

No. 671,053.

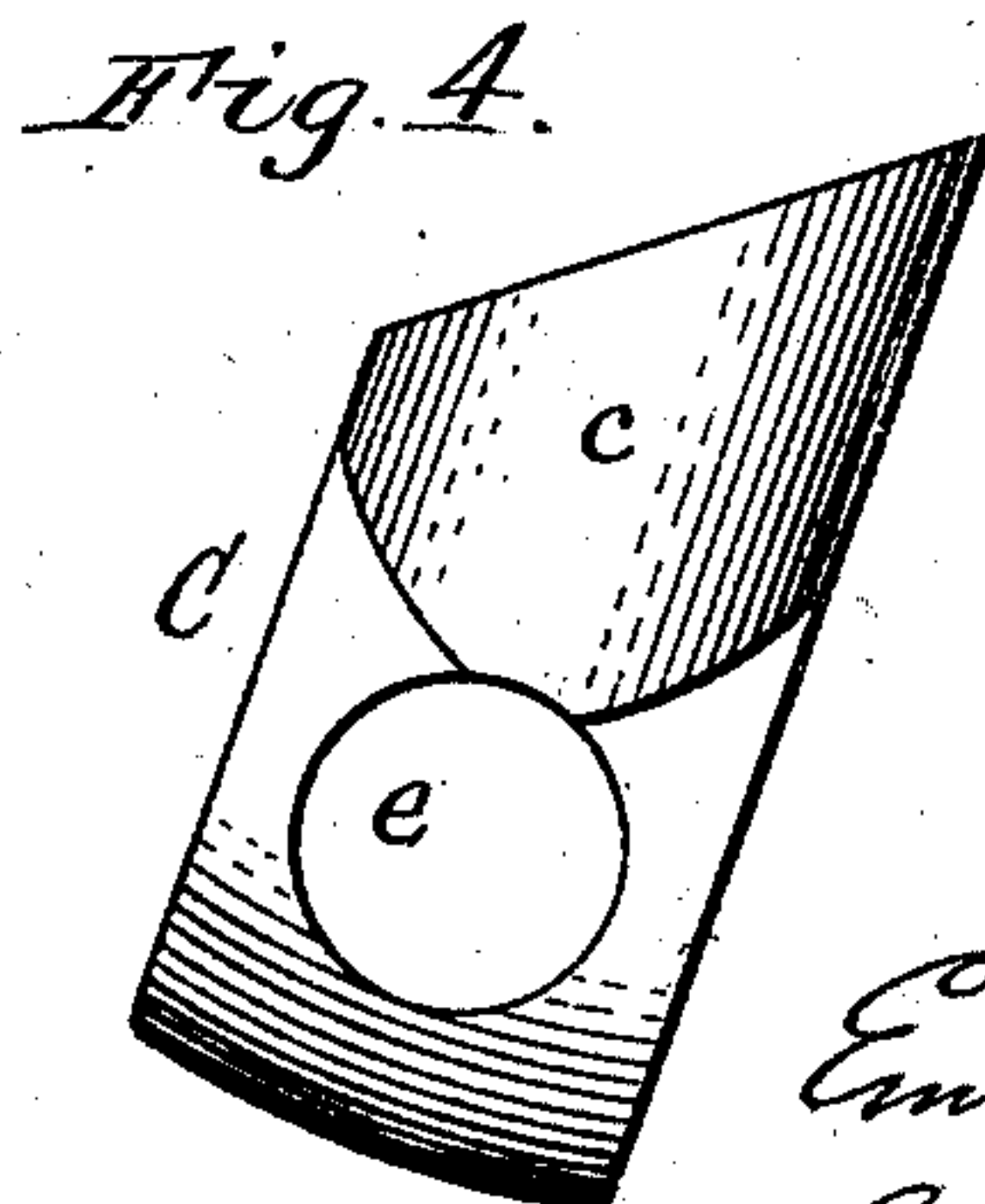
