

(No Model.)

L. C. BURGESS.
BRAKE BEAM.

No. 604,456.

Patented May 24, 1898.

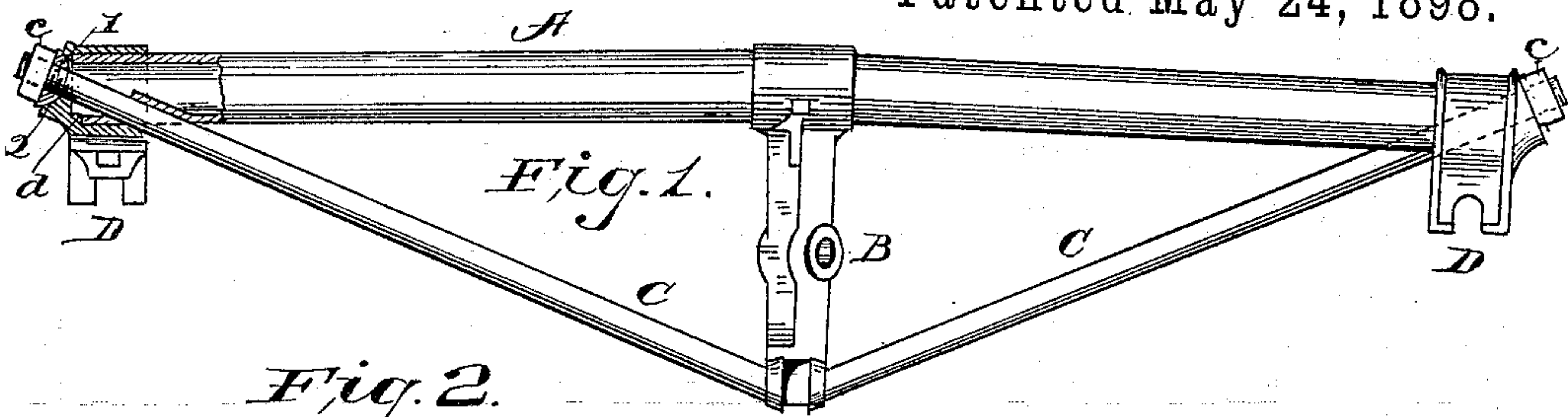


Fig. 2.

