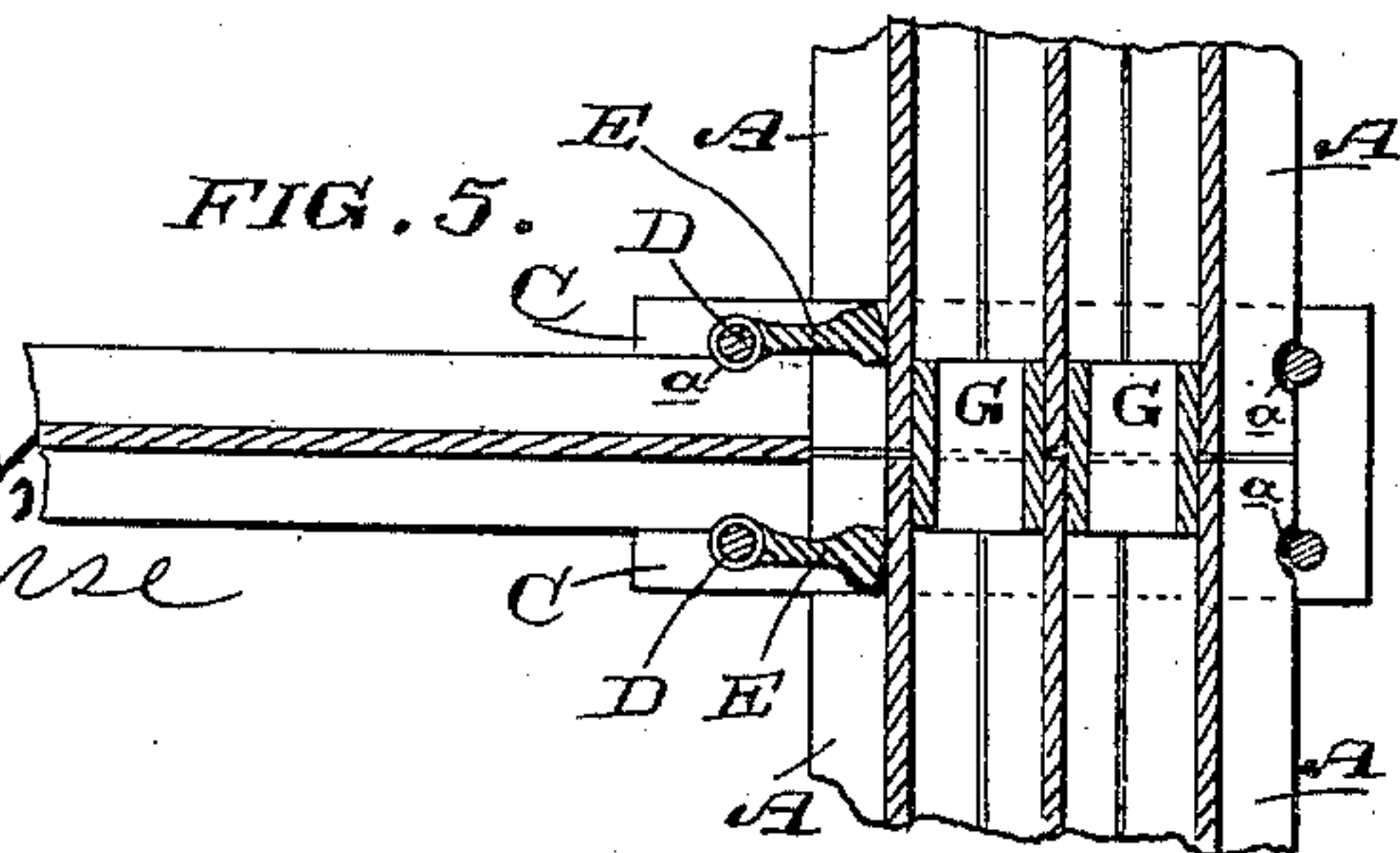