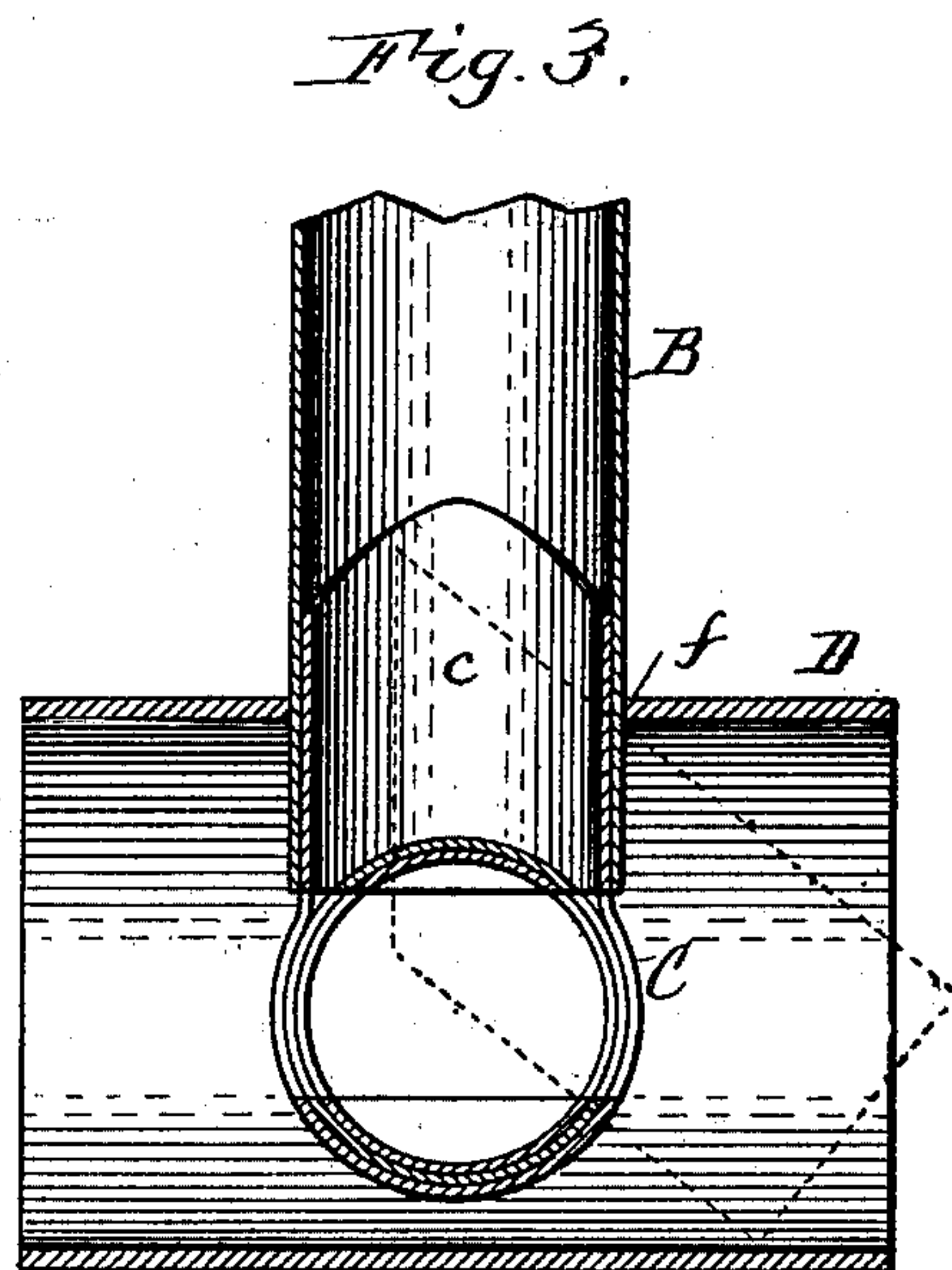
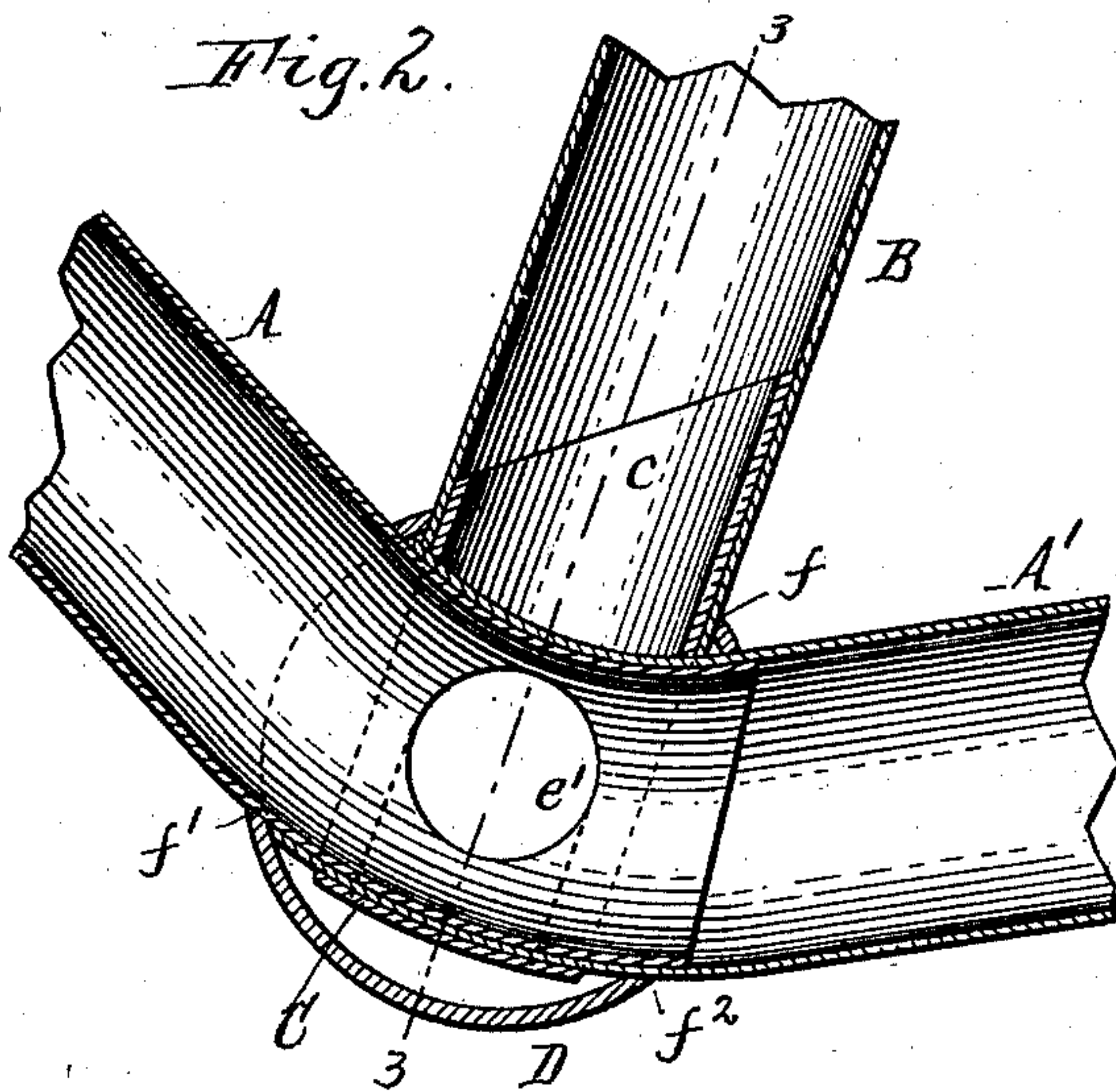
