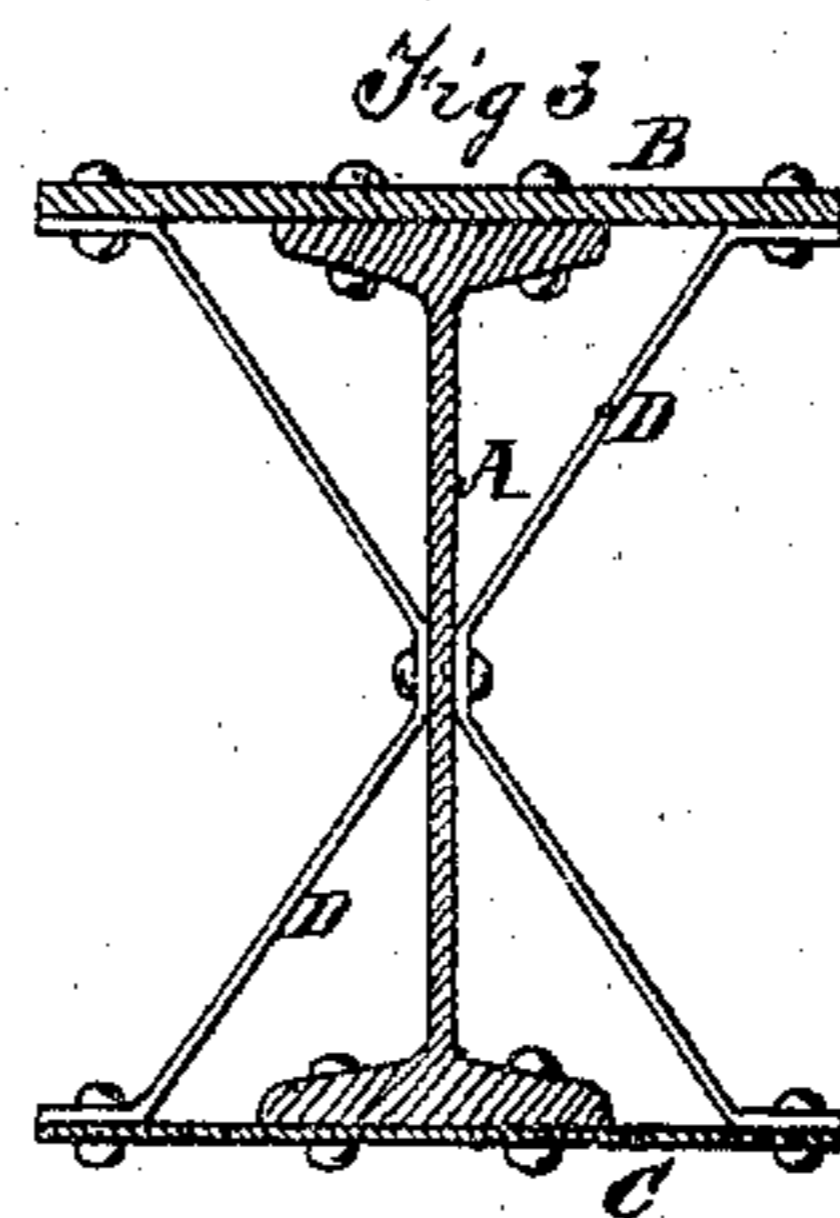
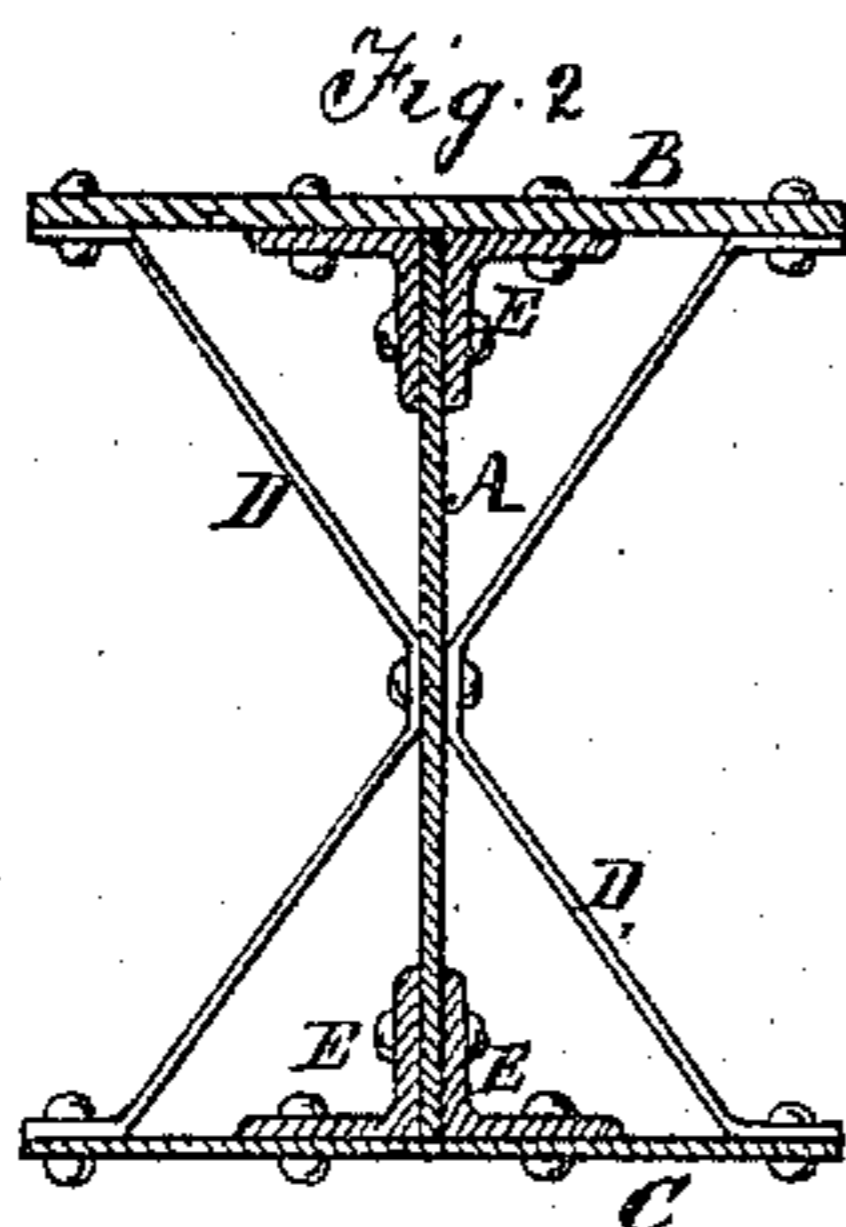