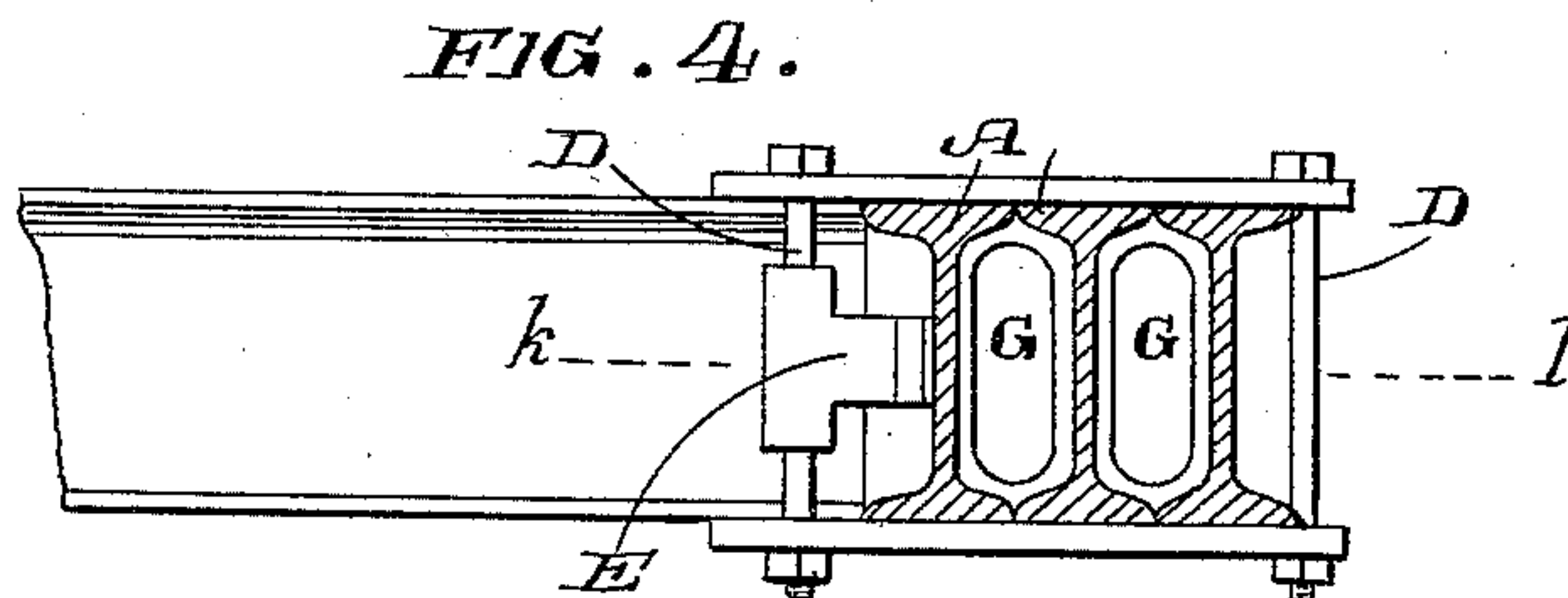
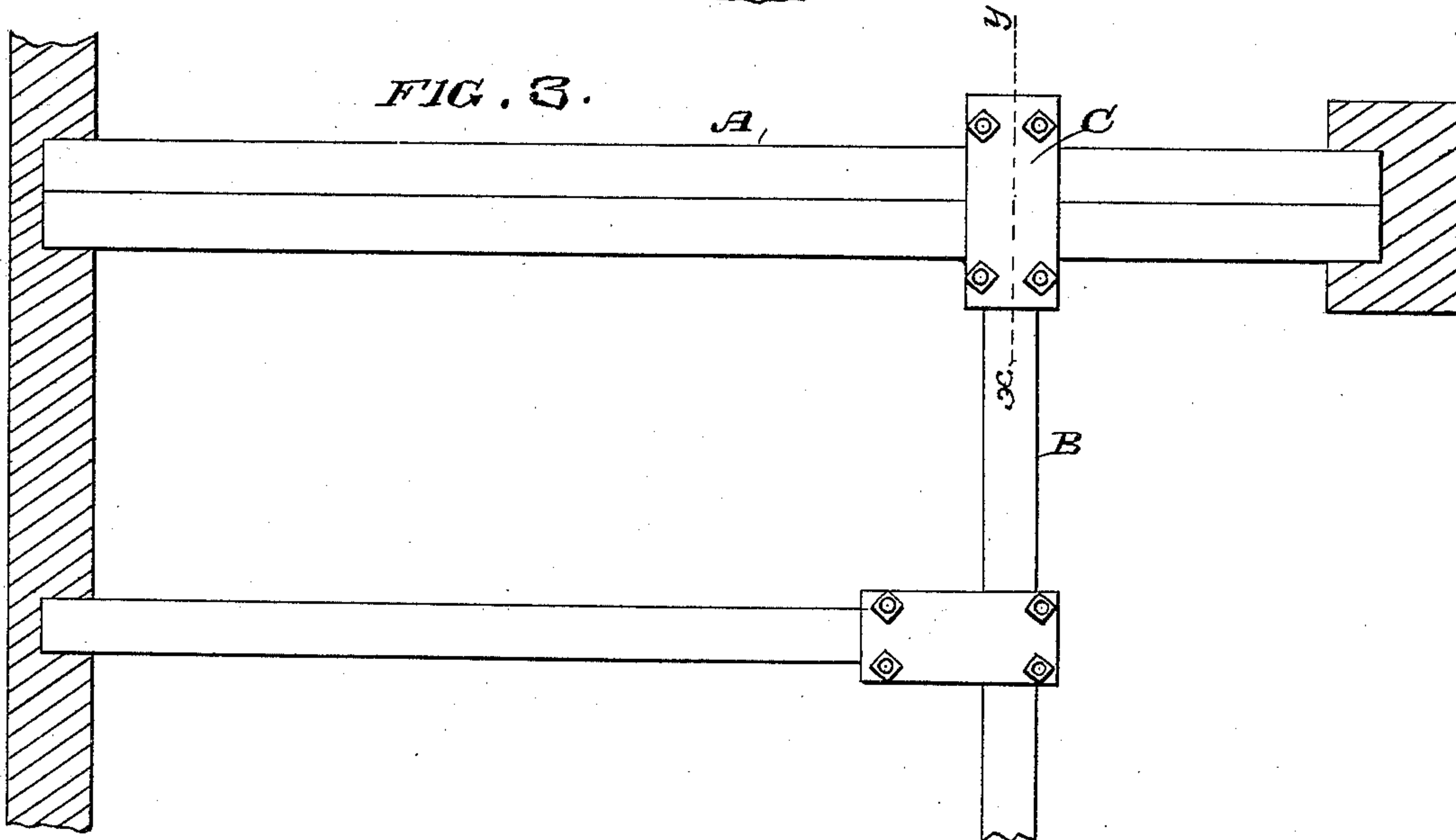
