

(No Model.)

J. S. HEATH & E. C. WATERS.

COMPOUND STRUCTURAL BAR.

No. 378,003.

Patented Feb. 14, 1888.

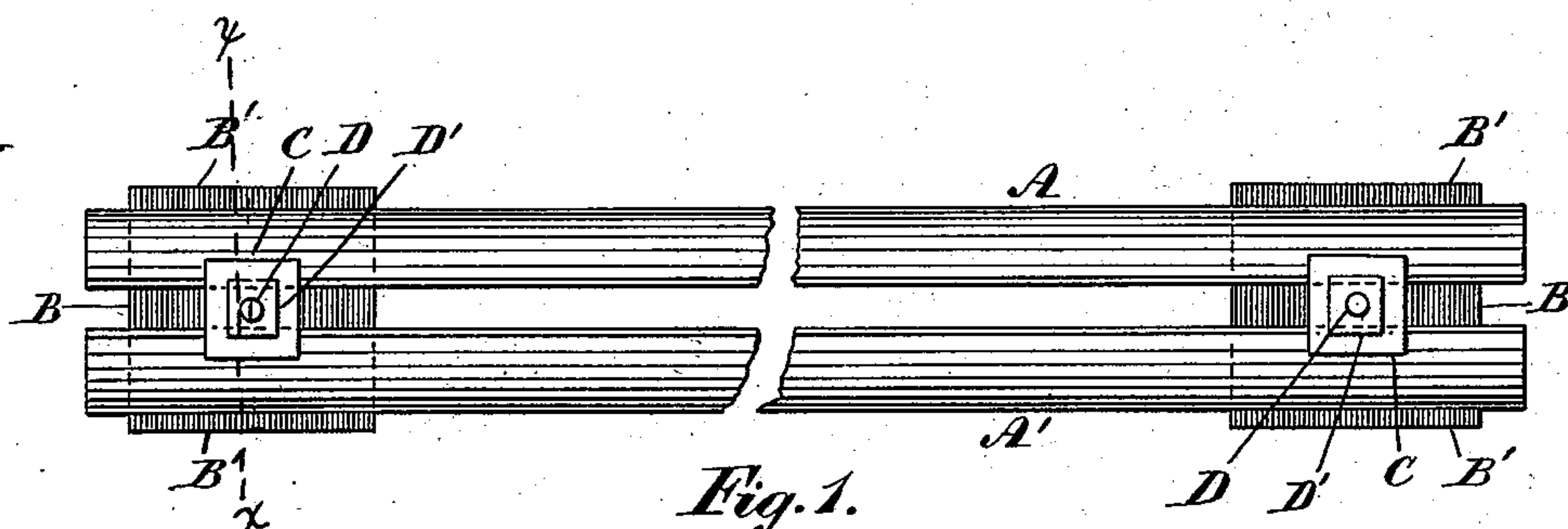


Fig. 1.