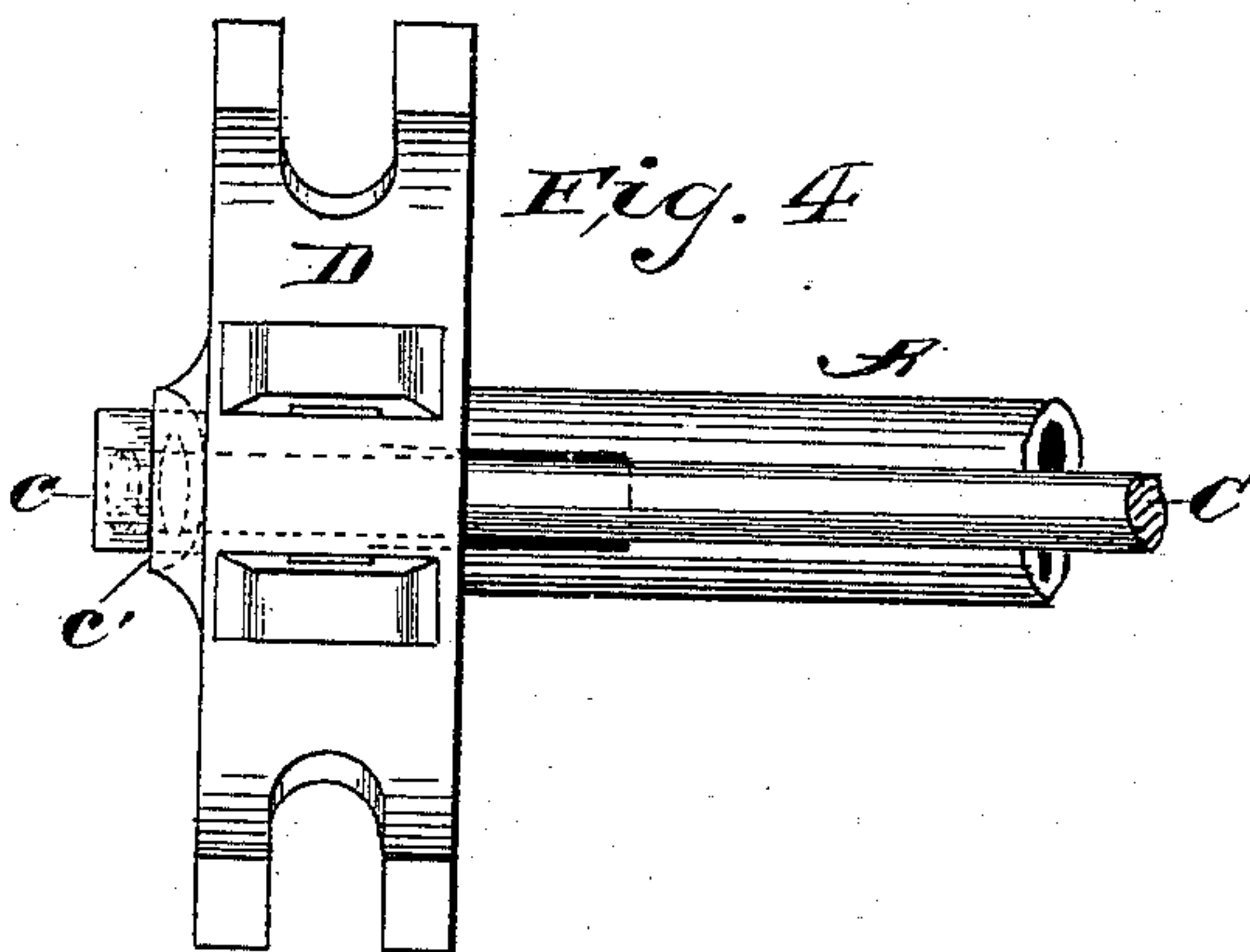
