

(No Model.)

J. F. HARDESTY.
TRUSS BRIDGE.

No. 485,689.

Patented Nov. 8, 1892.

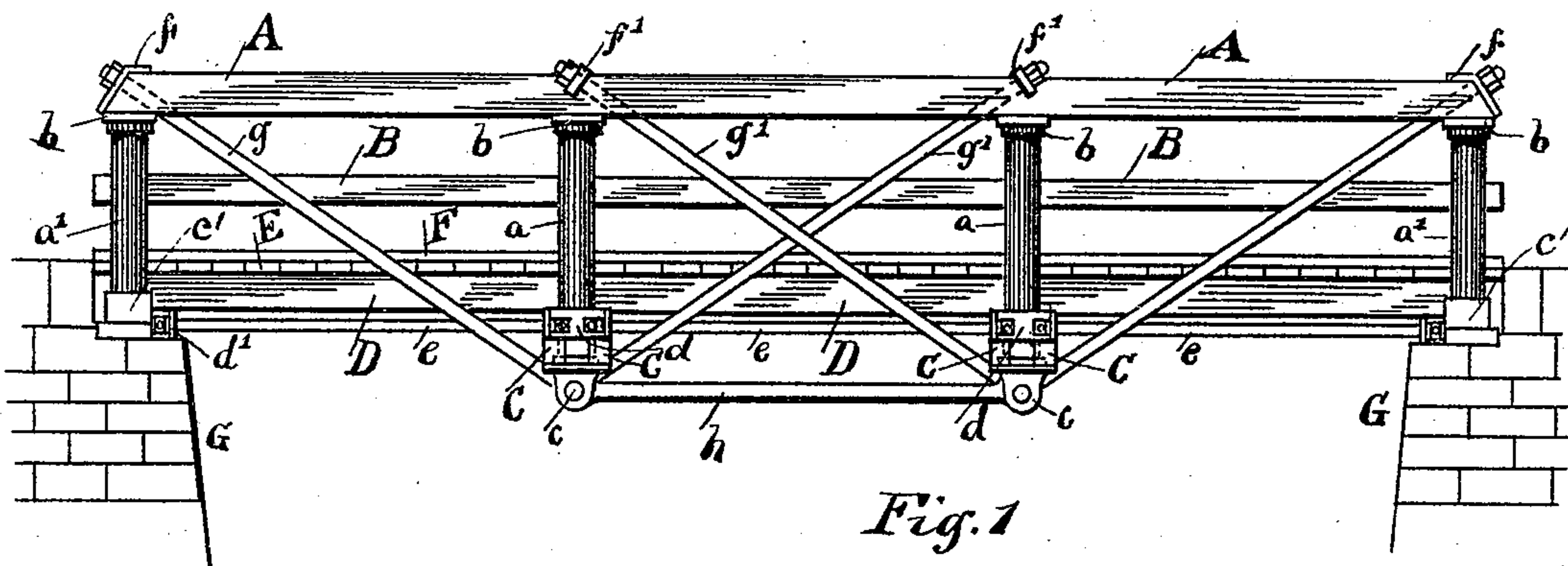


Fig. 1

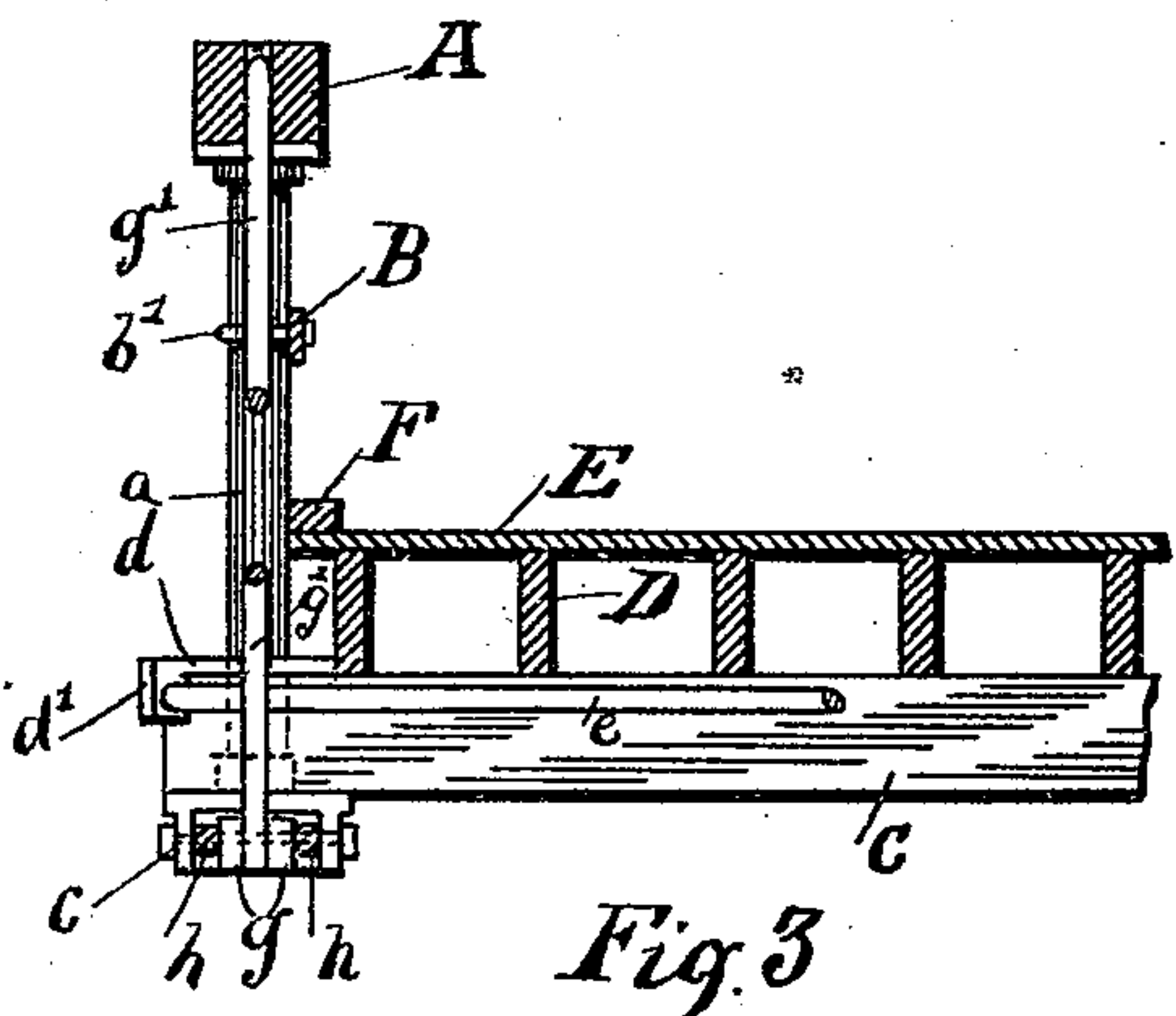


Fig. 3

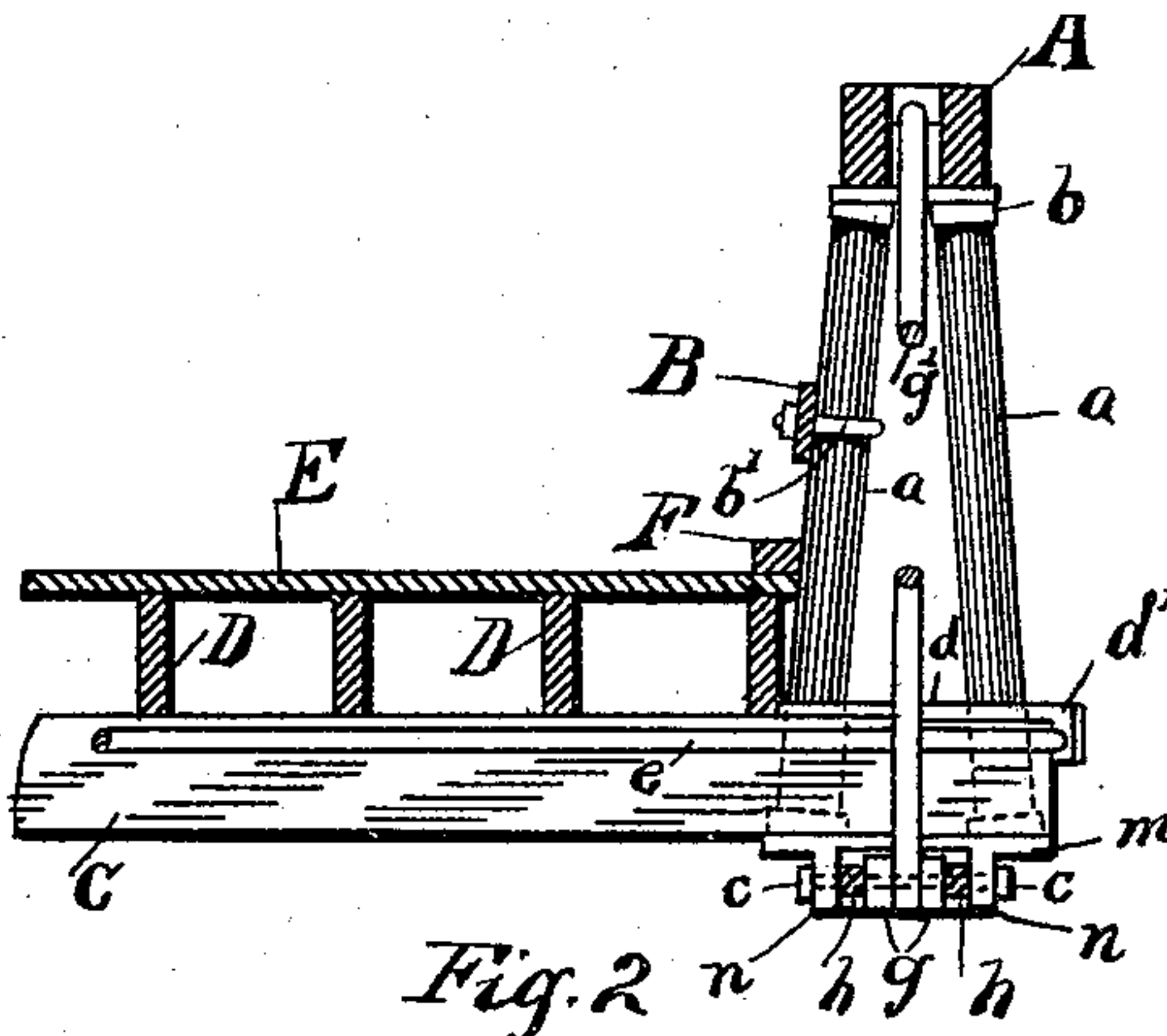


Fig. 2

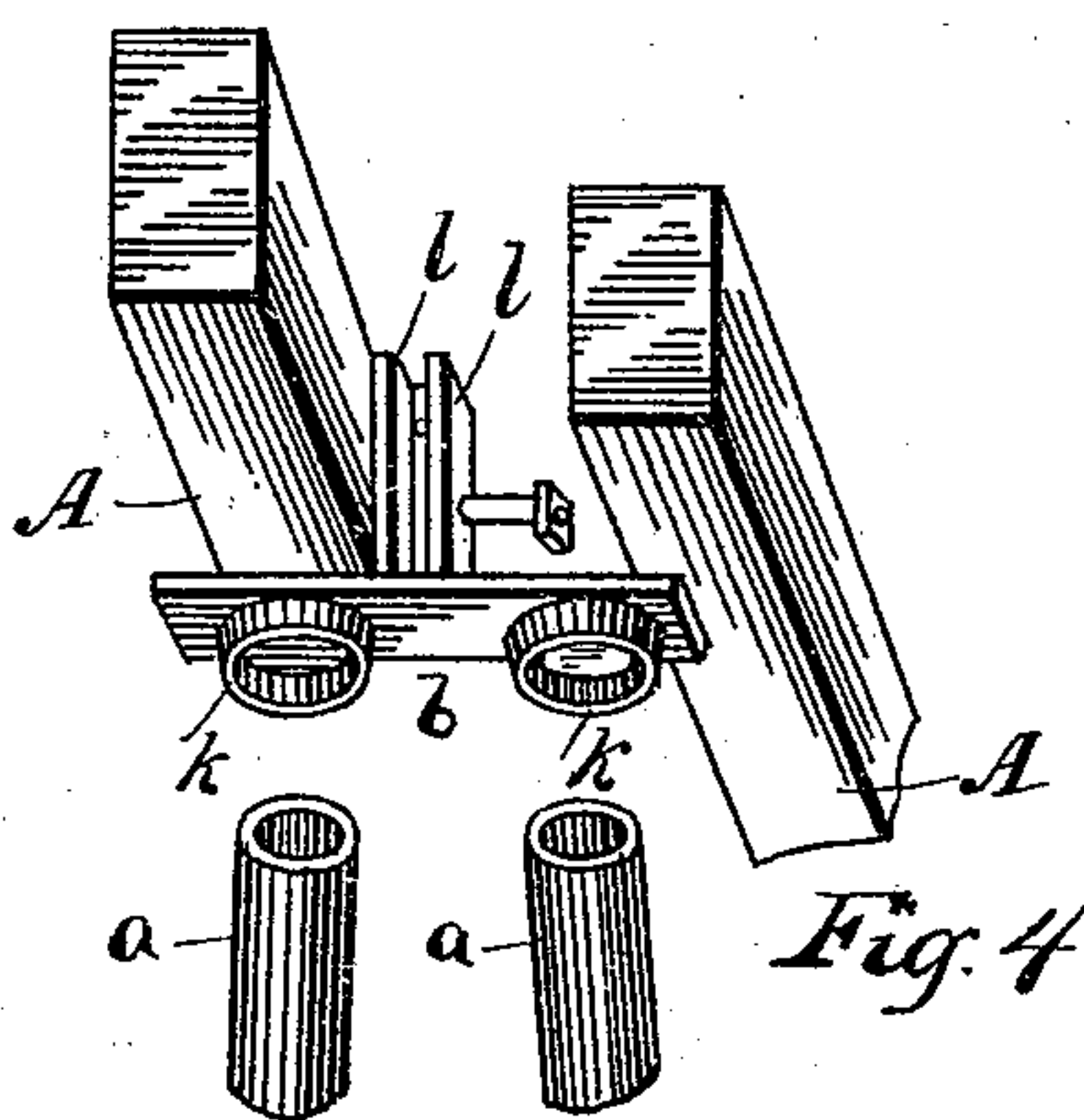


Fig. 4

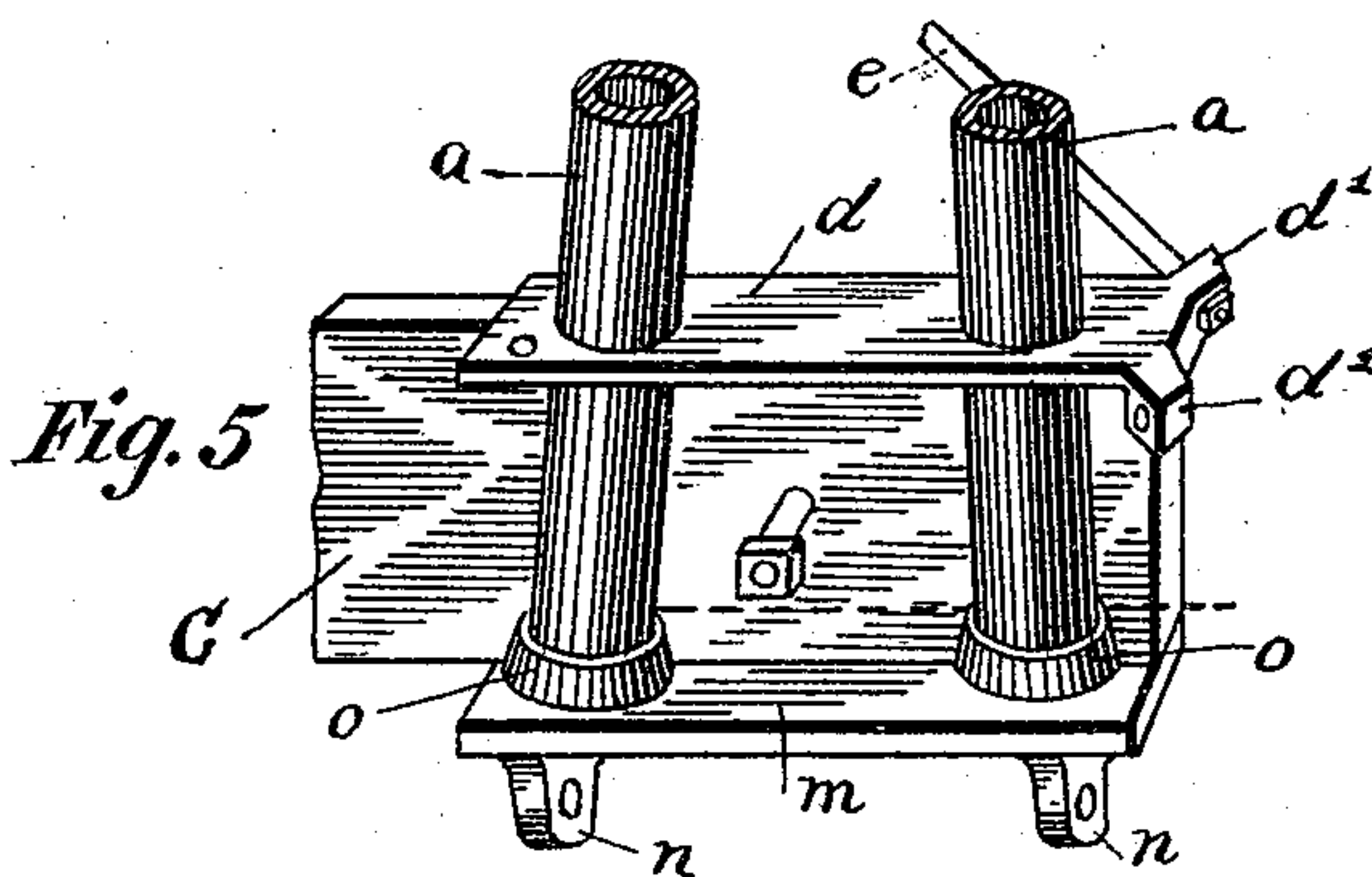


Fig. 5



Fig. 6

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JAMES F. HARDESTY, OF CAMBRIDGE, OHIO.

TRUSS-BRIDGE.

SPECIFICATION forming part of Letters Patent No. 485,689, dated November 8, 1892.

Application filed March 24, 1892. Serial No. 426,185. (No model.)

To all whom it may concern.

Be it known that I, JAMES F. HARDESTY, a citizen of the United States, residing at Cambridge, in the county of Guernsey and State of Ohio, have invented certain new and useful Improvements in the Parts and Construction of Wood, Iron, and Combination Bridges, of which the following is a specification.

My invention relates to improvements in the construction of bridge-posts, appliances for fastening, and the method of fastening them to the other parts of the bridge. These appliances and the method of their application are illustrated in the accompanying drawings, in which—

Figure 1 is a general side view of a combination-bridge; Fig. 2, a cross-section of a bridge-truss through a double post; Fig. 3, a cross-section of a truss through a single post; Fig. 4, an under view of the connection of a double post to a top chord of a bridge; Fig. 5, a view showing in detail the connection of posts with floor beams and braces. Fig. 6 shows one part of a double floor-beam with places cut in it to fit around the posts.

Similar letters refer to similar parts throughout the several views.