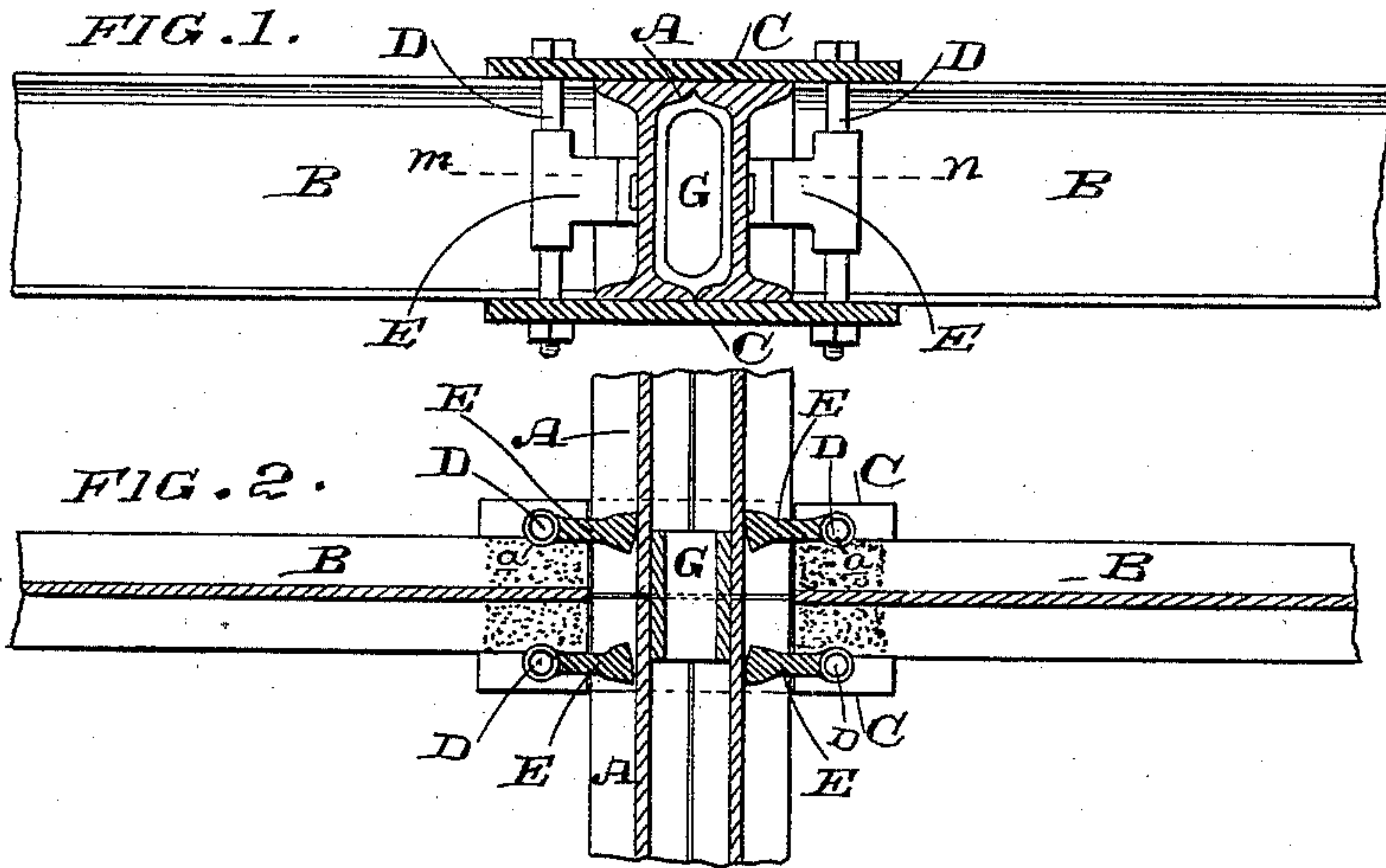