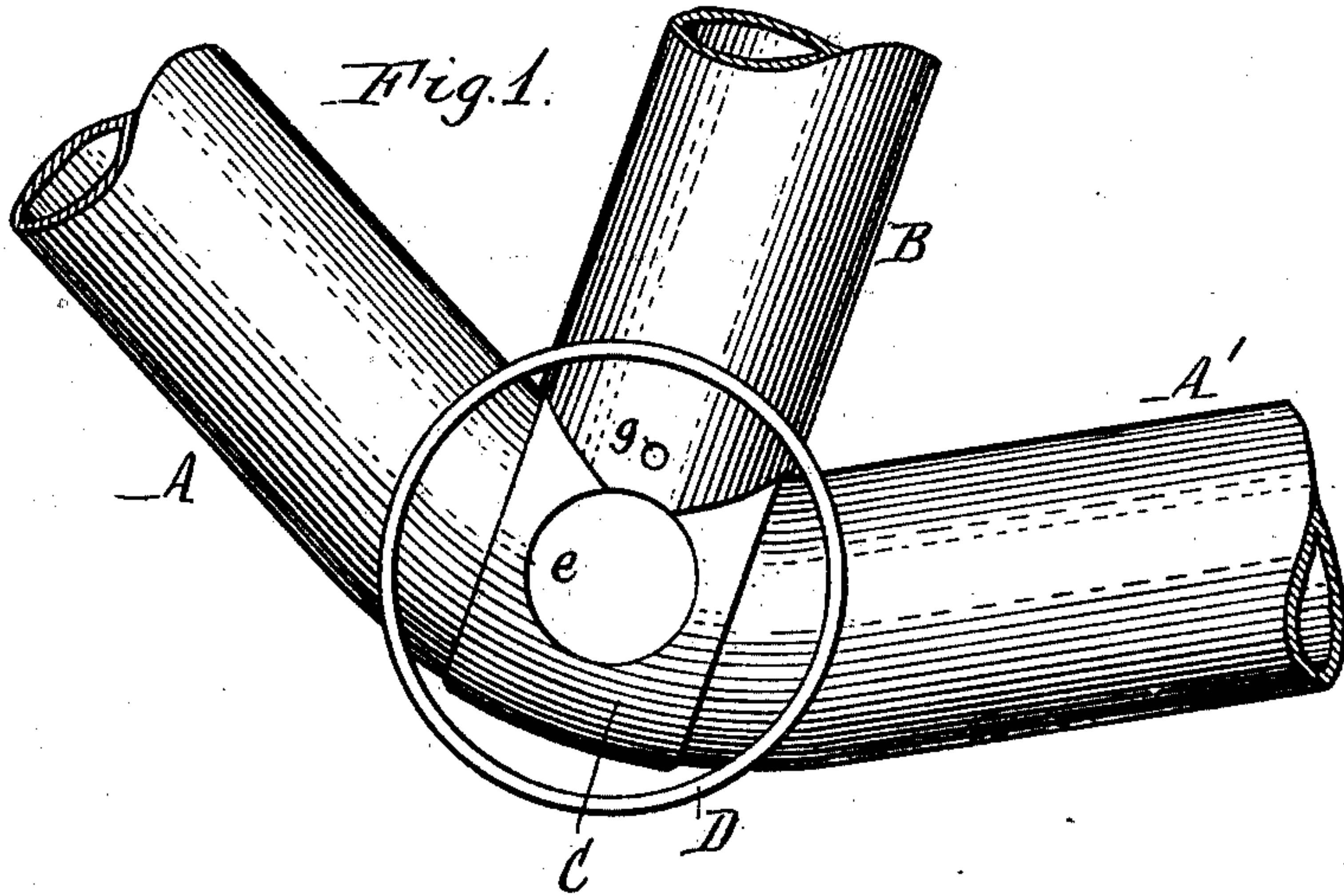
Patented Apr. 2, 1901.

