

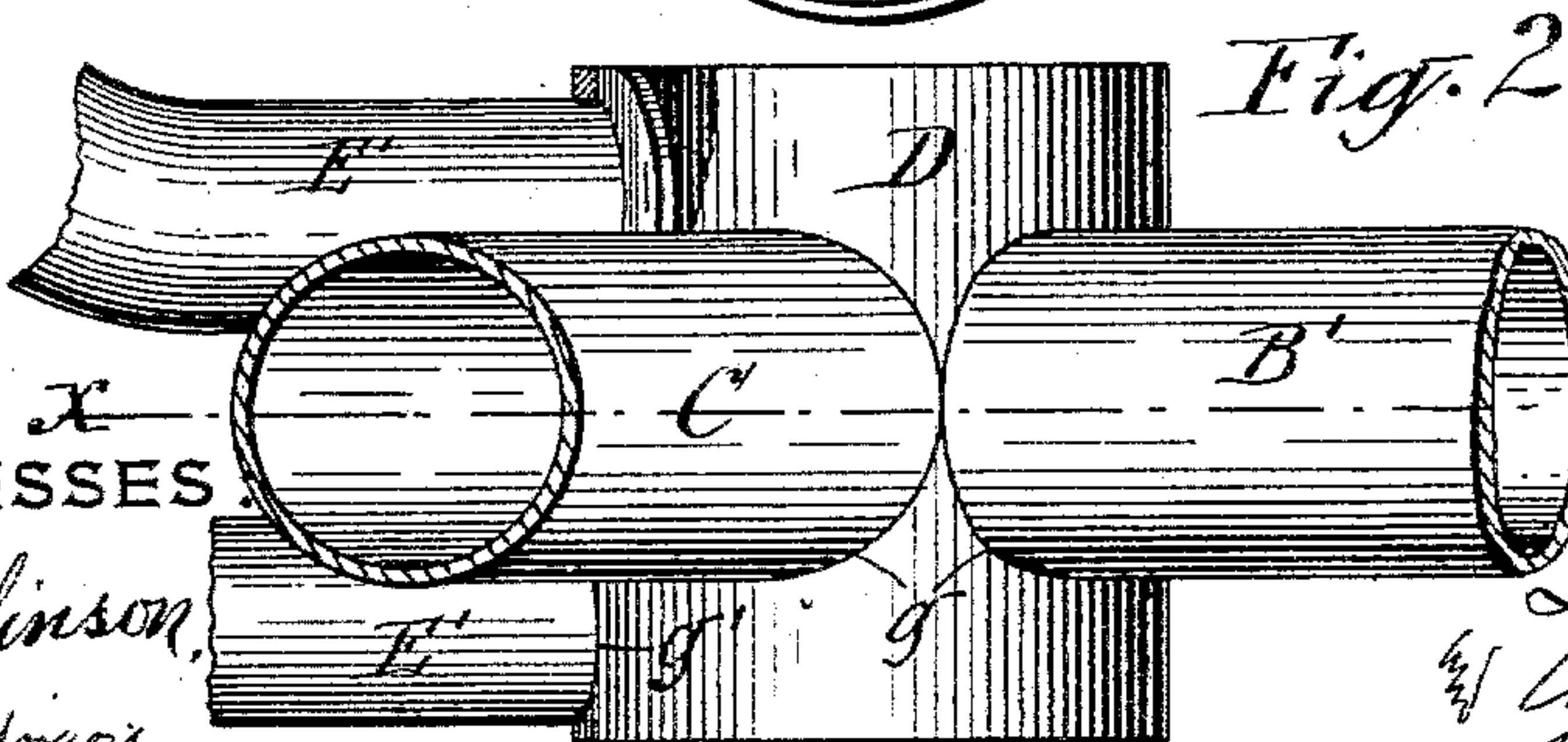
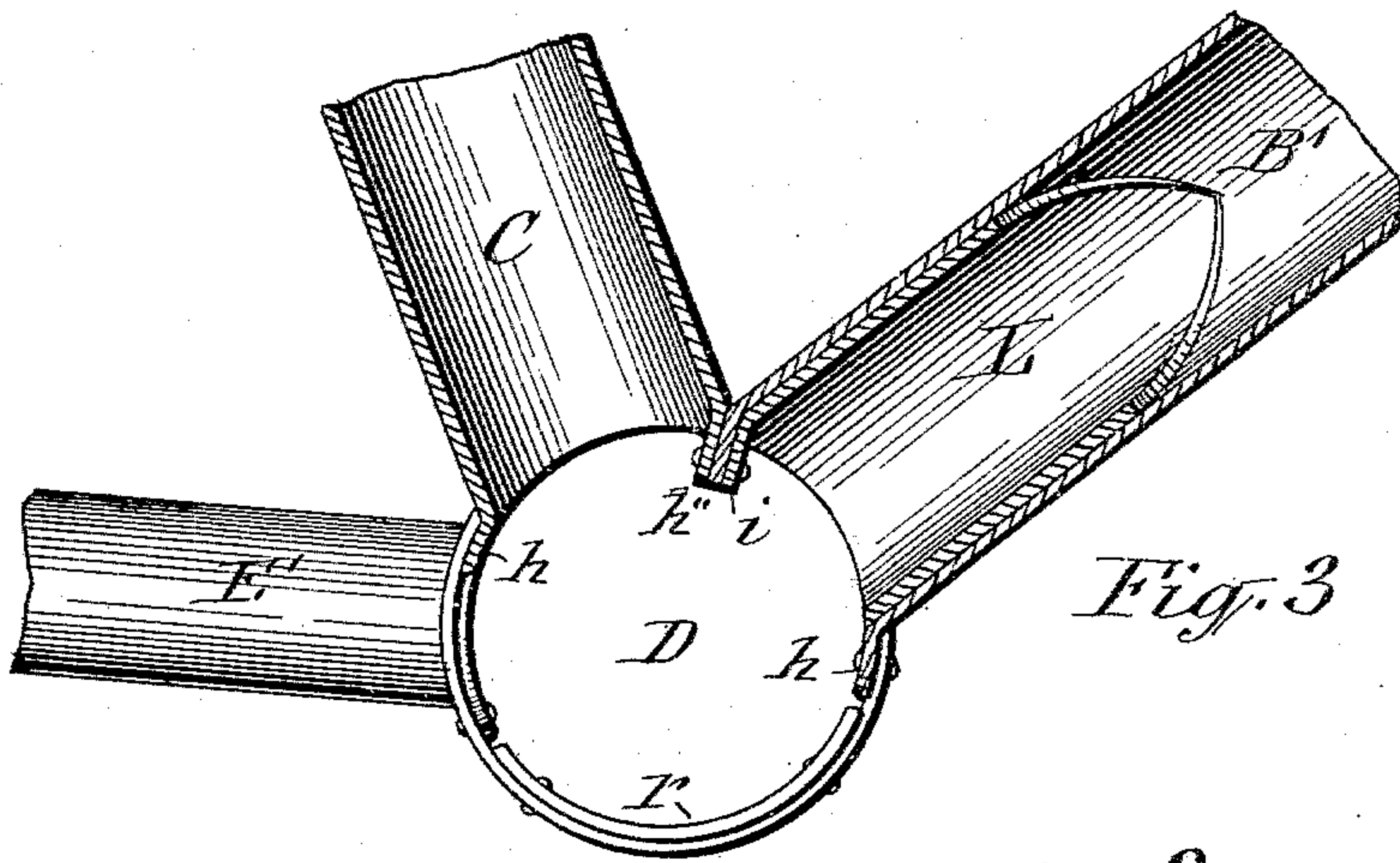