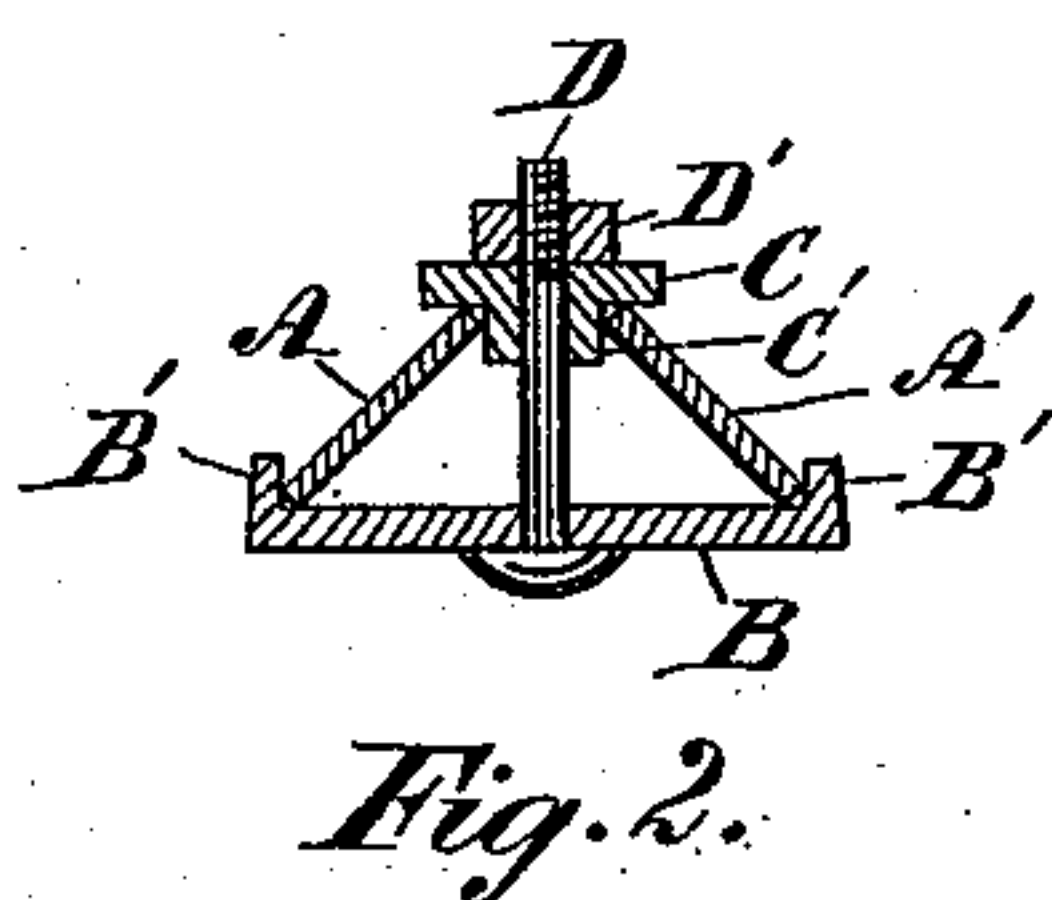


Fig. 2.