E. G. LATTA.  
VELOCIPEDE FRAME.

(Application filed June 13, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:  
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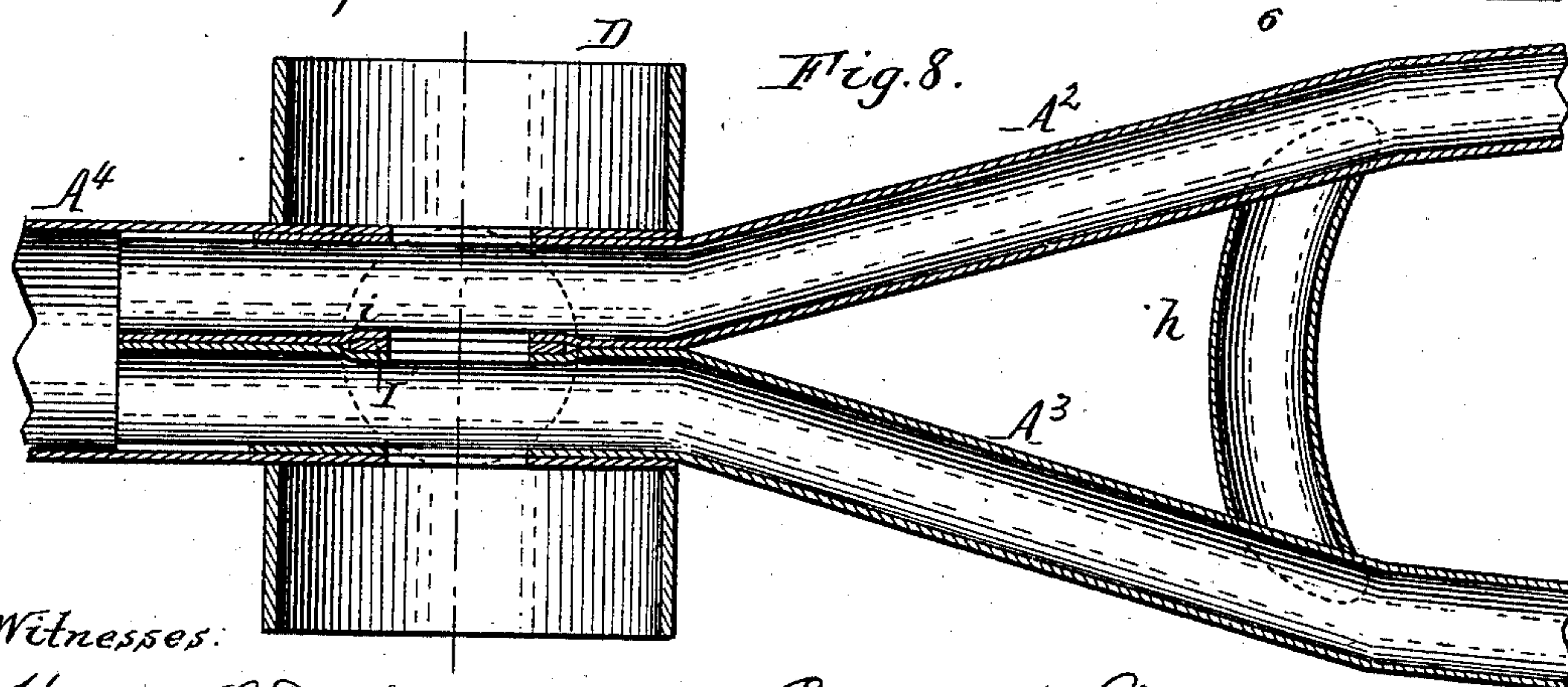
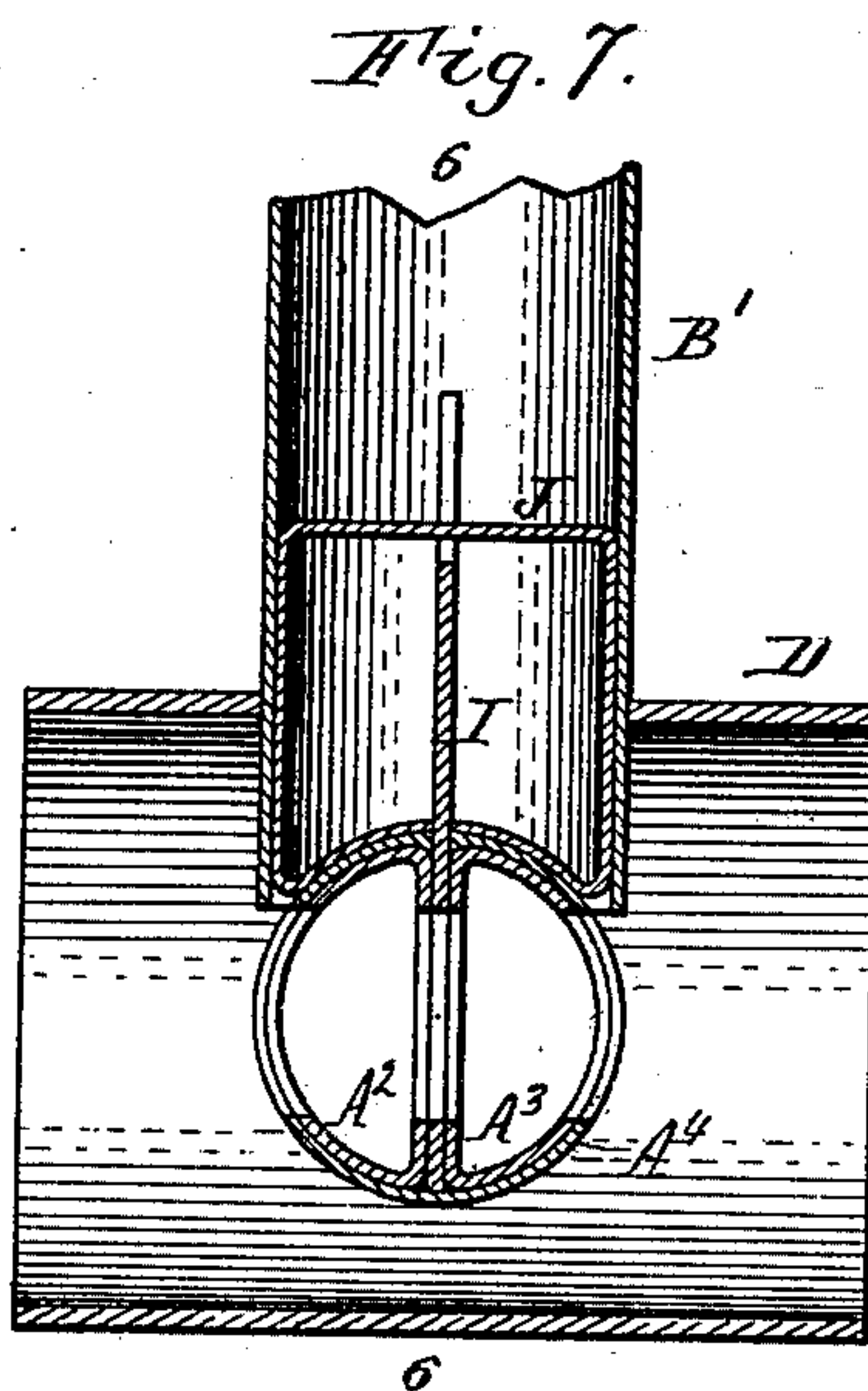
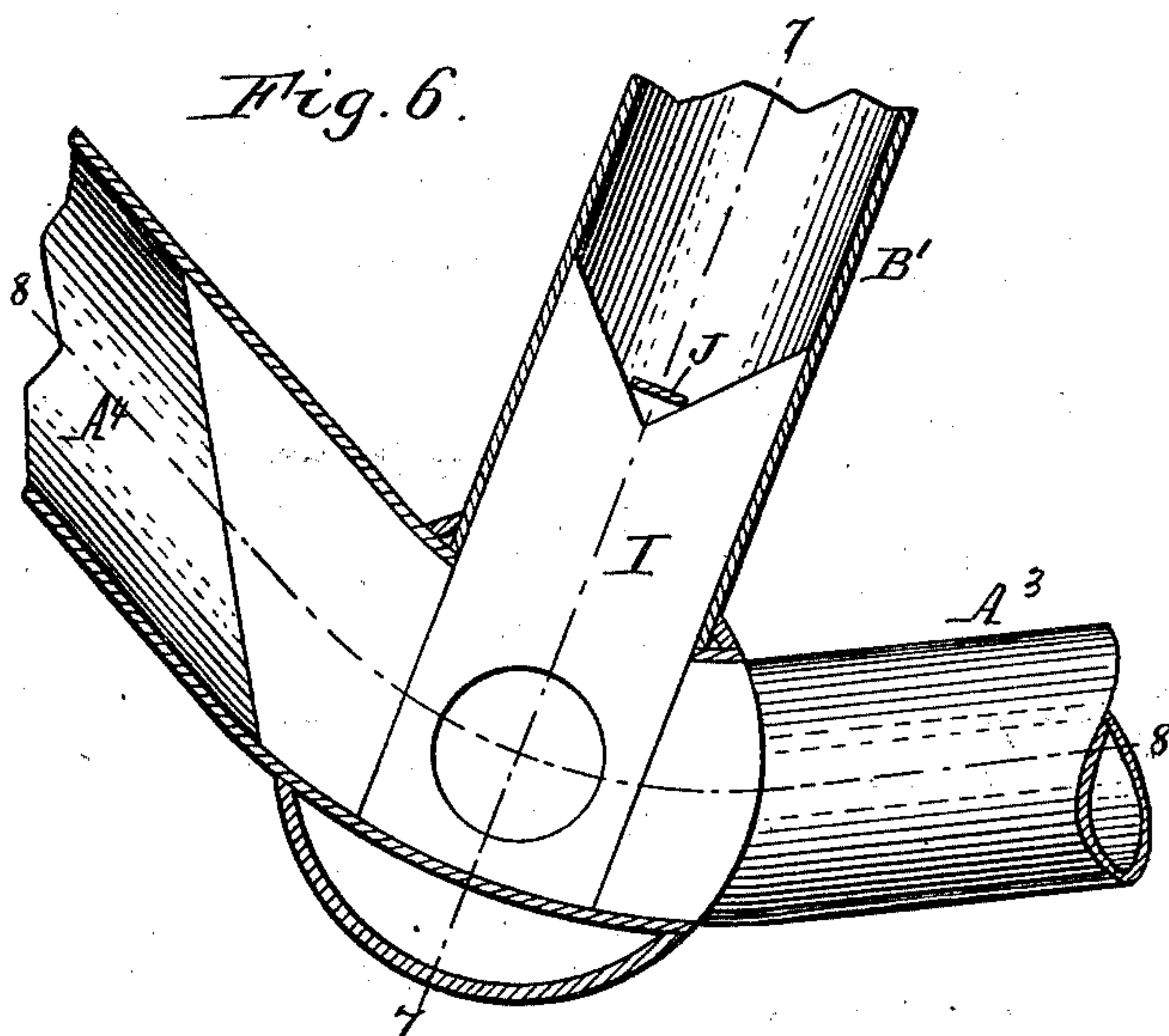