In the various figures, A marks the top chord of the bridge; B, the hub-guard; C, floor-beams; D, floor-joists; E, floor-boards; F, wheel-guard; G, abutments; *a*, intermediate truss-posts; *a'*, end posts; *b*, upper post-plate for fastening posts to the top chord; *b'*, stirrups around post for fastening the hub-guard; *c*, pin connecting lower chords, brace-rods, and lower post-plate together; *c'*, bridge-shoe; *d*, floor-beam brace-plate; *d'*, lugs for fastening floor brace-rods; *e*, floor brace-rods; *f*, end caps for top chord; *f'*, brace-rod plates for top chord; *g*, end truss-rods; *g'*, truss brace-rods; *h*, lower-chord bars; *m*, lower post-plate.

In my method of construction the posts *a* may be entirely plain and made of any material and of any shape, but preferably of plain cast-iron cylinders or pipes. They do not need to be dressed smooth in any part, nor do the ends need to be carefully fitted to the parts with which they connect. They may be either single or double, according to the length and required strength of the bridge. They may be placed vertically or battered slightly in order to give lateral stiffness to

the truss. They are surmounted at the top with an upper post-plate *b*, connecting them with the top chord. They then pass down through the floor-beam brace-plate *d* between two members of a double floor-beam cut out so as to fit closely around such posts, and finally they have their lower ends inserted in the sockets of the lower post-plates *m*, which connect them with the lower chords, brace-rods, &c.

The upper post-plate *b* consists of a plain cast-iron plate, on the lower side of which is cast one or more sockets *k k*, Fig. 4, for receiving the upper ends of the posts, and on the top side of said plate is cast one or more upright projections *l l*, Fig. 4, which extend up between the members of the top chord, (or between which upright projections a chord composed of only one member might pass,) with holes for bolting to said top-chord members.

The lower post-plate, Fig. 5, consists of a plain cast-iron plate *m*, with two or more lugs *n n* on the under side, with holes through which passes the pin for connecting the parts of the lower chord and the truss brace-rods, as shown in Fig 2, *c* being the pin; *n n*, the lugs; *h h*, the eye ends of the lower-chord bars; *g g*, the lower ends of two truss-rods. Said plate also has on its upper side one or more sockets for receiving the lower ends of the truss-posts *a a*.

The floor-beam brace-rod plate consists of a plain cast-iron plate *d*, Fig. 5, resting on the top of the floor-beams and having holes through which the posts *a a* may pass to the lower post-plate *m*, and also having small holes through which to put screws to fasten the said plate to the floor-beams, and, further, having at the end projections *d' d'* with holes for receiving the ends of the floor brace-rods *e e*.

The bridge-shoe *c'* consists of a plain cast-iron plate with one or more sockets for receiving the ends of the end posts and also with lugs *d' d'*, similar to those on the floor-beam brace-rod plate, for receiving the ends of the floor-brace rods.

The method of constructing a bridge is as follows: The bridge-shoes *c' c'* are placed in position. The end posts *a' a'* are then put up. The floor-beams C C are then put in proper

place, supported by false-work. The floor-beam brace-rod plates are then put on top of said floor-beams and properly adjusted. The posts *a a* are then set up and the floor-beams fitted closely around such posts, after which the parts of the floor-beams are strongly bolted together. The upper post-plates *b b b b* are then put on. Then the members of the top chord *A* are placed in position and bolted together through the lugs or extensions *l l* on the upper post-plates. Then the lower post-plates *m m* are put in place. The rods *g g g' g'* and lower chord *h* are then put in position and the whole drawn up together and properly adjusted, making a very rigid structure.

Having thus described the parts of my invention and the method of construction of a bridge in which the same are used, what I particularly claim as my invention, and desire to secure by Letters Patent, is—

1. The upper post-plate *b*, having the parts *k* and *l*, substantially as described.
2. The lower post-plate *m*, with the parts *n* and *o*, substantially as described.
3. The floor-beam brace-rod plate *d*, with the part *d'*, substantially as described.
4. The combination of the upper post-plate *b* with a plain post *a*, as described.
5. The combination of the lower post-plate *m* with a plain post *a*, as described.
6. The combination of the floor-beam brace-rod plate *d* with the plain post *a*, as described.
7. The combination of the upper post-plate, the lower post-plate, the floor-beam brace-rod plate, as described, and a plain post *a*, for the purposes as substantially set forth herein.

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Witnesses:

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