P. H. JACKSON.  
SUPPORT FOR BEAMS OR GIRDERS.

No. 405,358.

Patented June 18, 1889.



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(No Model.)

2 Sheets—Sheet 2.

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FIG. 6.

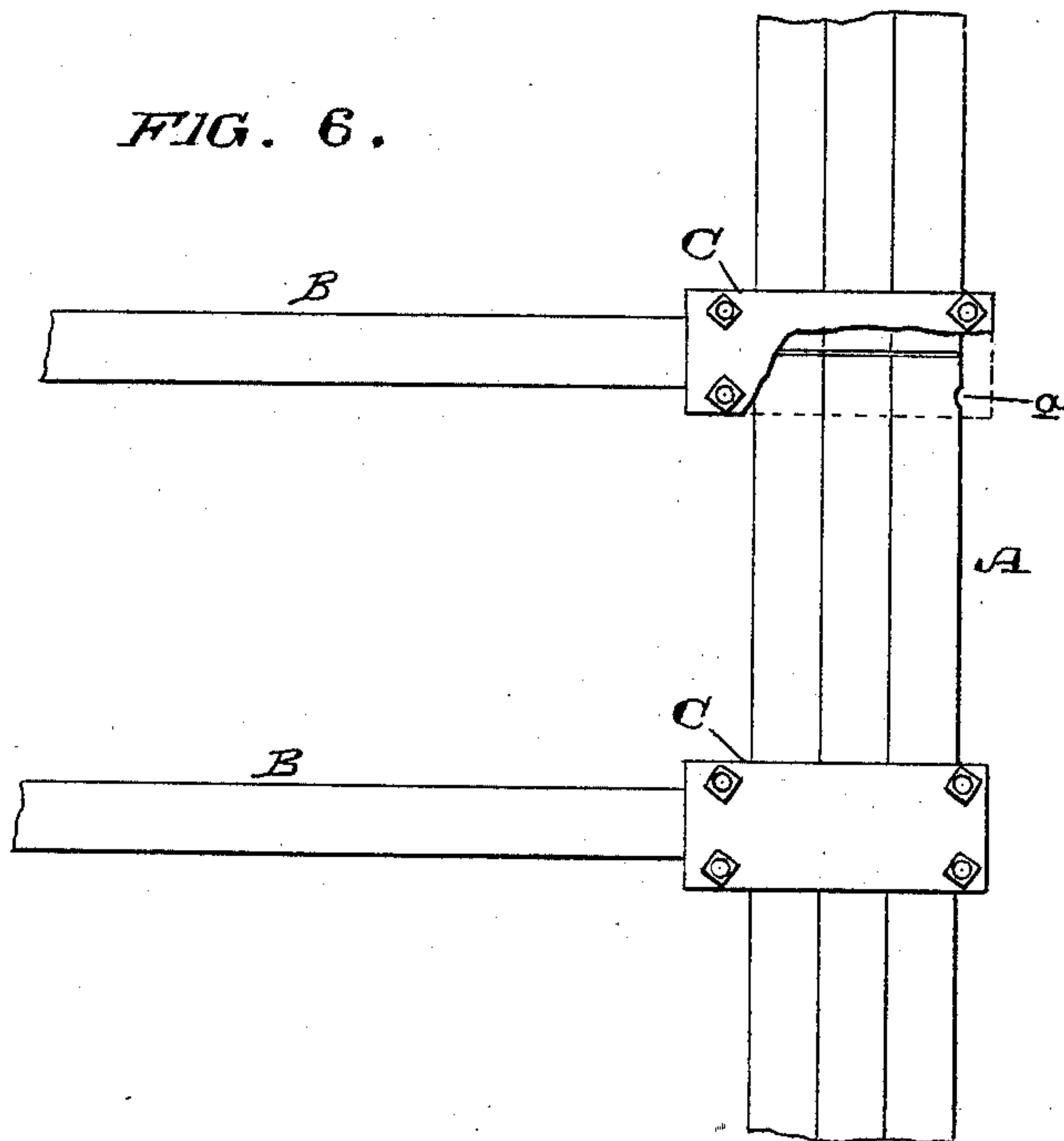


FIG. 7.