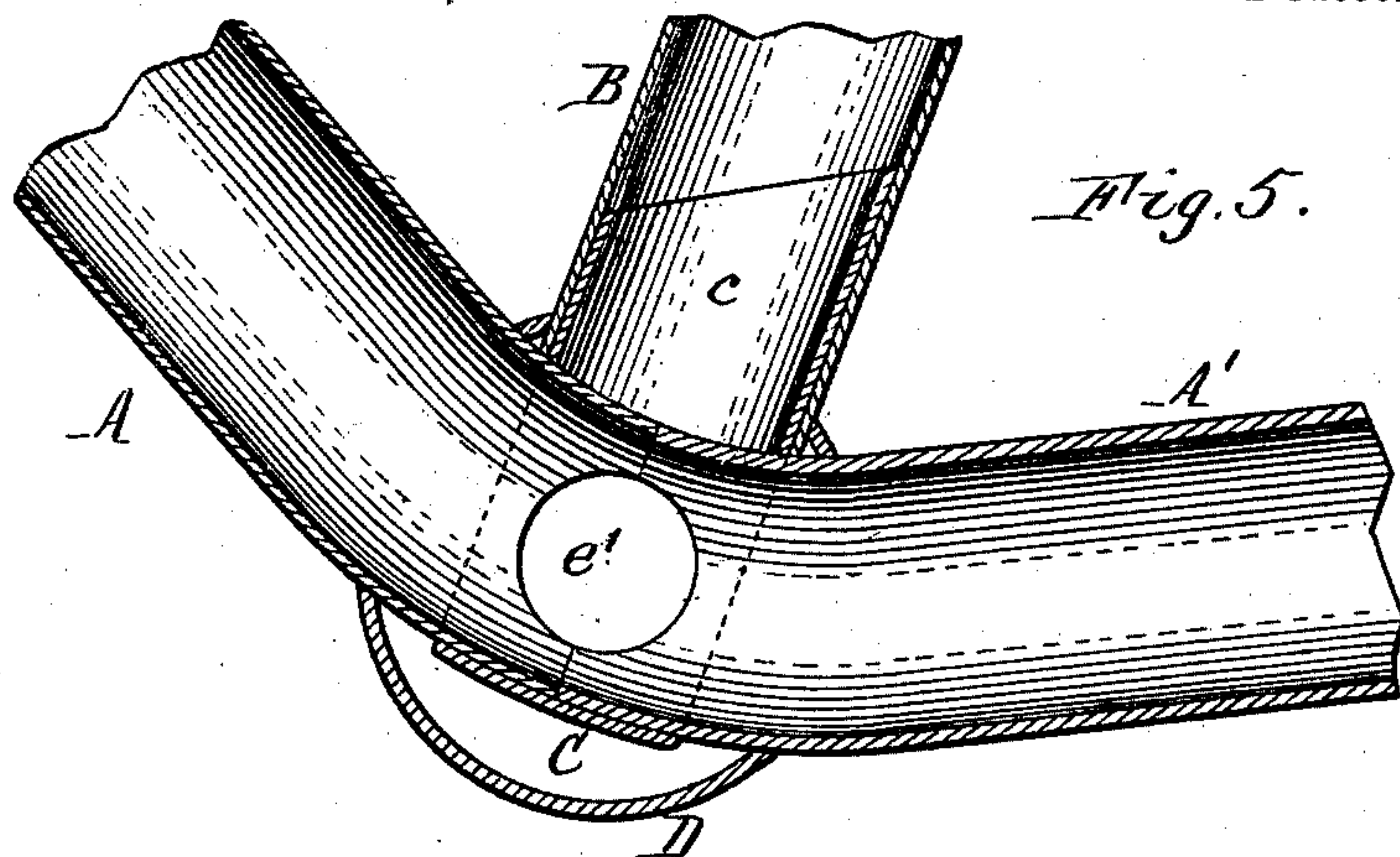
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**2 Sheets—Sheet 2**



