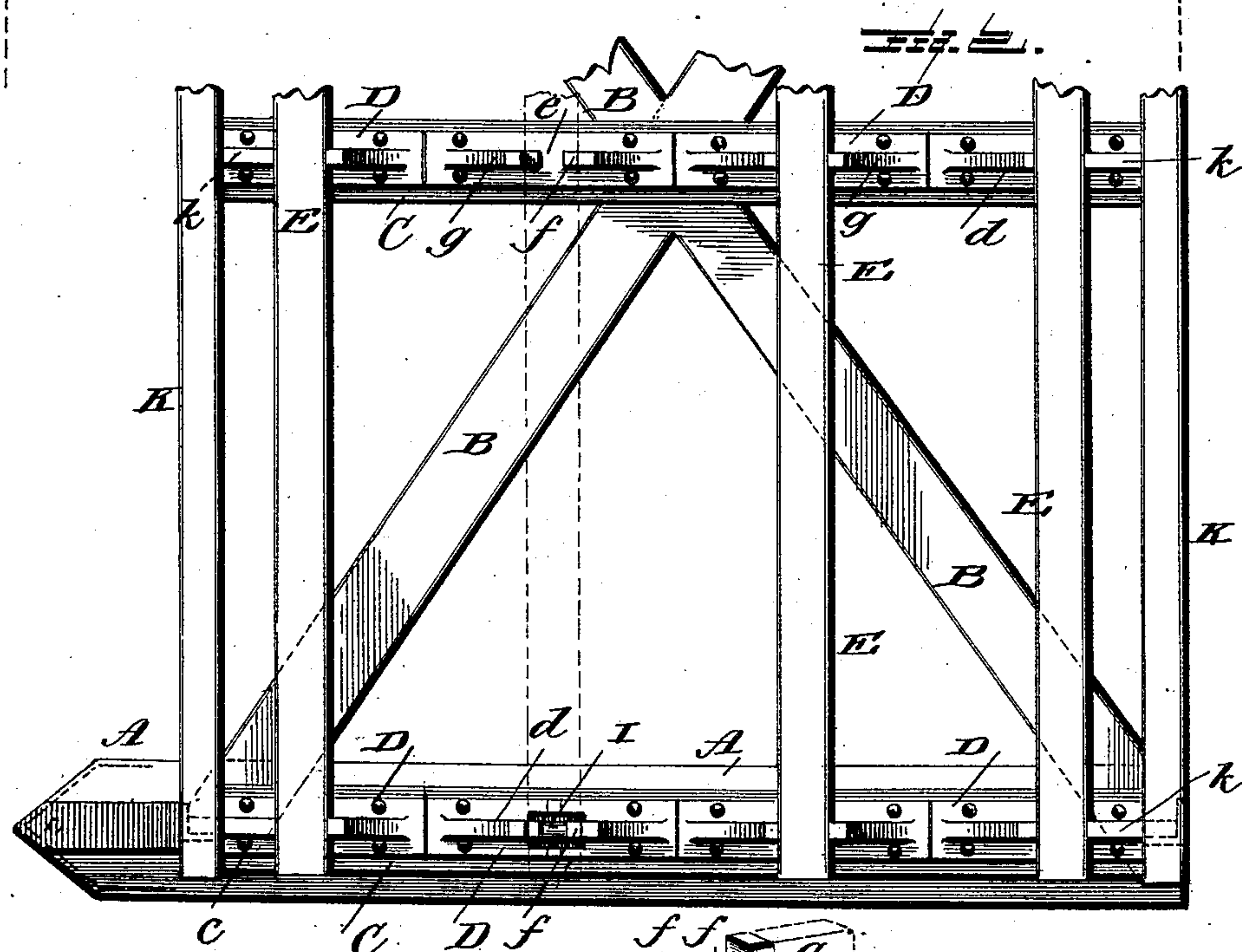


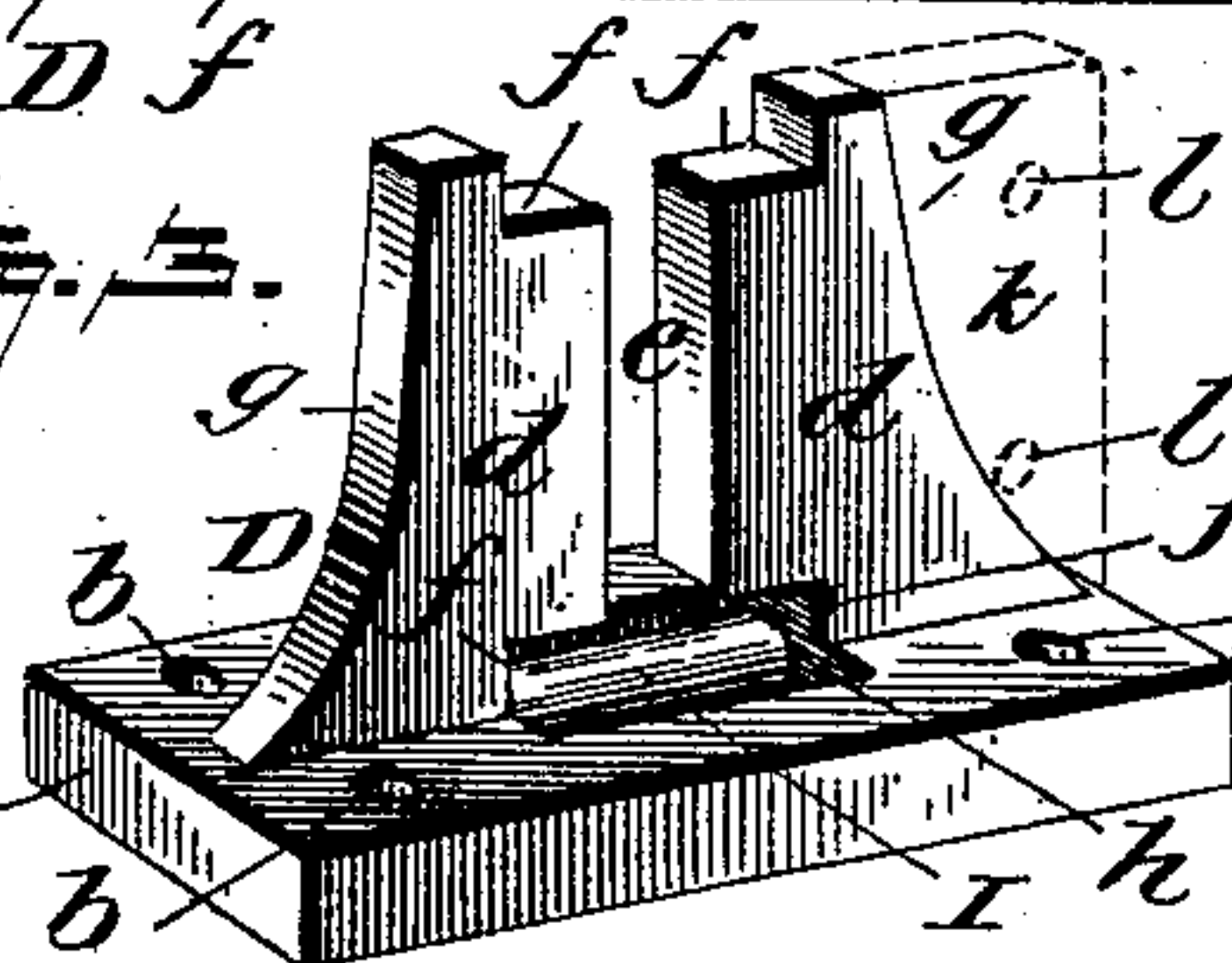
J. LOUNSBERRY.  
IRON BRIDGE.

Patented June 2, 1891.



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# UNITED STATES PATENT OFFICE.

JOHN LOUNSBERRY, OF OWEGO, NEW YORK.

## IRON BRIDGE.

SPECIFICATION forming part of Letters Patent No. 453,342, dated June 2, 1891.