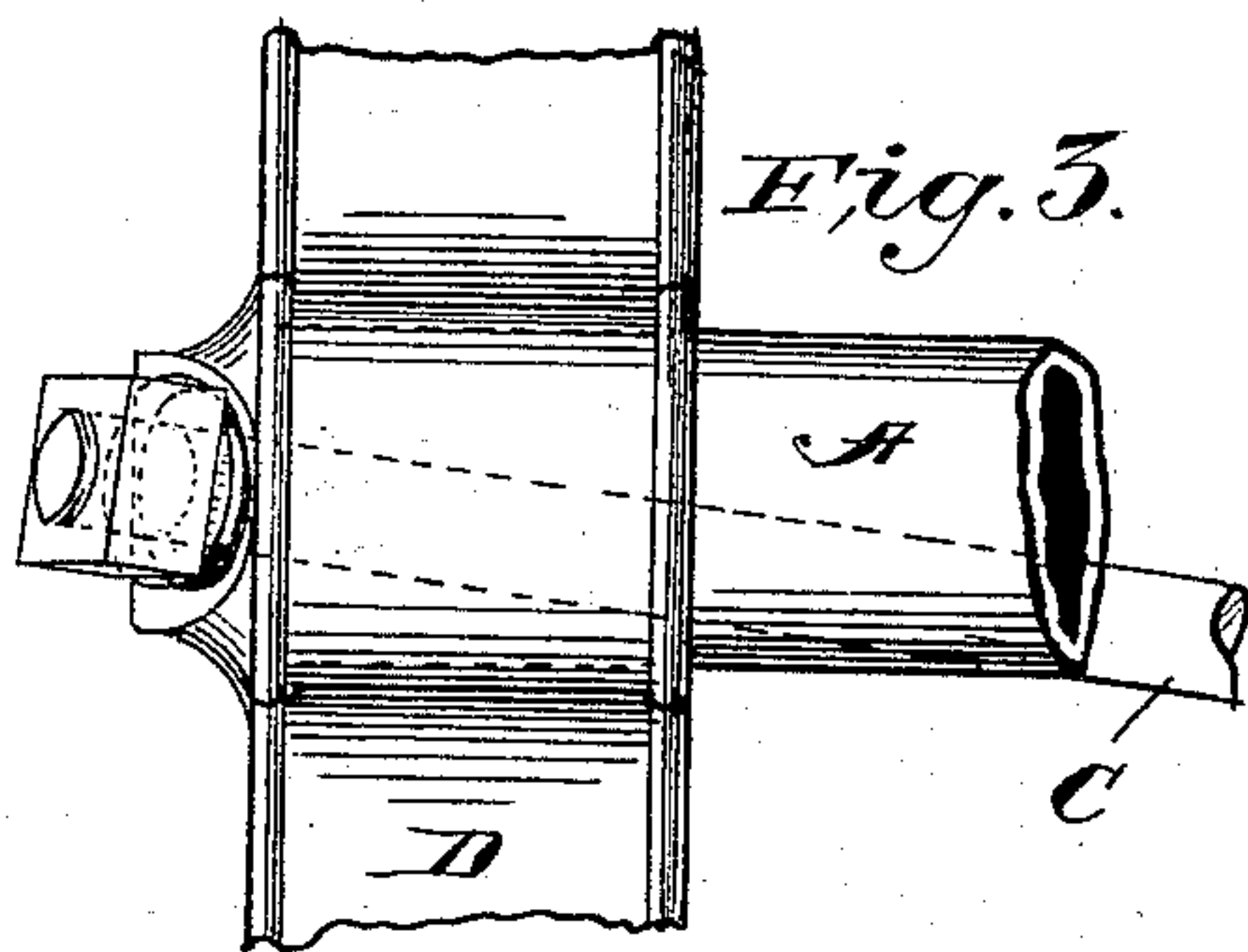