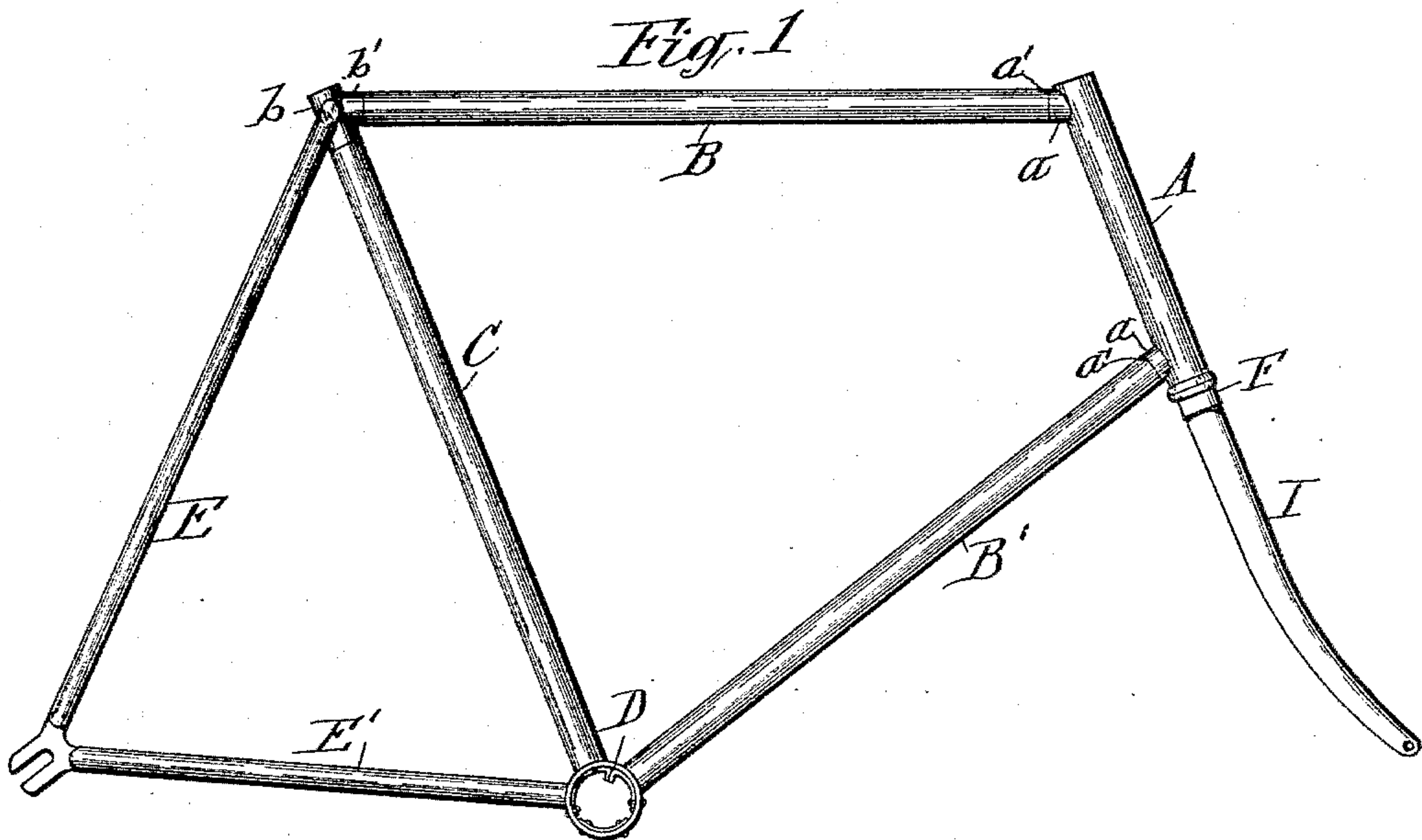
(No Model.)