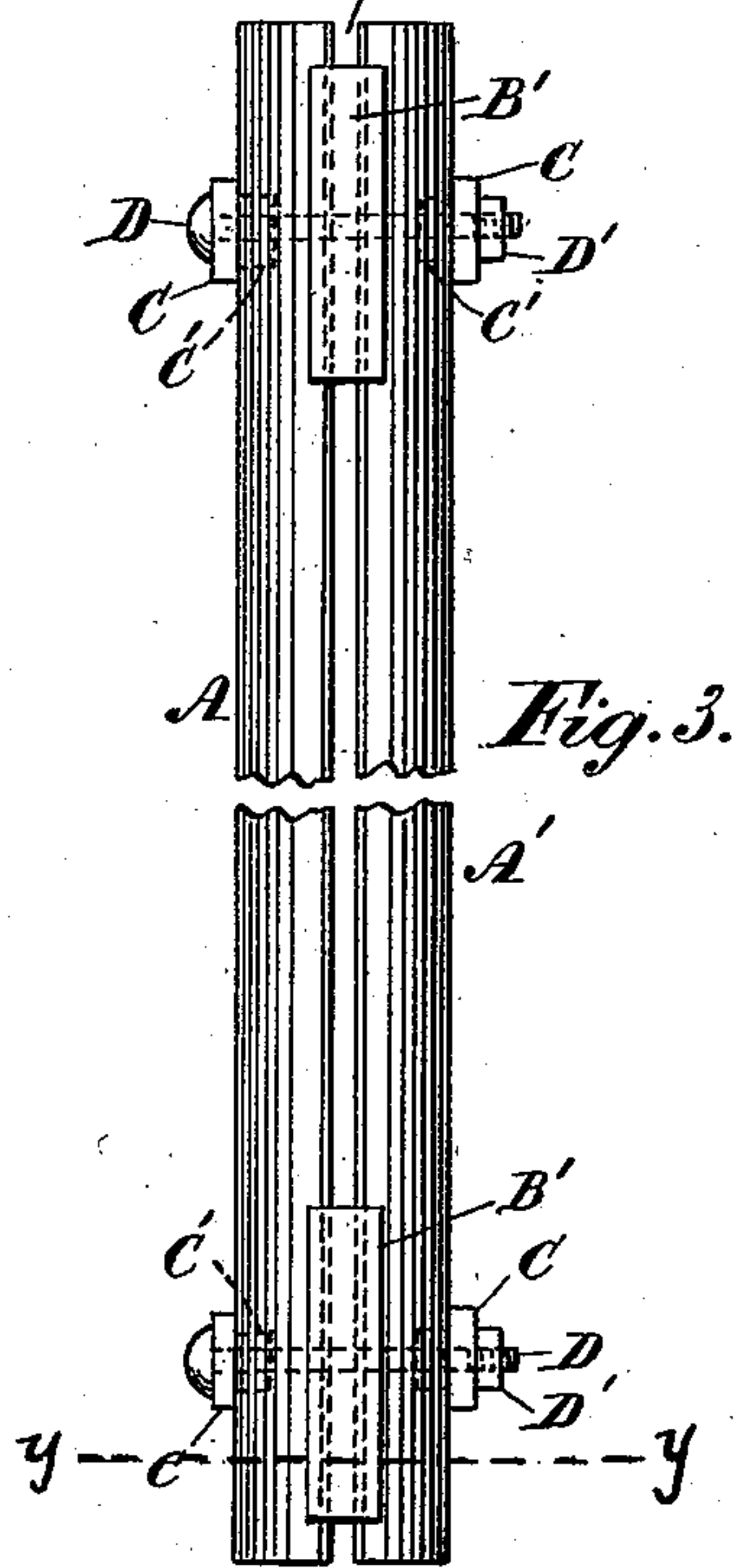


Fig. 3.

