

(No Model.)

C. E. TOMLINSON.
BICYCLE FRAME.

No. 554,465.

Patented Feb. 11, 1896.

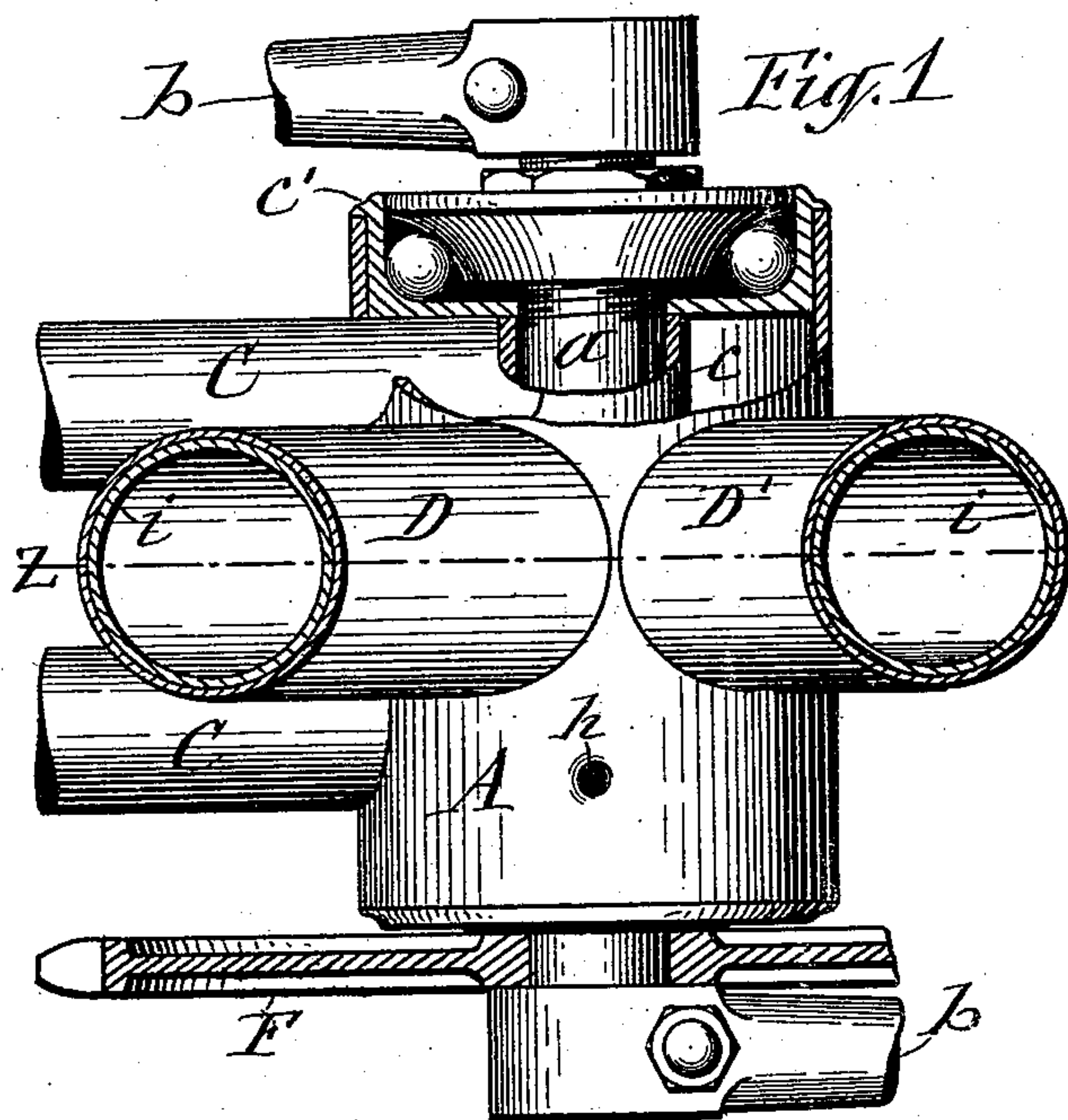


Fig. 1

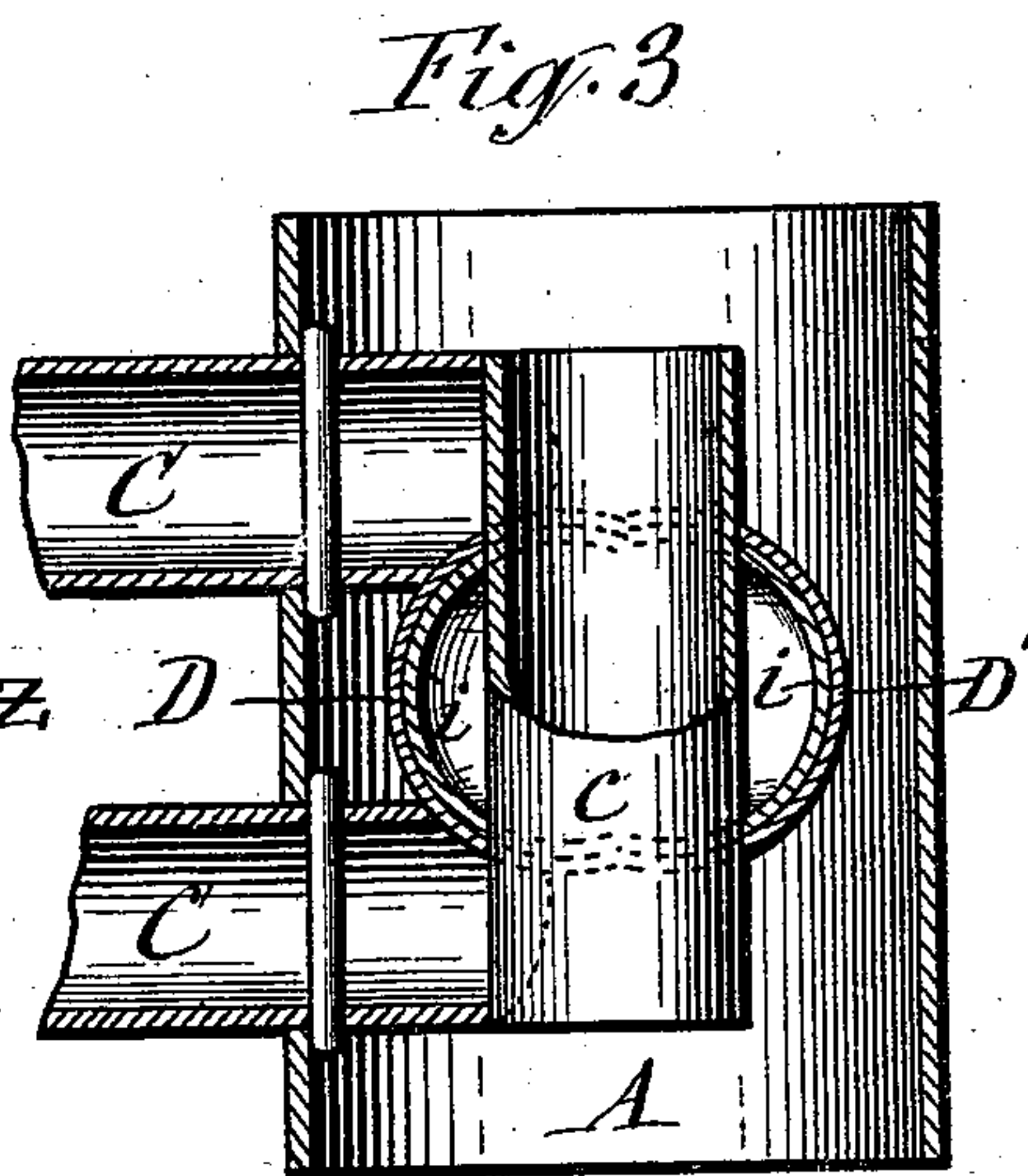


Fig. 3

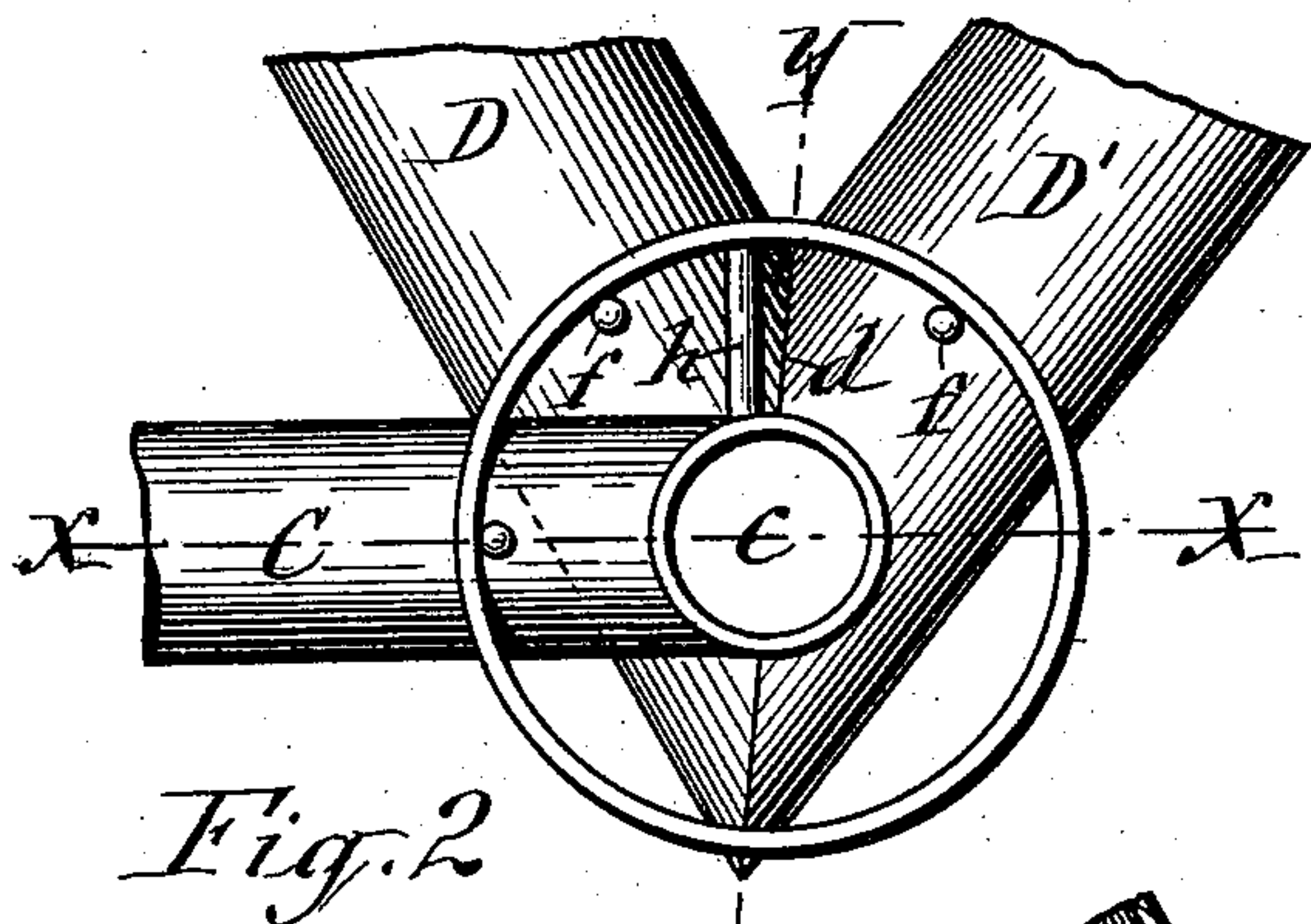


Fig. 2

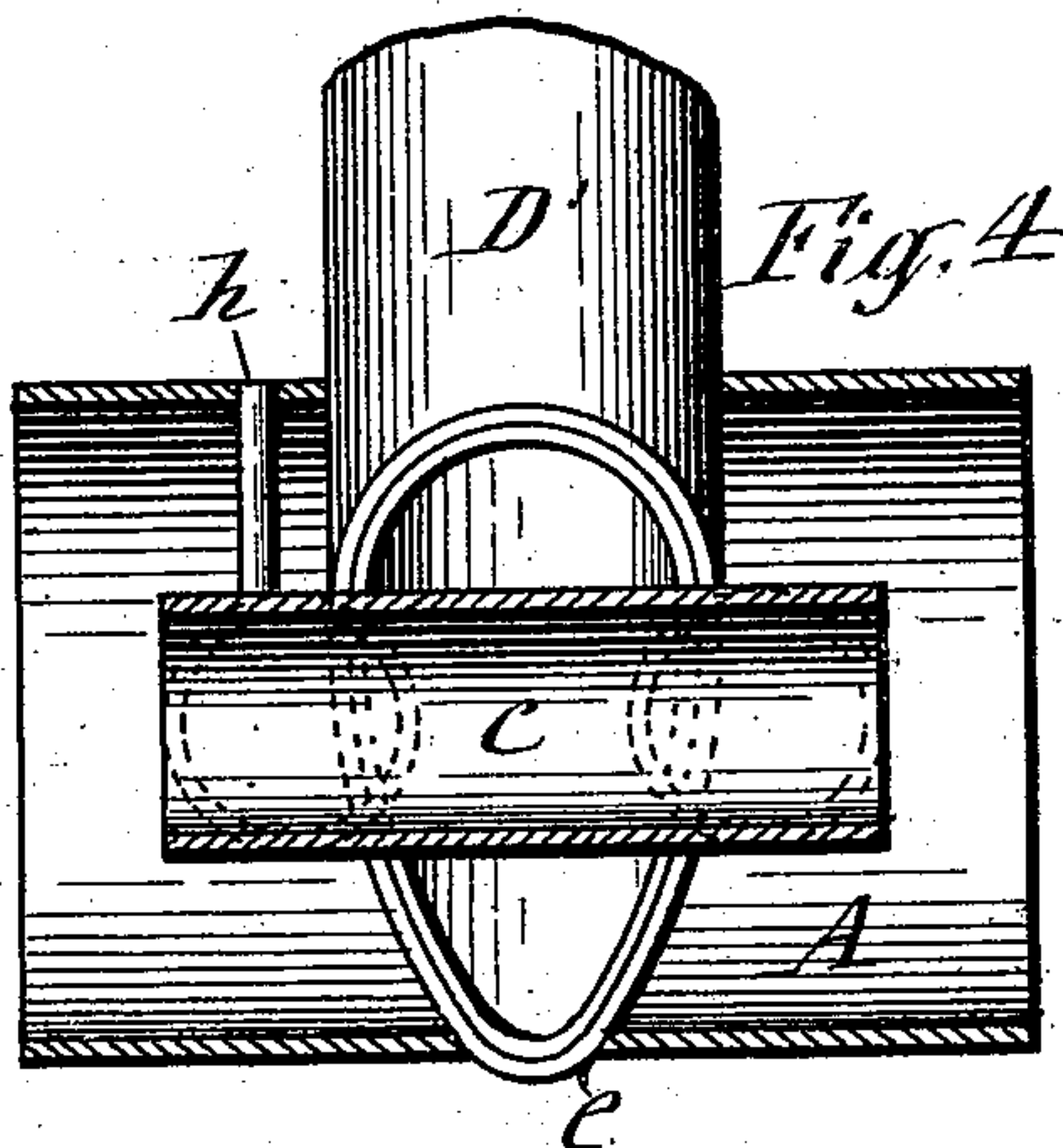


Fig. 4

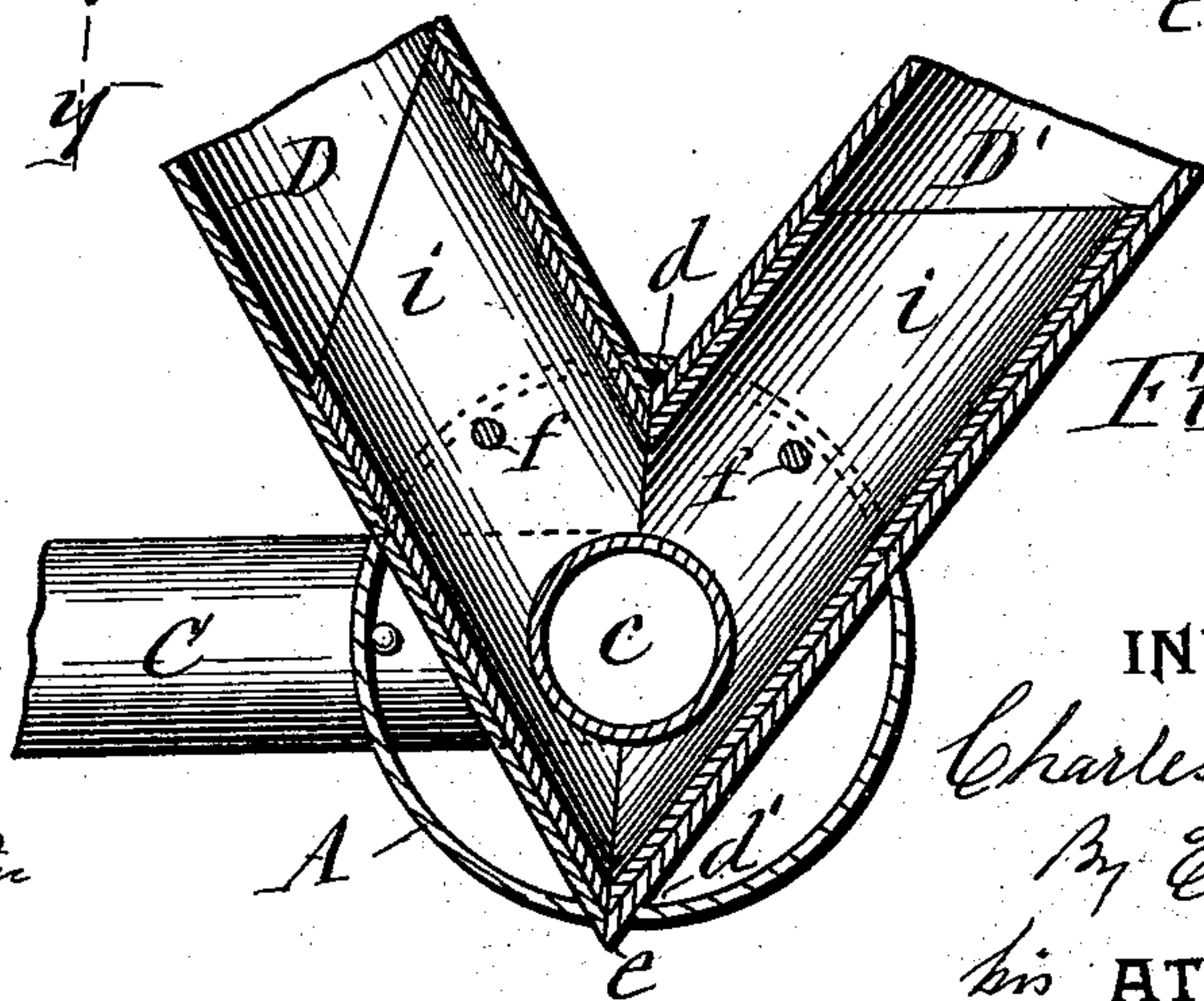


Fig. 5

WITNESSES:

C. L. Bendixson
E. A. Huntington

INVENTOR:

Charles E. Tomlinson
By E. Laess
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UNITED STATES PATENT OFFICE.

CHARLES E. TOMLINSON, OF SYRACUSE, NEW YORK, ASSIGNOR OF ONE-HALF TO EMIL LAASS, OF SAME PLACE.