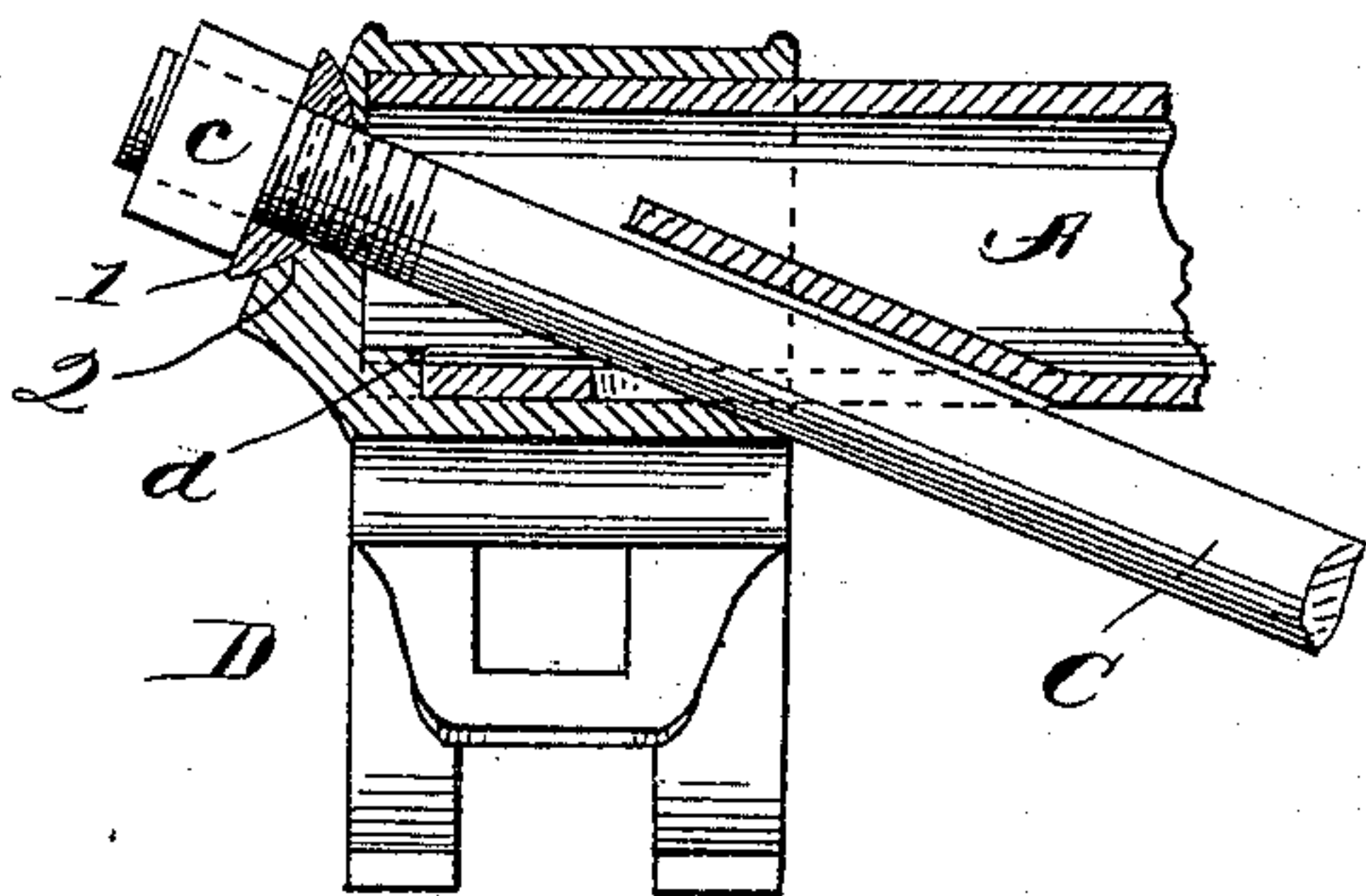