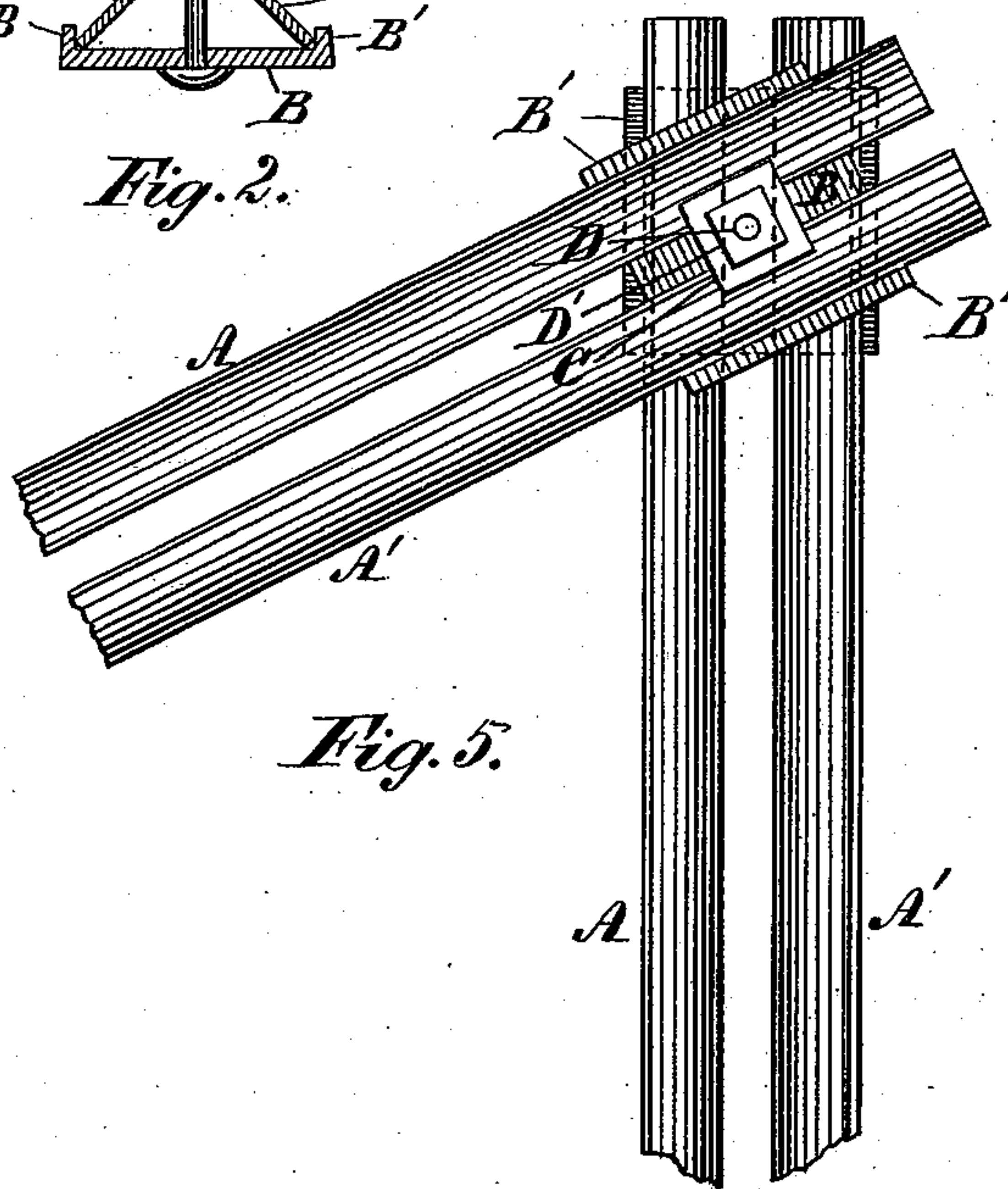


Fig. 5.