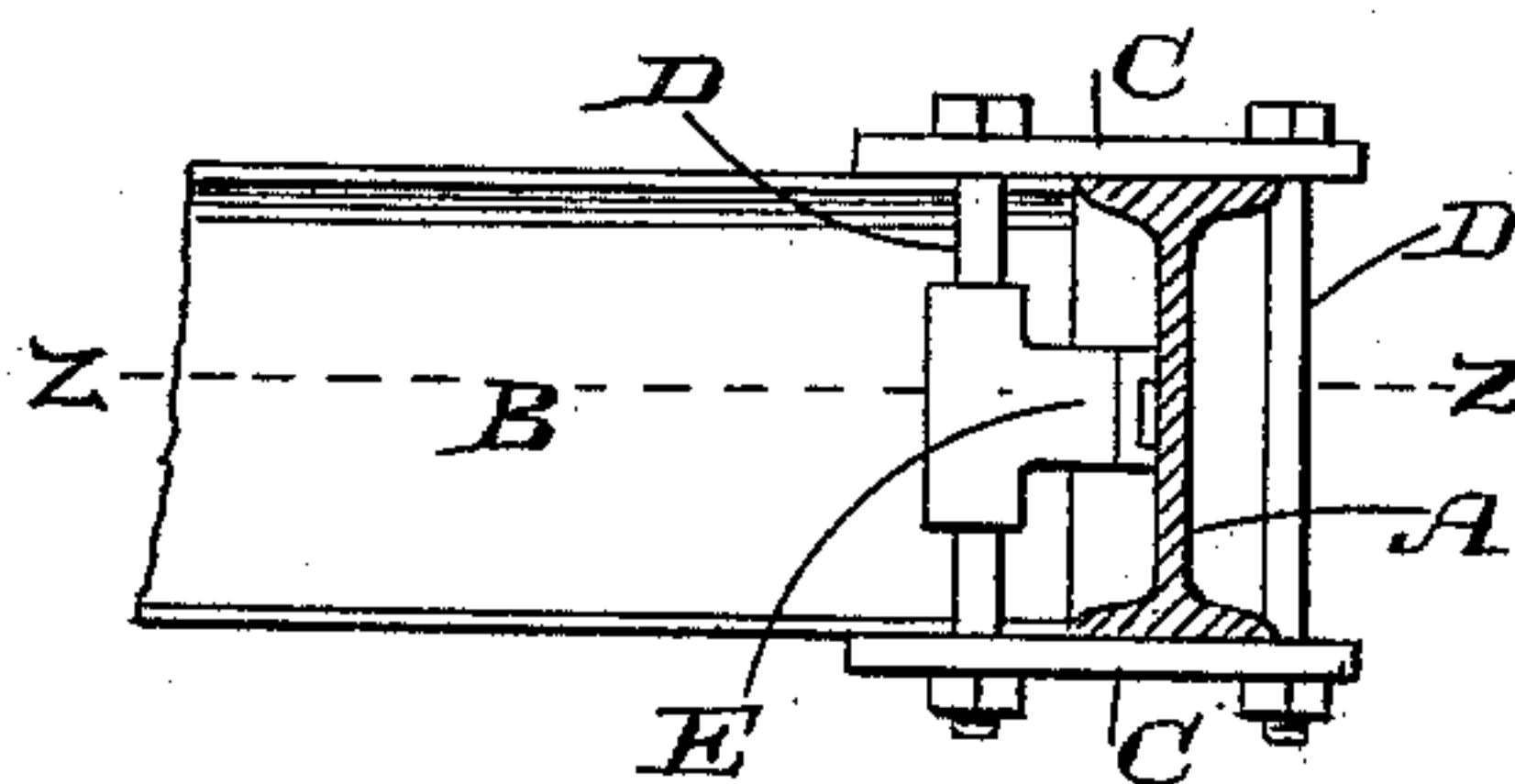


FIG. 8.