2 Sheets—Sheet 1.

L. BARNES, Sr. & C. O. BARNES.
BICYCLE FRAME.

No. 563,728.

Patented July 14, 1896.



WITNESSES

Ed. Comlinson,
C. L. Bendorix

INVENTORS

Lucien Barnes, Sr.
Charles O. Barnes
By E. Lauss
ATTORNEY

(No Model.)

2 Sheets—Sheet 2.

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Fig. 4.

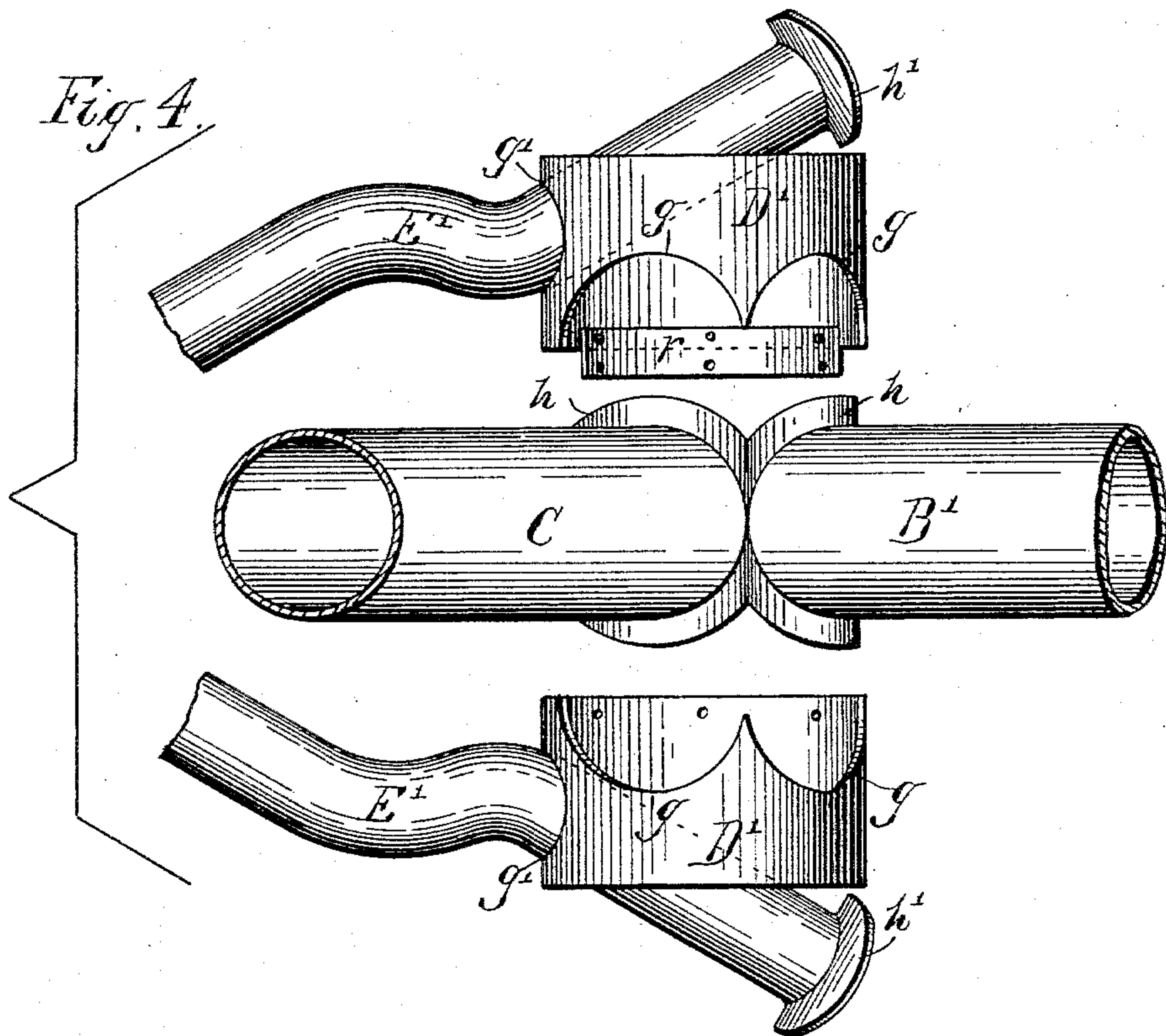
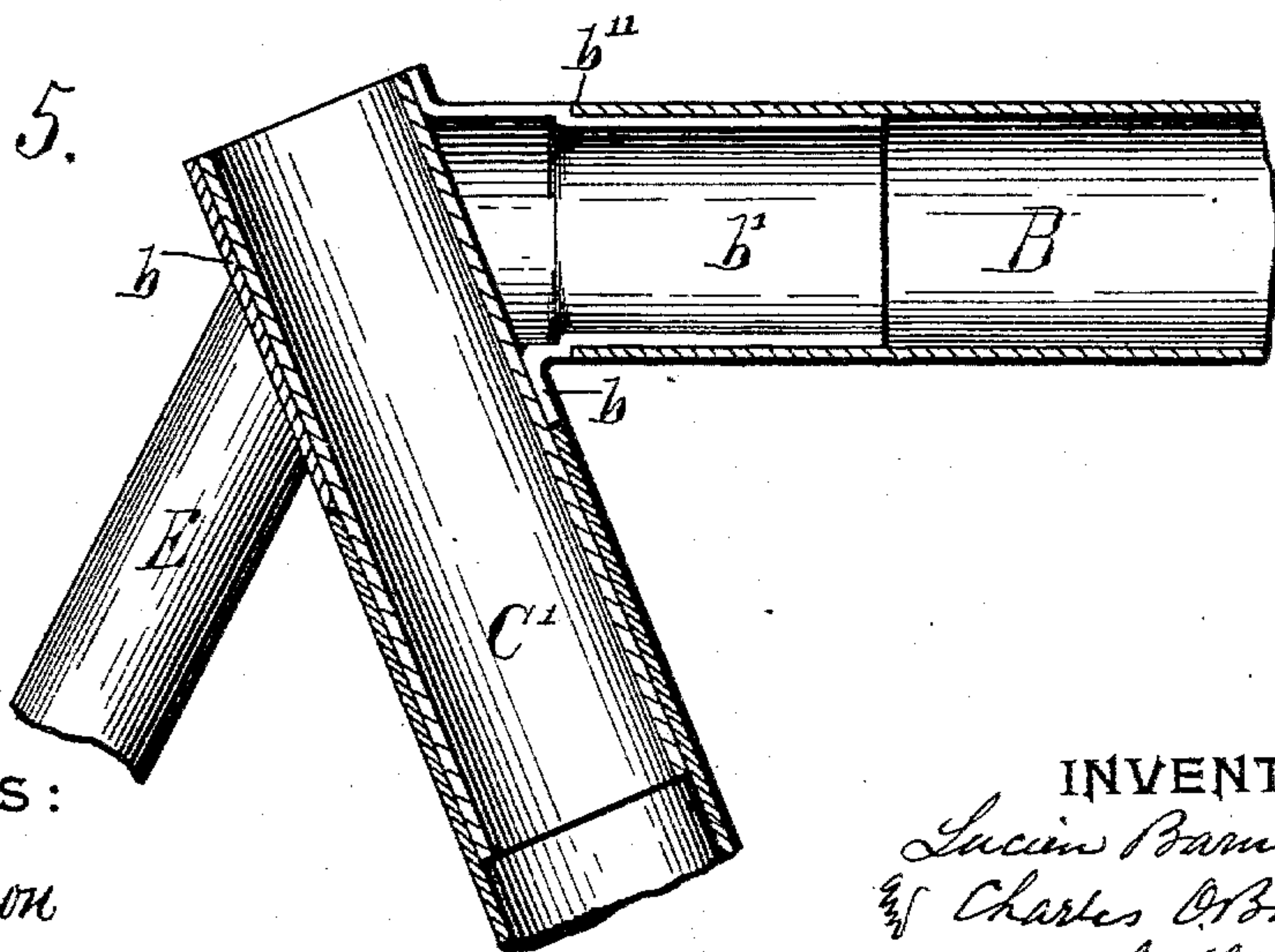