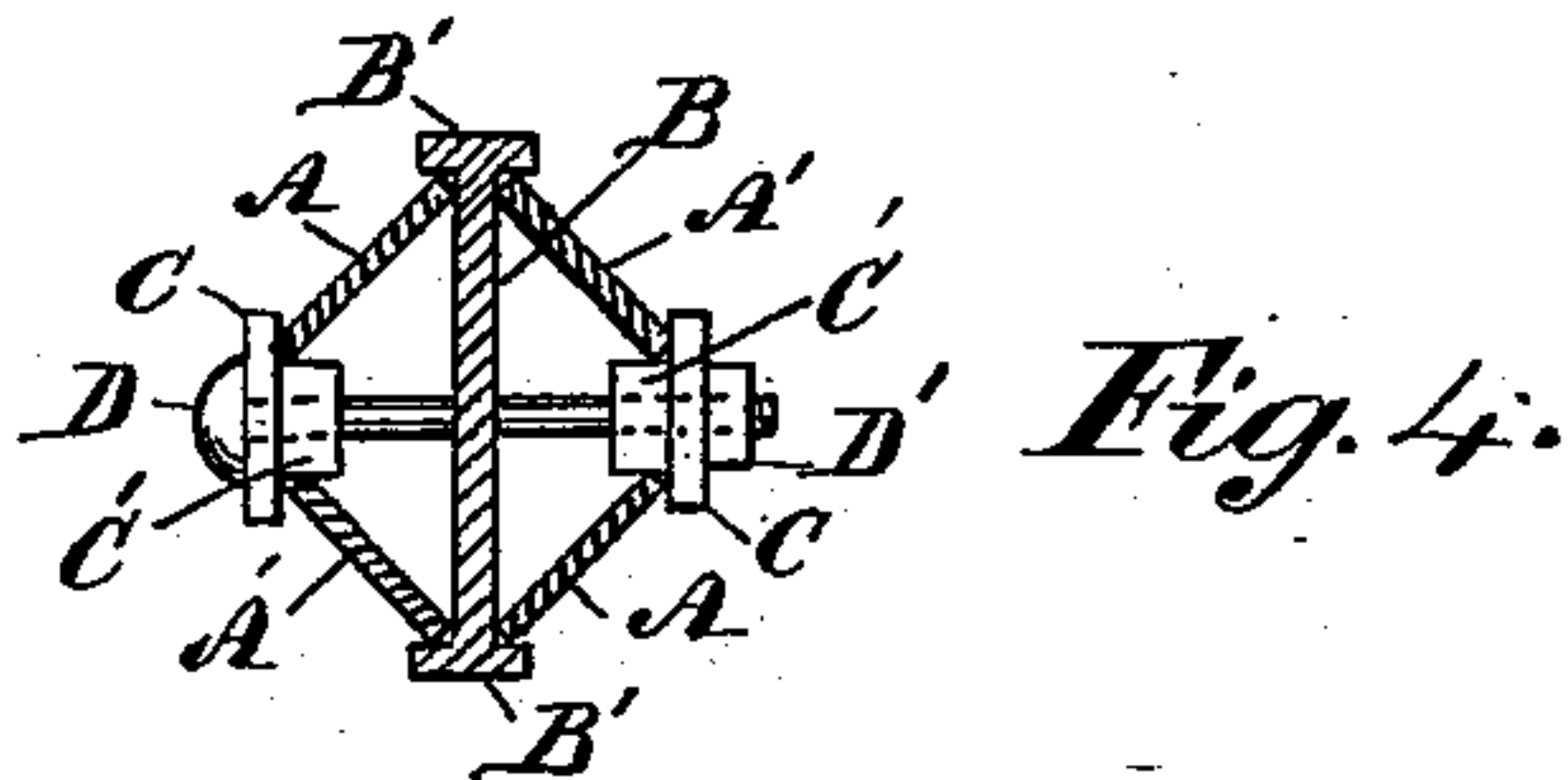


Fig. 4.

Witnesses:
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UNITED STATES PATENT OFFICE.

JAMES S. HEATH AND EDWIN C. WATERS, OF BRANTFORD, ONTARIO,
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COMPOUND STRUCTURAL BAR.

SPECIFICATION forming part of Letters Patent No. 378,003, dated February 14, 1888.

Application filed October 6, 1887. Serial No. 251,786. (No model.)

To all whom it may concern:

Be it known that we, JAMES SAMUEL HEATH and EDWIN CONWAY WATERS, both of Brantford, in the county of Brant, in the Province of Ontario, in the Dominion of Canada, have jointly invented certain new and useful Improvements in the Construction of Compound Structural Bars; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a plan of our compound bar. Fig. 2 is a section of the same on line X X, Fig. 1. Fig. 3 is an elevation of a double compound bar adapted for posts, &c. Fig. 4 is a section of the same on line Y Y, Fig. 3; and Fig. 5 is a view showing connection of two intersecting compound bars for constructing harrows and the frames of agricultural and other machines.

Our invention relates to the combination of bars secured together at intervals to produce a compound bar combining great strength with minimum of weight for the manufacture of frames of agricultural machines, posts, and other uses, and possessing a ready and convenient means to make any required connections without weakening the structure.

Our invention has for its object to construct a compound bar of two or more laterally-convergent bars secured together at intervals apart; and our invention consists in connecting two laterally-convergent bars at intervals by a plate having ribs to prevent the divergent edges of the bars from spreading, a washer bearing upon the convergent edges and provided with a lug to intervene the bars to keep them apart, and a bolt or rivet to connect the plate and washer, as hereinafter set forth.

A A' are bars of any proper dimensions to resist an imposed strain to which the bars may be subjected when in use. The bars are placed to laterally incline one toward the other, having an interval of space at the convergent edges and bound at intervals along their length

by suitable connections, or clipped together. Preferably use is made at intervals of a plate, B, having ribs B' B', against which the divergent edges of the bars A A' bear to prevent them from spreading, and a washer, C, bearing upon the convergent edges and having a lug, C', to intervene the bars to keep them apart.

The plate B and washer C are connected by a rivet or bolt, D, provided with a nut, D', so that by screwing the nut the divergent edges of the bars will be forced against the ribs B' B' and the convergent edges compressed against the intervening lug of the washer and give to the bars great stability and firmness. The two bars will combinedly bear a vertical strain equally, and one will edgewise resist a diagonal strain and the other flatwise. The divergence of the bars may be greater or less to resist according to the direction of the strain.

As the convergent edges of the bars do not meet, the space may be occupied at required distances by a block or other suitable device for the attachment of desired connections—as, for instance, the tooth-holder of harrows when the compound bar is used in the manufacture of harrow-frames—without weakening the bars by making bolt-holes to secure the tooth-holder to the bars.

In Fig. 5 the plates B B are placed back to back; or they may be cast integral.

We claim as our invention—

The combination of the laterally-inclined convergent bars A A', plates B and B at intervals along their length, and having ribs B' B', resisting the divergent edge of the bars, washers C and C, resisting the convergent edge of the bars, and having a lug, C', and a rivet or bolt, D, connecting the plate and washer, as set forth.

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Witnesses:

JOHN GRIST,
WALTER FARLEY.