Fig. 4.

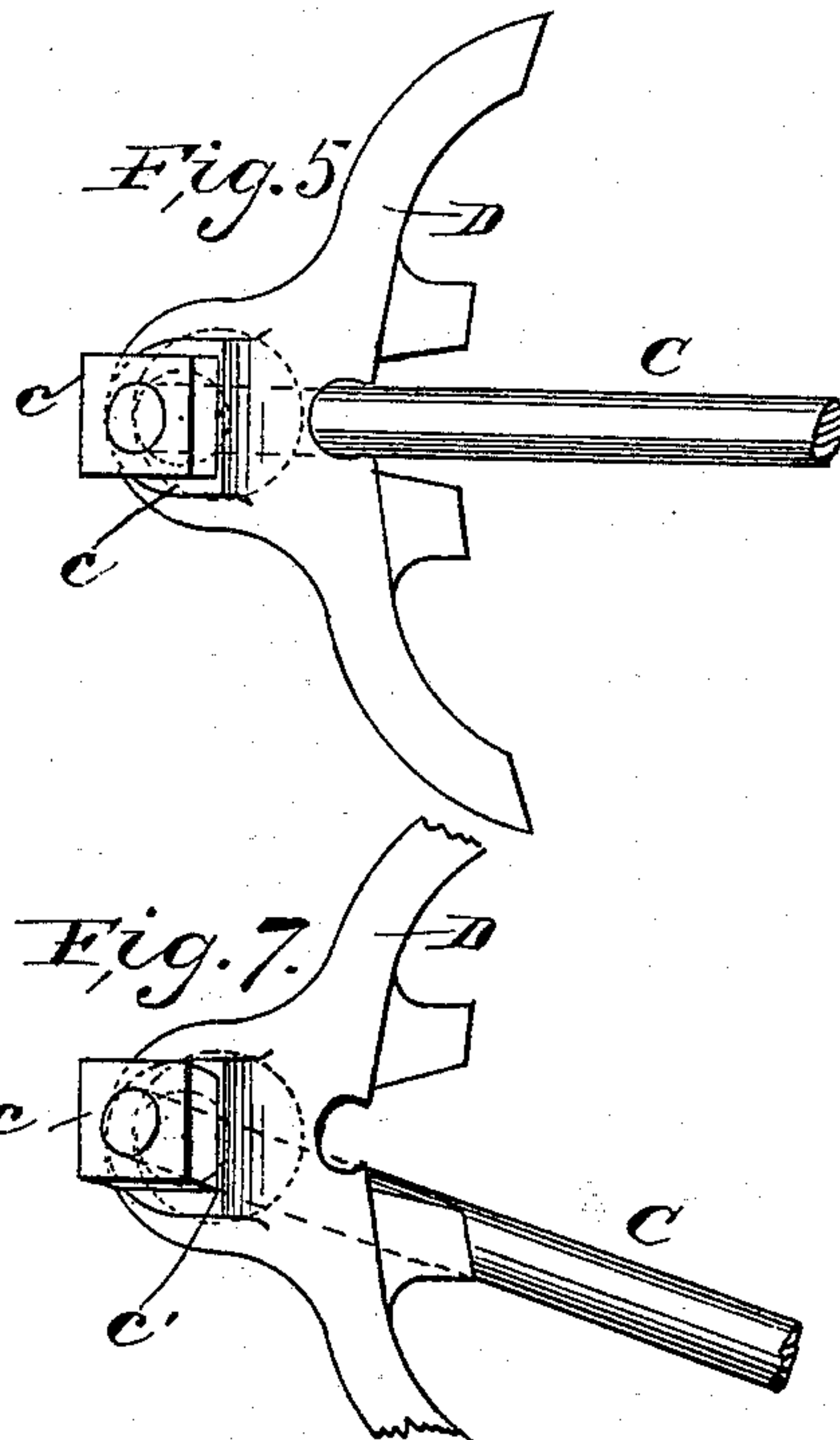


Fig. 5.