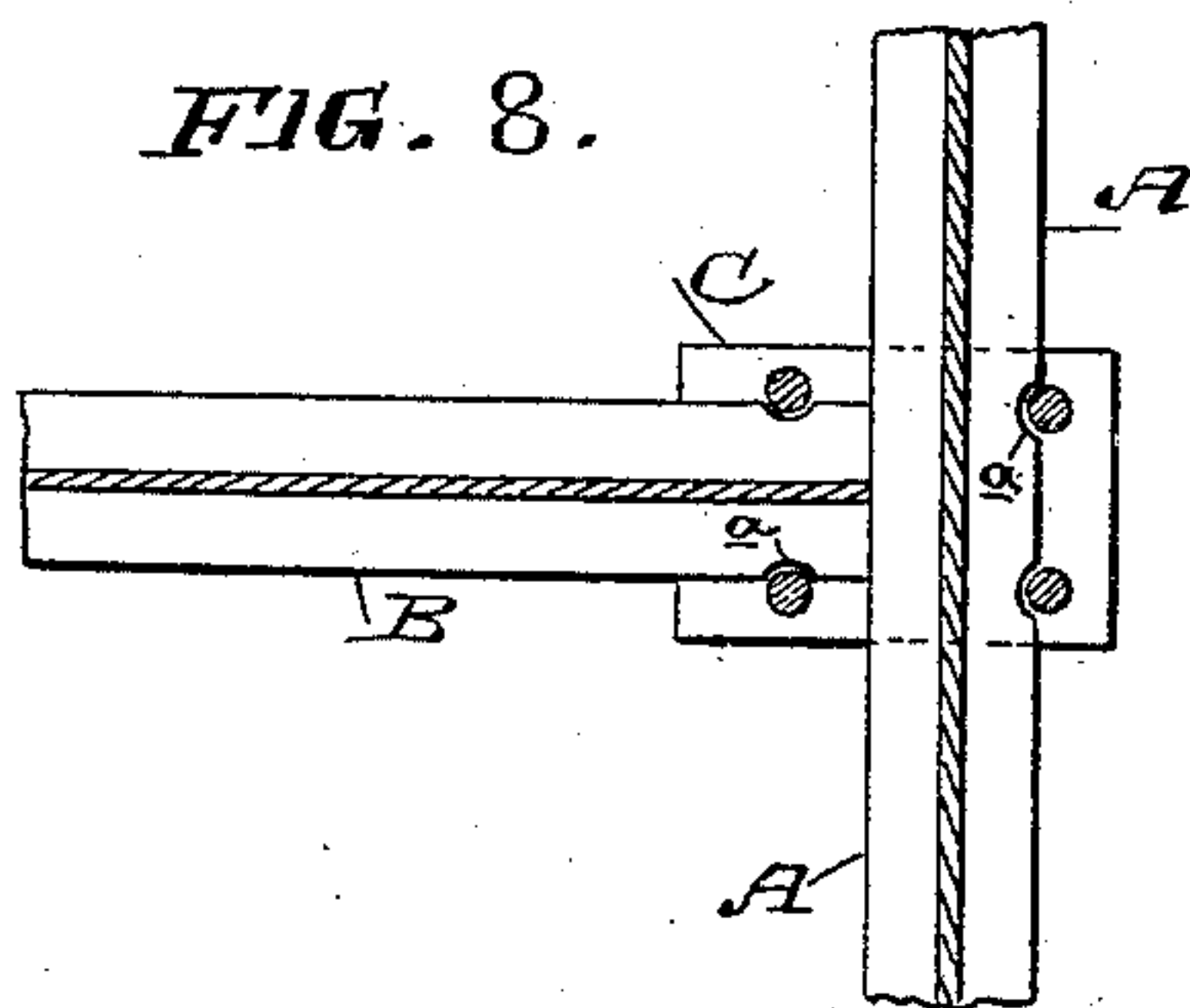
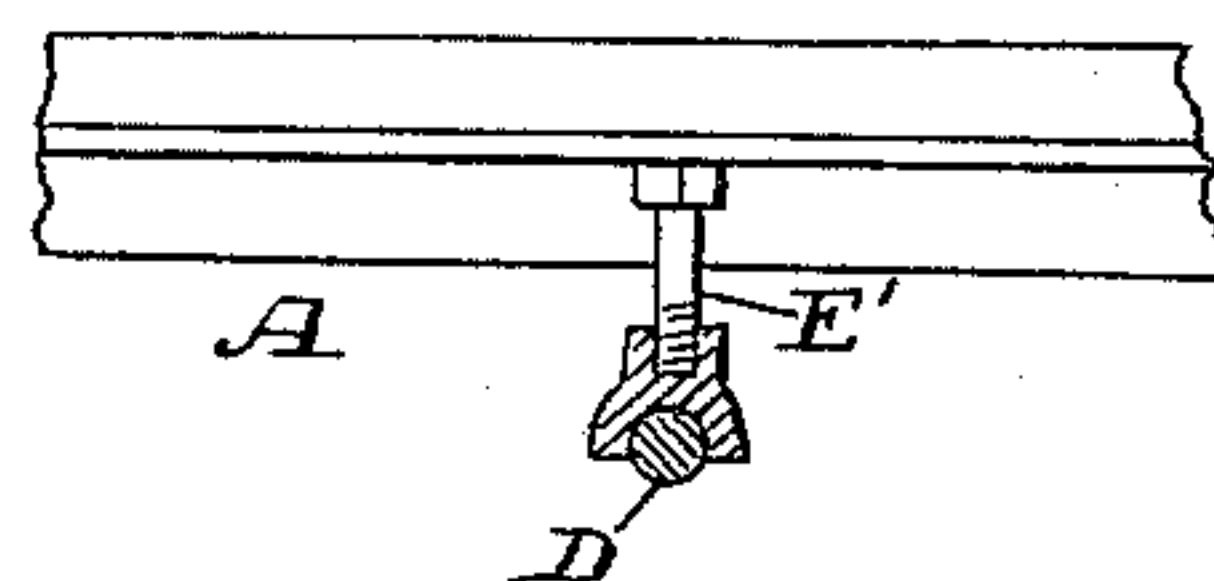