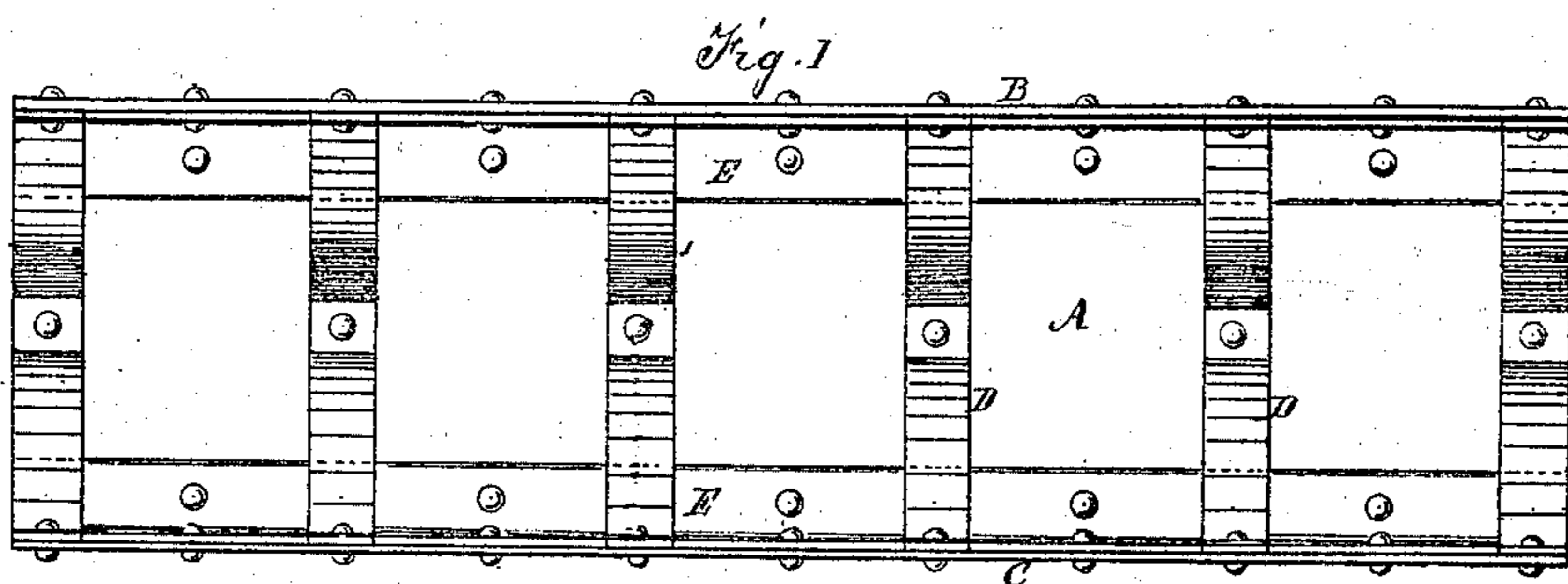