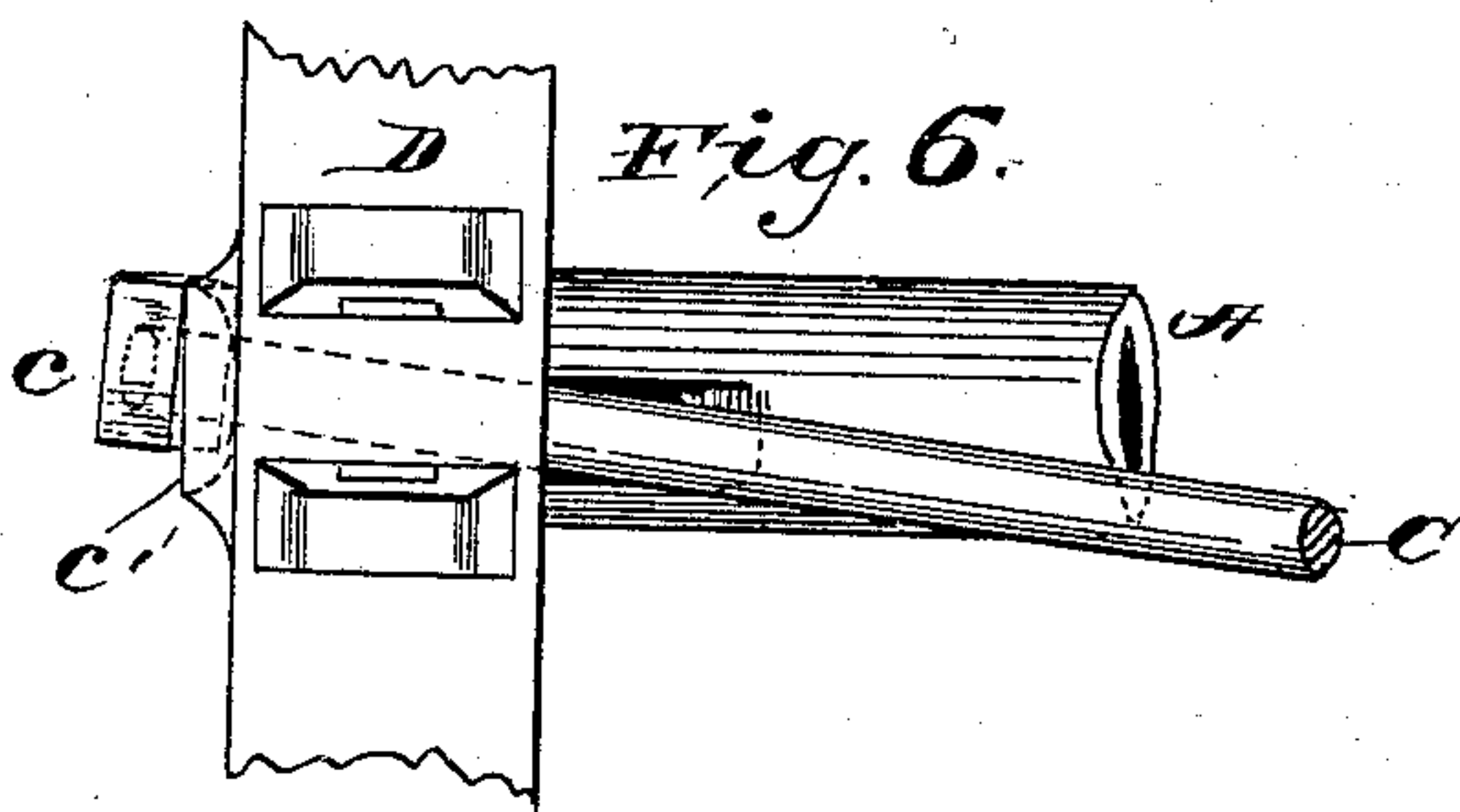


Fig. 6.