FIG. 9.



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# UNITED STATES PATENT OFFICE.

PETER H. JACKSON, OF SAN FRANCISCO, CALIFORNIA.

## SUPPORT FOR BEAMS OR GIRDERS.

SPECIFICATION forming part of Letters Patent No. 405,358, dated June 18, 1889.

Application filed February 19, 1889. Serial No. 300,453. (No model.)

*To all whom it may concern:*

Be it known that I, PETER H. JACKSON, of the city and county of San Francisco, State of California, have invented an Improvement in  
5 Supports for Beams or Girders; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to improvements in supports for beams or girders, and it is more  
10 especially applicable in the construction of supports similar to those shown in a patent issued to me January 1, 1884, No. 291,192.

My invention consists in such a construction that I am enabled to dispense with holes  
15 (which it was formerly necessary to make) through the beams and diaphragms, and by this construction I avoid the time and expense of handling and transporting these heavy beams from the rolling-mill or place of  
20 manufacture to the place where they are to be punched to prepare them for being put together.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a transverse section taken  
25 through  $xy$  of Fig. 3. Fig. 2 is a section taken through  $mn$ , Fig. 1. Fig. 3 is a plan. Fig. 4 is a vertical cross-section showing three beams. Fig. 5 is a horizontal section taken  
30 through  $kl$  of Fig. 4. Fig. 6 is a plan view of the structure shown in Figs. 4 and 5. Fig. 7 is a vertical cross-section showing a single beam and girder with clamping-plates on top and bottom. Fig. 8 is a section taken  
35 through  $zz$  of Fig. 7. Fig. 9 shows a screw-brace for the girder in place of cams or wedges.