BICYCLE-FRAME.

SPECIFICATION forming part of Letters Patent No. 554,465, dated February 11, 1896.

Application filed January 4, 1896. Serial No. 574,302. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. TOMLINSON, 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.

This invention relates to the attachment of the post and braces to the crank-hanger of a bicycle, but has particular reference to improvements on the form of device shown in my pending application, Serial No. 560,210, filed August 23, 1895.

The object of the present invention is to provide a more secure and firm fastening of the central post and lower forward brace to the crank-hanger tube; and to this end the invention consists in certain peculiarities in the construction of the parts named at the junction thereof, substantially as hereinafter described and claimed.

In the annexed drawings, Figure 1 is a plan view of a crank-hanger embodying my invention. Fig. 2 is an end view of the same minus the attachment of the roller-bearings of the crank-shaft. Fig. 3 is a horizontal section on line XX in Fig. 2. Fig. 4 is a vertical section on line YY in Fig. 2, and Fig. 5 is a vertical section on line ZZ in Fig. 1.

A represents the crank-hanger of a bicycle. Said hanger is formed of a metallic tube, usually of steel, and provided at opposite ends with suitable ball-bearings *c'* for the axle *a*, to which the pedals *b b* and sprocket-wheel *F* are attached. *D* and *D'* are respectively the lower ends of the central post and of the forwardly-extending brace, and *C C* are the front end portions of the rearwardly-extending braces of the frame. Said post and braces I permanently and securely attach to the crank-hanger *A* by placing longitudinally in the center of said hanger a comparatively small supplemental tube *c*, through which the axle *a* passes. This supplemental tube *c* I utilize as a key for locking together the attaching ends of the frame members *D D'*, the ends of which latter are inserted through orifices in the upper portion of the tube *A* and are cut off slanting so as to miter together, as shown at *d*, and extend jointly across the in-

terior of said tube, as shown in Figs. 2, 4 and 5 of the drawings. In the mitered edges of the members *D* and *D'* are cut coinciding semicircular notches, corresponding to the external periphery of the supplemental tube *c*, which passes through said notches and is brazed to the edges thereof.