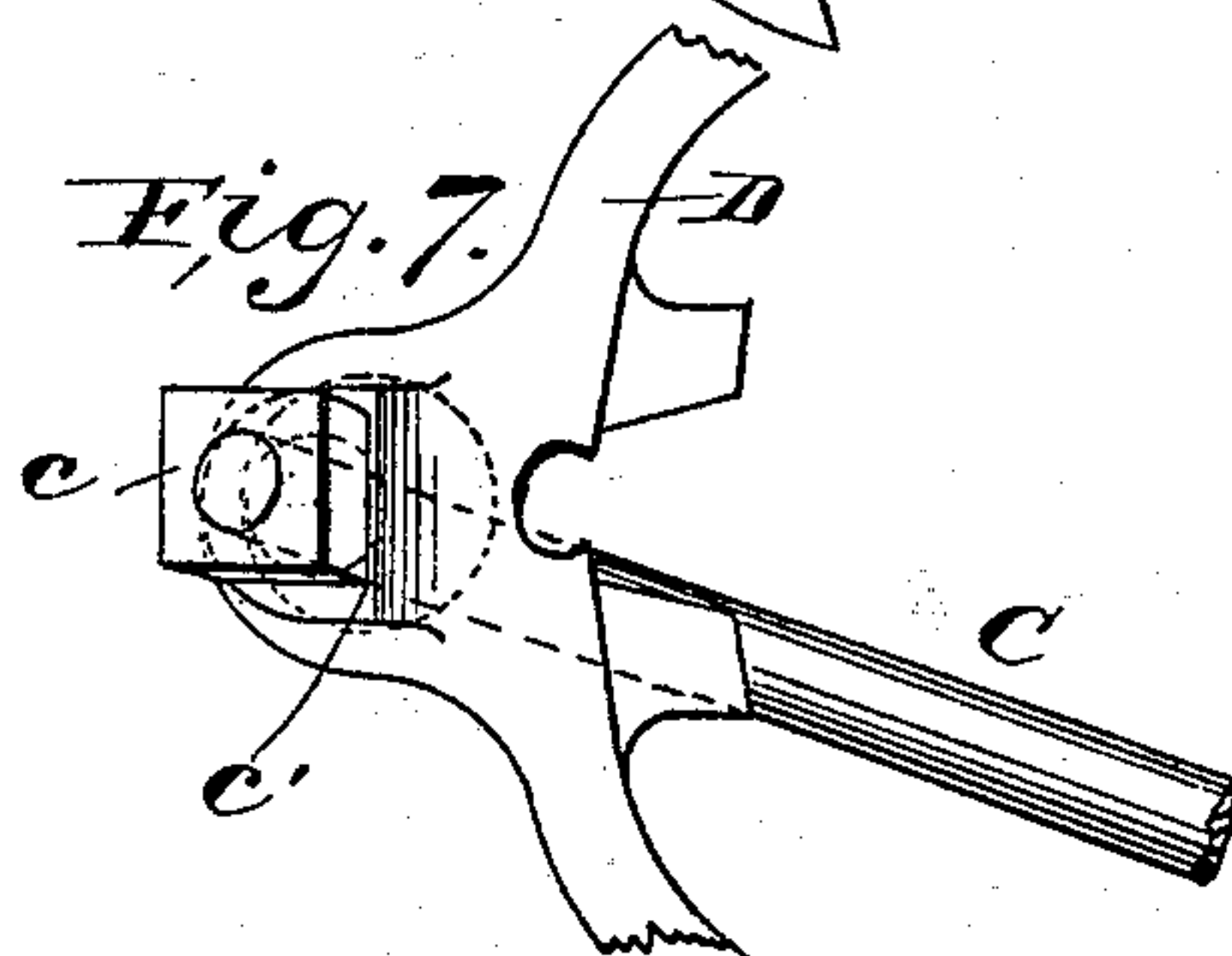


Fig. 7.

Witnesses
M. D. Dyer.
On Oarley.

Inventor
Luther C. Burgess
By his Attorney *F. W. Butler Jr*

UNITED STATES PATENT OFFICE.

LUTHER C. BURGESS, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE CHICAGO RAILWAY EQUIPMENT COMPANY, OF SAME PLACE.

BRAKE-BEAM.

SPECIFICATION forming part of Letters Patent No. 604,456, dated May 24, 1898.

Application filed December 30, 1897. Serial No. 664,562. (No model.)

To all whom it may concern:

Be it known that I, LUTHER C. BURGESS, a citizen of the United States, residing at Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Brake-Beams; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

10 Figure 1 is a plan view of a trussed brake-beam, partly broken away at one end to show the construction which embodies my invention. Fig. 2 is an enlarged horizontal section of one end of the beam, showing the construction which embodies my invention. Fig. 3 is 15 a rear view of the brake-head and a portion of the end of a brake-beam embodying my invention, portions of the brake-head broken off. Fig. 4 is a front view of the end of a 20 central-hung brake-beam and brake-head of the present form. Fig. 5 is an end view of the brake-head and portion of beam shown in Fig. 4. Figs. 6 and 7 show, respectively, a front and an end view of portions of an un- 25 derhung brake-beam of the present form. Figs. 4, 5, 6, and 7 are introduced simply to illustrate the defect incident to the construction of underhung beams, which it is the object of the present invention to correct.

30 Like symbols refer to like parts wherever they occur.

My invention relates to the construction of that class of trussed metallic brake-beams wherein are combined a compression member, a post or strut, a tension member, and a 35 brake-head or equivalent device—as, for instance, a sleeve, end cap, or end plate—to afford a bearing for the nut or equivalent means of connecting the tension and compression member and eliminating the slack from 40 the structure.

For purposes of illustration only a well-known form of tubular or hollow beam has been chosen, wherein A indicates the compression member; B, the post or strut; C, the 45 tension member; D D, the brake-heads, and c c the tension-nuts, whereby the parts are assembled and also by means of which the slack is taken from the structure and a cam- 50 ber given to the compression member A, if desired.

In order to obtain the best results and eliminate all slack from the structure, as well as to reduce any tendency to displacement of the nuts c c, the bearings or seats for said 55 nuts should be in a plane at right angles to the tension member C, and to obtain this result the present practice is to form an inclined seat c' on the brake-head or its equivalent, (see Figs. 4, 5, 6, and 7,) which is ef- 60 fective so long as the beam is hung central (see Figs. 4 and 5) and there is no tendency to rotation of the brake-head.