A A is the girder, which may consist of one, two, or more beams, and B is the beam abutting  
40 against the girder.

C C are independent metal plates extending across the girder and also over the end of the beam B, above and below, and D are iron bolts which clamp the plates, the girder, and  
45 beams together by means of nuts which screw upon the lower or upper ends of the bolts.

E E are cams or wedge-pieces which abut against the bolts D at one end, while the other ends press against the sides of the beams forming the girder A and force the beams together,  
50 firmly holding the webs or diaphragms of the

beams in position to prevent any lateral movement. It will be seen by the section Fig. 2 that these cams may be forced against the girder-beams with any needed pressure, or, 55 if desired, they may be so constructed as to swing into line between the bolts and the webs of the girder, and wedges may then be driven in to obtain the desired pressure. The lateral movement of the beams is thus prevented, while the plates above and below 60 with their connecting-bolts prevent any vertical movement.

The weight of the beam B, abutting against the side of the girder A and resting in the 65 socket formed by the top and bottom plates C C and the bolts at the side of the girder, is supported the same as if the beam were laid over the top of all the beams composing the girder. 70

At the point where the ends of the beams of one girder join or meet with those of the next a diaphragm G is introduced, which prevents the ends from slipping past each other; and in order to hold these ends together and 75 prevent their drawing apart the bolt-holes through the top and bottom plates C are so made that about half their diameter overlaps the edges of the flanges on the girder-beams. The portion which is thus overlapped I chip 80 out with a cold-chisel or other suitable tool on both top and bottom flanges, forming a section of a circle which corresponds with that of the bolt-holes in the plates above and below. The bolts then passing through the 85 plates lie in these semicircular notches, half of the diameter of the bolt fitting into these notches, and they thus act to lock and hold the beams and prevent any pulling strain from separating the ends, as is shown especially in sections Figs. 2, 5, 6, and 8. 90

In order to hold the tail-beams B in the sockets formed by the top and bottom plates and bolts at the side of the girder, the sockets may be filled between the plates and around 95 the end of the tail-beam and bolts on the line with their outside with Portland cement, concrete, and broken stone or brick or any other plastic material which will harden and cement the whole. 100

It will be manifest that, if desired, a screw E, Fig. 9, could be applied in place of the



cams or wedges which press against the girder-beams, as previously described; but by the use of the cams, eccentrics, or wedges set in such a position that any tension which  
5 would act to draw the beams apart would serve to tighten the locking-wedges the most satisfactory result is obtained.

It will readily be seen that the beams may be sent from the rolling-mill or other place of  
10 manufacture directly to the building where they are to be used, and may be set up in place without any drilling or punching, and after being set up the semicircular notches may be cut out of the flanges to correspond with  
15 the holes in the top and bottom plates C, and the bolts then being put through the plates and the nuts screwed up tight, the whole of the beams will be locked together without further work.

20 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A girder composed of two or more metallic beams and an abutting beam or beams,  
25 independent metallic plates extending across the girder and above and below the abutting beam or beams, and clamping-bolts or means for securing the end of the abutting beam or beams and the plates together, in combination with wedges or cams whereby pressure  
30 is applied laterally to the girder-beams, substantially as described.

2. A girder composed of one or more metallic beams and the abutting beam or beams,

independent metallic plates extending across 35 the girder above and below the abutting beam or beams, and clamping - bolts extending through the top and bottom plates upon opposite sides of the girder-beam, in combination with cams or wedges exerting a lateral 40 pressure upon one side of the girder-beam, and a resistant consisting of the clamping-bolts upon the opposite side, substantially as described.

3. A girder composed of a metallic beam or 45 beams and an abutting beam or beams, the independent metallic plates extending above and below the girder and abutting beams, and the clamping - bolts passing through said plates and also through recesses formed in 50 the flanges of the beams, whereby the beams are held in position between the clamping-plates, substantially as described.

4. A girder consisting of a metallic beam or beams and an abutting beam or beams, the 55 independent metallic plates extending above and below the girder and abutting beams, and the clamping bolts and nuts, in combination with a filling of a plastic material which will set or harden around the ends of the abut- 60 ting beams and the bolts between the plates, substantially as described.

In witness whereof I have hereunto set my hand.

PETER H. JACKSON.

Witnesses:

S. H. NOURSE,  
H. C. LEE.