Fig. 5.



WITNESSES:

C. L. Bondipour
C. L. Bondipour

INVENTORS:

Lucius Barnes
Charles O. Barnes
By *E. Loas*
their ATTORNEY

UNITED STATES PATENT OFFICE.

LUCIEN BARNES, SR., AND CHARLES O. BARNES, OF SYRACUSE, NEW YORK.

BICYCLE-FRAME.

SPECIFICATION forming part of Letters Patent No. 563,723, dated July 14, 1896.

Application filed August 16, 1895. Serial No. 559,487. (No model.)

To all whom it may concern:

Be it known that we, LUCIEN BARNES, Sr., and CHARLES O. BARNES, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Bicycle-Frames, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

10 This invention relates to the construction of the frames of bicycles.

The object of the invention is to impart rigidity and durability to the frame and at the same time cause it to present a neater exterior at the junctions of its component parts; and to that end the invention consists in the improved construction of the joints of the frame members, as hereinafter fully described, and specifically set forth in the claims.

20 In the annexed drawings, Figure 1 is a side elevation of a bicycle embodying our invention. Fig. 2 is an enlarged top plan view of the crank-hanger and adjacent portions of the frame members. Fig. 3 is a vertical transverse section on line $x-x$ in Fig. 4. Fig. 4 is a top plan of the aforesaid parts of the frame in a detached condition, and Fig. 5 is a vertical longitudinal section of the upper end portion of the central post with the adjacent parts of the frame.

30 Similar letters of reference indicate corresponding parts.

A represents the so-called "head" of the frame. F denotes the steering-fork, which is pivoted in said head.

35 B and B' are the struts or frame members which connect the head A to the central post C and crank-hanger D, and E and E' are the usual rear braces, which are united at their rear ends and carried thereat on the hind wheel of the bicycle.