A "central-hung" beam is understood to be one which is hung in the plane of the car-axle 65 and parallel with the track, and in the hanging of all trussed beams the strut should be maintained parallel with the track to obtain the best results. Consequently in case of an "underhung" beam, or one which is hung in 70 a plane below the plane of the car-axle, the brake-head must be given a "throw" (see Figs. 6 and 7) in order that post and tension-rod may stand parallel with the track and the convexity of the brake-shoe shall, when 75 the brakes are applied, be concentric with the car-wheel. As is well understood by those skilled in railway practice, underhung beams are suspended at different heights above the track on different roads, and to meet these 80 requirements the brake-head is correspondingly positioned with relation to the plane of the strut or post B and tension member C. Consequently the incline c' or seat of the nut c, if at right angles to the axis of the tension 85 member C when the beam is hung central, will not be at a right angle thereto when the beam is under hung, which would necessitate a particular pattern and brake-head for every variation in the hanging, or else the 90 nut c will cant from its seat or bearing, as indicated in Figs. 6 and 7 of the drawings. Furthermore, it has been found in practice that this binding of the nut c on its seat more at one point than at another in underhung 95 beams tends to rotate the head back to its central position, and this tendency, aided by the direction of motion of the wheels in braking, will frequently result in destroying the throw of the beam almost, if not entirely, with 100 resultant injury to brake shoe and beam. To overcome said objections and insure the

proper relation of the nut and its bearing in underhung brake-beams is the object of my present invention, and this I accomplish by providing a rocking or automatically-adjust-
5 able bearing for the tension-rod nut *c*, which is the main feature of my invention.

In carrying out my invention I prefer to employ a bearing-block having the form of the segment of a sphere perforated for the
10 passage of the end of the tension member and provided with a corresponding seat on the brake-head or equivalent support, whereby the bearing-block has a universal movement to accommodate the tension-nut *c*, and such
15 a construction or its equivalent embodies a secondary feature of my invention.

I will now proceed to describe my invention more fully, so that others skilled in the art to which it appertains may apply the same.

20 In the drawings, Figs. 1, 2, and 3, A indicates the compression member; B, the strut or post; C, the tension member, and *c c* the tension-rod nuts by which the parts are united.

In the present instance the brake-heads D
25 D are formed with cups or sockets for the reception of the ends of the compression member A and with lugs *d*, which enter notches in the ends of the compression member to fix the throw of the head and prevent the ro-
30 tation of the head on the compression member, and the heads D D are also perforated for the passage of the threaded ends of the tension member C. The heads D D, there-
fore, in the present instance are the parts
35 upon which the tension-nuts *c c* have their bearing.

1 indicates a bearing-block arranged be-
tween the tension-nut *c* and the brake-head
D, and said block has preferably the form of
40 the segment of a sphere provided with a central opening for the passage of the end of the tension-rod C, and in head D, surrounding

the opening where the end of the tension-rod passes out, is a concavity or seat 2 for the re-
ception of the bearing-block 1.

In setting up the brake-beam the parts are
45 assembled in the usual manner, the strut B being first passed over and adjusted on the compression member A, the tension-rod C applied to the strut and its ends passed
50 through the slots in the compression member and out through the holes in the ends of the head D, after which the bearing-blocks 1 1 are put on the threaded ends of the tension-
rod, with their convexities in the concave
55 seats 2 2 of the head, after which the nuts *c c* are applied and screwed home, the bearing-blocks automatically accommodating them-
selves to the nuts and affording a bearing
60 therefor which will at all times and under all conditions be in the plane of the face of the
nut and at right angles to the tension-rod.

Having thus described my invention, what I claim, and desire to secure by Letters Pat-
ent, is—

1. In a trussed brake-beam, the combina-
tion with the tension member and tension-
nut, of a rocking block or bearing for the
nut, substantially as and for the purposes
70 specified.

2. In a trussed brake-beam, the combina-
tion with the tension-rod and tension-nut, of
a perforated bearing-block having the form
of the segment of a sphere, and a brake-head
having a corresponding seat for the reception
75 of the bearing-block; substantially as and for the purposes specified.

In testimony whereof I affix my signature, in presence of two witnesses, this 27th day of December, 1897.

LUTHER C. BURGESS.

Witnesses:

E. T. WAKLER,
JOHN M. YOUNG.