In order to maintain the members *D D'* firmly interlocked with the supplemental tube *c* I prefer to provide the tube *A* with a notch *e*, into which I insert the V-shaped joined ends *d'* of the aforesaid members. The members *D* and *D'* are brazed to each other along their mitered junction *d*, and are also brazed to the edges of the orifices in the tube *A* and to the notch *e*, and when this is effected all of said parts are inseparable.

Inasmuch as all of the brazing is made inside of the tube *A*, said brazing is invisible on the exterior of said tube and external parts of the members *D* and *D'*, and therefore the time and labor heretofore required for cleaning and finishing the exteriors of said parts after they are brazed together are dispensed with.

In assembling said parts preparatory to brazing them I insert the mitered ends of the members through the orifices in the upper portion of the tube *A* and push the V-shaped joined extremities of said members into the notch *e*, and then drill holes through the sides of the members *D D'* adjacent to the inner side of the tube *A* and insert pins *f f* in said holes, which not only reinforce the attachment of said members, but also serve to hold the members *D D'* in place during the process of brazing the same. I then drill transversely through the mitered junction of the members *D D'* a hole corresponding to the diameter of the supplemental tube *c*, which passes through said hole and is braced to the edges thereof. I also prefer to extend the fork members *C* into the tube *A* and abut them against the side of the tube *c*. The abutting ends are cut segmental to conform to and closely embrace the side of the tube *c*, and thus effectually prevent vertical play of said ends of the members *C C*, which are further secured thereon by brazing.

The tube *c* I prefer to utilize for conveying lubricant to the roller-bearings, and for this

purpose I tap said tube by a small lubricant pipe or duct *h*, which passes through the top of the tube A, as shown more clearly in Fig. 2 of the drawings. I also prefer to strengthen the union of the members D D' by inserting into the aforesaid ends of said members reinforcing-tube sections *i i*, having mitering meeting edges corresponding to the miter-line *d* and brazed together, said meeting edges extending the entire length of the meeting edges of members D D', and being formed with openings through which the supplemental tube *c* extends.

It will be observed that as the lower ends of the tubular frame members extend entirely across the hanger-tube each of said lower ends has two positive holds on the hanger-tube at points approximately diametrically opposite each other, thereby effecting most efficient bracing and securing of the parts.

What I claim as my invention is—

1. The combination with the crank-hanger tube, of tubular frame members extending jointly with their lower ends entirely across said hanger-tube to afford for each of said members two positive holds on the hanger-tube at points approximately diametrically opposite each other, said tubes being united at their meeting edges.

2. The combination of a crank-hanger tube provided in one side of its axis with orifices and in the opposite side with a notch, and tubular frame members inserted through said orifices and mitered to each other inside of said tube and seated in the aforesaid notch.

3. The combination with a crank-hanger tube, of tubular frame members extending jointly with their lower ends entirely across the interior of said tube and having said ends mitered together from one side to the other of said tube, and reinforcing-tubes inserted

in said ends of the frame members and having meeting edges extending the entire length of the meeting edges of the frame members and mitered correspondingly.

4. The combination with a crank-hanger tube, and supplemental tube rigidly secured longitudinally within said crank-hanger tube, of tubular frame members firmly embracing the supplemental tube to interlock therewith, said tubular frame members extending jointly with their lower ends entirely across said hanger-tube to afford for each of said members two positive holds on the hanger-tube at points approximately diametrically opposite each other.

5. The combination with a crank-hanger tube and internally-arranged supplemental tube, of tubular frame members extending jointly with their lower ends entirely across said hanger-tube and having said ends embracing between them the aforesaid internal tube and mitered together above and below the latter.

6. The combination with the tube A of the frame members D D' extending with their ends diametrically across the interior of said tube and united thereat, the tube *c* passing through the junction of said members, and the fork members C C inserted with their ends through the side of the tube A and terminated with segmental-shaped ends abutting against the side of the tube *c*, all permanently united by brazing as set forth.

In testimony whereof I have hereunto signed my name this 31st day of December, 1895.

CHARLES E. TOMLINSON. [L. S.]

Witnesses:

JOHN J. LAASS,
C. L. BENDIXON.