L. KIRKUP.  
Wrought-Iron Beams.

No. 138,029.

Patented April 22, 1873.



*H. W. Henley  
J. Cook*

*James Kirkup by Oliver D. Davenport*

# UNITED STATES PATENT OFFICE.

LANCELOT KIRKUP, OF EAST NEW YORK, N. Y., ASSIGNOR OF TWO-THIRDS HIS RIGHT TO STEELE & CONDUCT, OF JERSEY CITY, NEW JERSEY, AND HARRIS WILSON, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN WROUGHT-IRON BEAMS.

Specification forming part of Letters Patent No. 138,029, dated April 22, 1873; application filed February 7, 1873.

*To all whom it may concern:*

Be it known that I, LANCELOT KIRKUP, (assignor to L. KIRKUP, HARRIS WILSON, and STEELE & CONDUCT,) of East New York, Kings county, New York, have invented, made, and applied to use, new and useful improvements in the construction of beams for buildings, railway or roadway bridges, and other purposes; and that the following is a full, clear, and correct description of my invention, reference being had to the accompanying drawing making part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a side elevation of my improved beam. Fig. 2 is an end view of the same. Fig. 3 is an end view of a beam made without employing the angle-irons.

In the drawing, like parts of the invention are pointed out by the same letters of reference.

The nature of the present invention consists in certain improvements, as more fully hereinafter set forth, in the construction of beams for buildings, railway or roadway bridges, and other purposes, the object of the invention being to provide a beam superior to those now in use, and one in which lateral strain is in a great measure prevented, and the beam rendered capable of withstanding a heavier strain than beams made in the ordinary manner.

To enable those skilled in the arts to make and use my invention, I will describe the construction and operation of the same.

A shows the web-plate of the beam, provided with the top plate B and bottom plate C, riveted to the angle-irons E; and when the web-plate is a rolled beam, the top and bottom plates are riveted to the top and bottom flanges of the rolled beam. D shows a series of outside braces, double cone-shaped, having the apexes at the center of the web-plate A, where they are riveted, being riveted, also, to

the top and bottom plates B and C. E show a series of angle-irons, attached to the web-plate A, and also to the top and bottom plates B and C, and serving to hold the top and bottom plates B and C to the web A. When the top and bottom plates B and C are rolled with the web-plate A, these angle-irons E are not required.

Such being the construction, the operation may be thus described: In all beams, when subjected to a heavy strain, the tendency is to thrust or move sidewise before the limit of the supporting-power of the beam is reached. To so construct a beam as to best resist this lateral movement, and at the same time preserve the form of beam giving the greatest amount of strength and efficiency, is the object of the present invention, and this is effected by the use of the double cone-shaped braces D, connected, as shown, to the web-plate A and top and bottom plates B and C. This form of beam will be found particularly desirable for warehouses where heavy goods are stored, both for sustaining the weight and to resist the impact force to which the floors may be subjected by the falling of heavy goods, and is more particularly useful for long girders, where side braces cannot be advantageously or readily employed, and where long distances are to be spanned without the obstruction of intermediate supports. The braces D may be made separate or in one continuous plate, if desired.

Having now set forth my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination of the web A, top plate B, bottom plate C, braces D, and angle-irons E, constructed and operating substantially as and for the purposes described.

LANCELOT KIRKUP.

In presence of—

A. SIDNEY DOANE,  
WM. HASTINGS.