40 The crank-hanger D we form of separate tube-sections D' D', which we permanently unite end to end by splicing them together by means of a ring r , placed across the joint of the said tube-sections on the inner sides thereof and riveted and brazed thereto. This splice serves mainly to hold the tube-sections together while brazing the same at their abutting ends. These tube-sections we form at their abutting ends with coinciding semicircular notches $g g$, and thus provide the hanger

with orifices, into which the adjacent ends of the central post C and lower strut B are inserted. Said post and strut terminate with flanges $h h$, which we permanently secure to the inner side of the hanger, preferably by brazing them thereon. This attachment serves to strengthen the union of the two tube-sections D' D'.

60 We preferably make two orifices $g g$ in such positions in the hanger D as to cause said orifices to intersect each other. Those portions of the flanges $h h$ of the two members C and B' which are adjacent to each other we deflect inward, so as to stand contiguous side by side, as shown at h'' in Fig. 3 of the drawings, which portions we braze to each other. To reinforce this latter connection, we insert into the member B' a tubular bushing L, formed with an inwardly-deflected flange i , which we rivet and braze to one side of the united portion h'' of the flanges h . In the manufacture of this part of the frame we first secure the frame members C and B' to one of the tube-sections D' before its attachment to the companion tube-section, and thus obtain convenient access to the interior of the tube-section to effect the aforesaid brazing in a more thorough and reliable manner. The other tube-section D' is then placed to abut against aforesaid section and brazed thereon and onto the splicing-ring r , and the remaining portions of the flanges are then easily brazed to the interior of the tube-section. Each of said tube-sections we provide also with an orifice g' for the attachment of one of the rear braces E', which attachment is effected by passing said brace through the orifice from the inside of the tube-section, as represented in Fig. 4 of the drawings. Said brace is provided with a flange h' , which we braze to the inner side of the tube-section.

75 The attachment of the rear end of the upper strut B to the tubular central post C we form by inserting into the upper end of said post the tubular bushing C', which we braze therein, so as to securely fasten it thereto, and reinforce said portions of the post. This bushing projects from the end of the post and has brazed to its exterior the sleeve b , which embraces the same and is formed with the thimble b' , the end portion of which is circumferentially reduced to form an external shoulder.

der *b''*, as shown in Fig. 9 of the drawings. Said strut is brazed to the thimble and abuts against said shoulder to make a flush joint and to permanently unite said parts.

5 What we claim as our invention is—

1. In a crank-hanger for bicycle-frames, the combination of a splicing-ring, the tube-sections secured end to end on said ring, and the frame members secured to said hanger.

10 2. In a crank-hanger for bicycle-frames, the combination of a splicing-ring, the tube-sections secured end to end on said ring, and the frame members secured to said hanger at the junction of the tube-sections.

15 3. In a bicycle-frame the crank-hanger composed of separate tube-sections united end to end and formed with orifices at the junction of said sections, and tubular frame members each of which is inserted at one end
20 into one of the aforesaid orifices and terminated with a flange secured to the interior of the hanger as set forth.

4. In a bicycle-frame the crank-hanger composed of separate tube-sections abutting
25 end to end, and formed with orifices at the junction of said sections, a ring splicing the tube-sections together, and tubular frame members, each of which is inserted at one end into one of the aforesaid orifices and ter-
30 minated with a flange secured to the interior of the hanger as set forth.

5. The combination of a crank-hanger composed of separate tube-sections united end to end and formed at their junction with orifices intersecting each other, and tubular
35 frame members each inserted at one end into one of the aforesaid orifices and terminated with a flange secured to the interior of the hanger and with an inward deflection of said
40 flange fastened to a corresponding deflection of the adjacent member as set forth and shown.

6. The combination with a post C, of the bushing C' secured to the interior of said post and projecting from the end thereof, a sleeve
45 *b* embracing the projecting portion of the bushing and resting on the end of the post flush therewith, said bushing formed with a thimble *b'* having a circumferentially-reduced
50 end portion forming a shoulder *b''*, and the strut B secured on the said reduced portion of the thimble and butting against the shoulder to bring said strut flush with the thimble as set forth.

In testimony whereof we have hereunto
55 signed our names this 6th day of August, 1895.

LUCIEN BARNES, SR. [L. S.]
CHARLES O. BARNES. [L. S.]

Witnesses:

J. J. LAASS,
C. L. BENDIXON.