Application filed February 24, 1891. Serial No. 382,461. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN LOUNSBERRY, a citizen of the United States, residing at Owego, in the county of Tioga and State of New York, have invented certain new and useful Improvements in Iron Bridges; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

This invention relates to certain new and useful improvements in iron bridges; and it has for its objects, among others, to provide a simple, cheap, and strong bridge wherein provision is made for the expansion and contraction of the beams without injury to any of the parts, and in which the beams shall be held against all movements, except endwise, occasioned by such expansion and contraction. I provide chairs, each of which is formed with passage-ways of a shape to conform to the shape of the beam, and beneath the bottom of the beam provide anti-friction rollers on which the said beam rests.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is an end elevation with the beams in vertical cross-section, showing a portion of a bridge constructed in accordance with my invention. Fig. 2 is a top plan of a portion. Fig. 3 is an enlarged perspective of one of the chairs.

Like letters of reference indicate like parts throughout the several views in which they occur.

Referring now to the details of the drawings by letter, A designates a pier or support formed of angle-iron, as seen in Fig. 1, suitably braced, as seen in said figure, and to the upper beams of the piers or supports are secured or supported the crossed timbers B of angle-iron, as seen in Figs. 1 and 2, and on these are supported and properly secured the transverse beams C, to which are secured the chairs D, which are constructed as shown best in Fig. 3, the chairs pref-

erably being made separately—that is, one for each beam—although two or more might be formed integral with each other, if preferred. The beams E are shown as I-shaped and the chairs are each formed with a correspondingly-shaped opening or passage therefor, as seen in Fig. 3. Each chair has the base *a*, formed with holes *b*, by which it may be secured in position by suitable means, as spikes *c*, and with a vertical rib or web *d*, which has a central passage *e*, and at the top and bottom two shoulders *f*, one upon each side of this central passage, and in the recesses thus formed the flanges of the beams fit, as seen in Fig. 1. Thus the beams are confined against all movements, except endwise, as they expand and contract. The outer faces of the web or rib of the chairs are concaved, as seen at *g*, so as to provide spaces between each two chairs to give sufficient circulation beneath the flooring of the bridge, as seen in Fig. 1, the boards H being shown in dotted lines resting upon the beams, and which boards are designed to be held in place in any suitable manner.

In the base of the chair is formed a chamber or cavity *h*, in which is journaled a suitable anti-friction roller I, the upper face of which is practically flush with the top face of the base and on which the bottom of the beam rests to allow of easy movement of the beam as it contracts and expands. This roller is of course arranged transversely to the length of the beam, as shown.

The guard-rails K are of any known or preferred form of construction and for the purpose of securing them in position the ribs or webs of the outside chairs may be extended, as shown in dotted lines at *k* in Fig. 3 and in full lines in Fig. 1, and provided with holes *l* for the reception of the securing means.

What I claim as new is—

1. A chair for bridge-work, formed with a base and a vertical web having a central vertical passage conforming to the shape of the beam it is designed to hold in place, as set forth.

2. A chair for bridge-work, formed with a base and a vertical rib formed with a vertical passage and shoulders at the top and bottom thereof, substantially as described.

3. A chair for bridge-work, formed with a base and a vertical rib having vertical passage

and shoulders at the top and bottom of the passage, and an anti-friction roller located at the bottom of the said passage, substantially as specified.

- 5 4. A chair for bridge-work, formed with a base and a vertical rib having vertical passage with shoulders at the top and bottom of the passage, and an anti-friction roller located at the bottom of the passage, the said rib being  
10 extended upon one side and formed with openings for the reception of securing means, substantially as specified.

5. An iron bridge consisting of the pier of angle-iron suitably braced, the crossed beams

supported on the piers, the chairs having ver- 15  
tical passages and anti-friction rollers, the beams held in said passages and resting on the rollers, and the side guards secured to extensions of the ribs of the outside chairs, substantially as shown and described. 20

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JOHN LOUNSBERRY.

Witnesses:

F. A. DARROW,  
J. B. WINTERS.