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# UNITED STATES PATENT OFFICE.

EMMIT G. LATTA, OF FRIENDSHIP, NEW YORK.

## VELOCIPED-FRAME.

SPECIFICATION forming part of Letters Patent No. 671,053, dated April 2, 1901.

Application filed June 13, 1900. Serial No. 20,137. (No model.)

*To all whom it may concern:*

Be it known that I, EMMIT G. LATTA, a citizen of the United States, residing at Friendship, in the county of Allegany and State of New York, have invented new and useful Improvements in Velocipede-Frames, of which the following is a specification.

This invention relates to the joint or union between the frame members which meet at the crank hanger or bracket.

My invention has for its objects to produce a frame in which the members are connected together independently of the crank-hanger and to combine the frame with the hanger in such manner as to render the same lighter, less expensive, stronger, and more reliable than the frames now in general use.

In the accompanying drawings, consisting of two sheets, Figure 1 is a fragmentary side elevation of the frame and the hanger. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is a cross-section in line 3 3, Fig. 2. Fig. 4 is a detached side elevation of the connecting clip or union. Fig. 5 is a vertical longitudinal section of a modified construction of the joint. Fig. 6 is a similar view of another modification, the plane of the section being in line 6 6, Fig. 7. Fig. 7 is a cross-section in line 7 7, Fig. 6. Fig. 8 is a longitudinal section in line 8 8, Fig. 6.

Like letters of reference refer to like parts in the several figures.

A A' are the inclined front and rear portions of the reach, which preferably consist of two separate tubes having their adjoining end portions telescoped or fitted one within the other, as shown in Fig. 2, and secured together by brazing.

B is the upright tube member of the velocipede-frame, and C is a clip or union which connects said tube member with the reach. This clip embraces the bottom and sides of the meeting or telescoped portions of the reach-sections and is provided at its upper side with a projecting tubular lug or nipple c, to which the lower end of the upright frame member B is secured by brazing or otherwise, said member being preferably fitted over said nipple, as shown. The clip C may be cheaply constructed of a blank of sheet metal which is bent around the reach and which has its end portions brought together

above the reach, each of said end portions being semicylindrical in form. As the reach sections on opposite sides of the clip C are arranged at an angle to each other, the portions thereof embraced by the clip are curved or connected by an easy bend. The clip C and the telescoped portions of the reach members are provided with coinciding openings *e e'* for the passage of the crank-shaft, which latter is not shown in the drawings. This construction forms a strong and inexpensive connection which reliably unites said members in the absence of the crank-hanger D; but the hanger is preferably combined with the frame members, as shown in Figs. 1, 2, and 3. The hanger is arranged concentrically with the shaft-openings *e e'* and provided centrally in its upper, front, and rear sides with openings *f f' f''*, arranged in line with each other circumferentially of the hanger, through which openings the upright frame member B and the front and rear reach members A A' pass and in which they are brazed. The hanger may consist of a piece of ordinary seamless tubing of the desired length and diameter. The usual ball-bearings, which are seated in the ends of the hanger, are not shown in the drawings. By this construction the hanger is rigidly united to the frame members, and it in turn aids in firmly connecting the members.

In assembling the parts the clip C is first placed in the hanger by inserting it in one end thereof and passing its nipple through the upper opening of the hanger, as shown by dotted lines in Fig. 3. The reach-tubes A A' are then passed through the respective openings of the hanger and through the clip C and telescoped within the hanger, after which the lower end of the upright frame-tube B is passed over the nipple of the clip and through the upper opening of the hanger, the several parts being finally united by brazing. The frame-tubes and the clip are held together for brazing by a single transverse pin *g*, which passes through said parts inside of the hanger, thus avoiding marring of the outer or exposed portions of the tubes. This improved joint is especially adapted for brazing by immersion, and as the several joints are very close together they can be easily heated and brazed more quickly than a con-



struction in which the joints are farther apart and have to be heated separately.

The upper end of the clip-nipple *c* is cut off obliquely, as shown in Fig. 4, to facilitate its insertion in the hanger and avoid forming a rigid annular shoulder or joint in the upright tube *B*. The clip *C*, while forming a union between the upright-tube member *B* and the reach, also serves as a reinforcement for the portion of the reach within the hanger.

In the modified construction shown in Fig. 5 the rear section of the reach is made of heavier tubing than the front section, but of the same external diameter, and the two sections meet within the clip in a butt-joint instead of being telescoped.

Both of the constructions hereinbefore described are designed for a frame of the so-called "three-crown" pattern, or a frame in which the rear fork is connected with the reach by a fork-crown arranged at the rear end of the rear reach-section. If desired, the rear fork may be connected directly to the portion of the reach within the hanger, as shown in Figs. 6, 7, and 8. In this case the rear fork consists of the two tubes  $A^2 A^3$ , which converge toward the hanger and meet within the reach-tube  $A^4$ , the portions of the fork-tubes arranged in the reach being parallel and of D-shaped cross-section, as shown in Figs. 7 and 8. The portions of the fork-tubes outside of the reach are preferably oval or elliptical in cross-section and taper in a transverse direction from the bridge *h* to the rear side of the hanger, where they merge into the D-shaped cross-section above described. From the bridge *h* the fork-tubes diverge rearwardly at a less angle than from the hanger to said bridge. The parallel front portions of the fork-tubes are curved to fit into the reach, as shown in Fig. 6, and their flat sides bear against each other, as shown in Fig. 7. The lower end of the upright tube  $B'$  may be connected with the reach by a clip or union, as in the first-described construction; but in the drawings I have shown a union of a modified form, consisting of a flat upright plate or web *I* of steel. The upper portion of this plate is brazed within the upright tube  $B'$ , and its projecting lower portion is arranged between the opposing flat sides of the rear-fork tubes  $A^2 A^3$  and brazed thereto. The adjacent portions of said tubes are indented or depressed to receive said plate, as shown at *i* in Fig. 8, and the reach is provided in its upper side with a slot for the passage of the plate, as shown in Figs. 6 and 7. The lower end of the upright tube  $B'$  is brazed to the upper side of the reach. The plate or union *I* is further secured to said upright tube by a sheet-metal liner or strip *J* of substantially rectangular form, which extends across the top of said plate and is brought to the inner side of said tube and to the upper side of the reach, as shown in Fig. 7.

The converging portions of the rear fork in front of its bridge and the parallel portions

arranged within the reach-tube  $A^4$  are obviously the equivalent of the rear reach-section  $A'$  of the construction shown in Figs. 1 to 5.

Velocipede-frames constructed according to my invention are lighter than frames in which castings or forgings are employed for connecting the several members, and they are stronger than frames of equal weight provided with such castings or forgings. They can be cheaply stamped in suitable dies and the construction of the hanger or bracket involves but a fraction of the labor required to make a hanger having the usual lugs for connecting it with the frame-tubes, and it is free from flaws and not weakened by shrinkage. Furthermore, my improved frame is a complete structure independent of the hanger and would support its load if the hanger should break or even in the absence of the hanger.

The several parts are brazed together almost entirely inside of the hanger, leaving only the spelter which runs out on the frame-tubes to be cleaned off after brazing. This advantage alone effects an important saving in labor.

My improved construction affords another important advantage over the conventional construction in which the hanger is built into the frame. In the latter construction the frame members are separately brazed to the hanger, and in case any of the joints are defective the frame is liable to break down, or should the hanger break the frame would also be broken. In my construction the frame members are united by meeting surfaces of comparatively large area, which are not weakened by filing after brazing, and the frame is therefore not liable to break down, even if the hanger should break or become loose. Moreover, if any two of the frame members are properly brazed to the hanger they will effectually secure the hanger without the third member, thus leaving a margin of safety to allow for imperfect brazing.

The perforated hanger and the clip *C* are the only parts supplied to the trade by the manufacturer, and it is evident that they can be made at less cost than a hanger having the usual projecting lugs, and as the parts are lighter and can be packed in a smaller space the cost of shipping them is correspondingly less.

I claim as my invention—

1. In a velocipede-frame, the combination with a crank-hanger, of a reach composed of front and rear members connected together within the hanger, and an upright frame member extending through the upper side of the hanger and connected to the reach within the hanger, substantially as set forth.

2. In a velocipede-frame, the combination with a crank-hanger, of a curved reach passing through the central portion of the hanger and having its bend or curved portion located within the hanger, and an upright frame mem-



ber arranged in line with the reach and connected to the curved portion thereof, substantially as set forth.

3. In a velocipede-frame, the combination  
5 with a crank-hanger, of a reach passing through the hanger, an upright frame member extending through the upper side of the hanger, and a union which connects said  
10 frame member with the portion of the reach arranged within the hanger, substantially as set forth.

4. In a velocipede-frame, the combination  
15 with a reach having its front and rear portions connected by a bend or curved portion which is adapted to carry the crank-hanger,  
of an upright frame member extending upwardly from said bend, and a clip embracing  
said bend and having an upwardly-extending

lug to which said upright frame member is secured, substantially as set forth. 20

5. In a velocipede-frame, the combination  
with a crank-hanger provided in its upper, front and rear sides with openings, of an upright frame member, front and rear reach-  
25 sections passing through the front and rear openings of the hanger, and a clip embracing  
said reach members within the hanger and provided with a lug or nipple which passes  
through the upper opening of the hanger and  
30 to which said upright frame member is secured, substantially as set forth.

Witness my hand this 9th day of June, 1900.

EMMIT G. LATTA.

Witnesses:

CHAS. J. RICE,

H. L. BLOSSORE.