

(No Model)

J. GILBERT.
WOODEN BICYCLE FRAME.

No. 583,256.

Patented May 25, 1897.

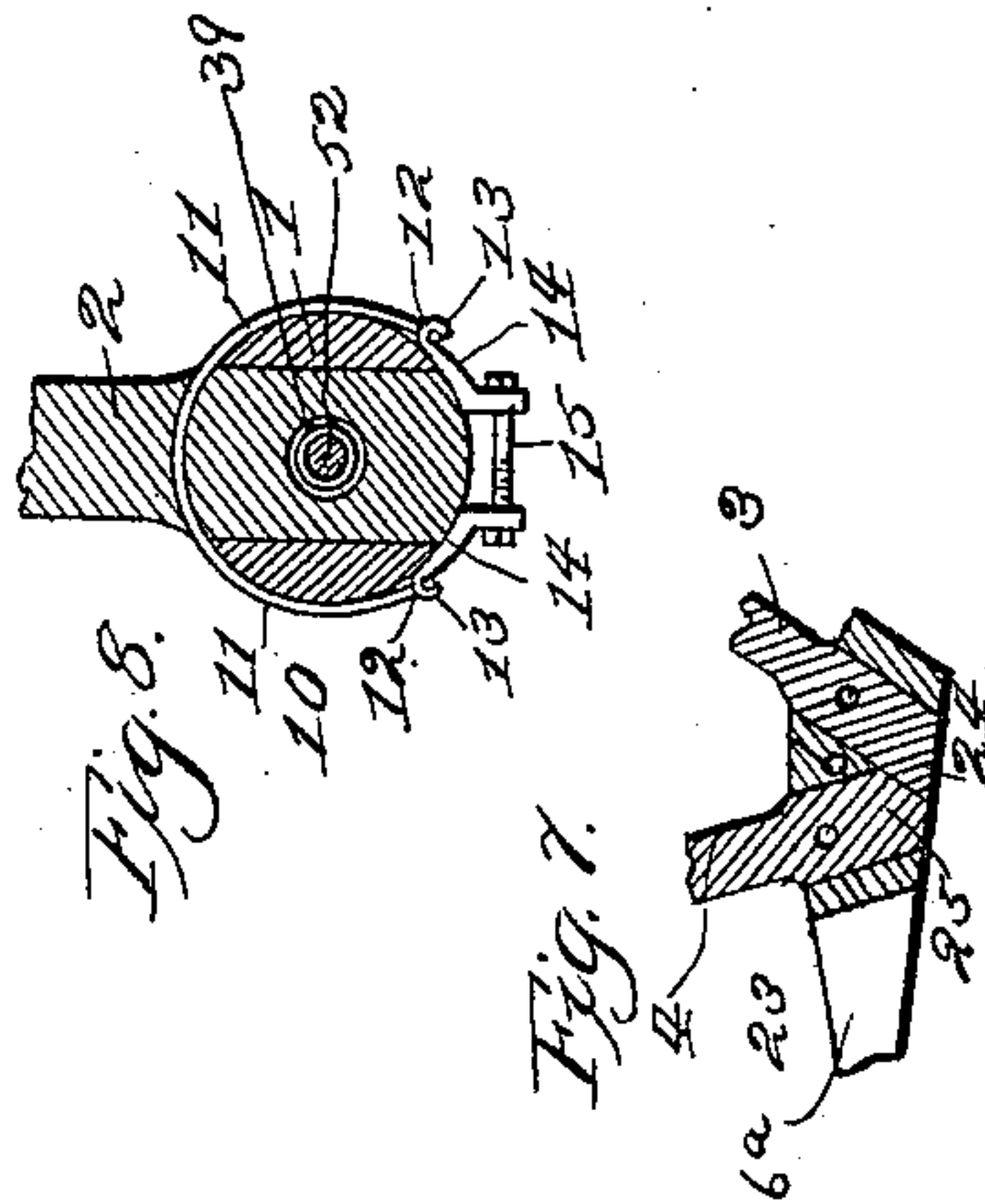
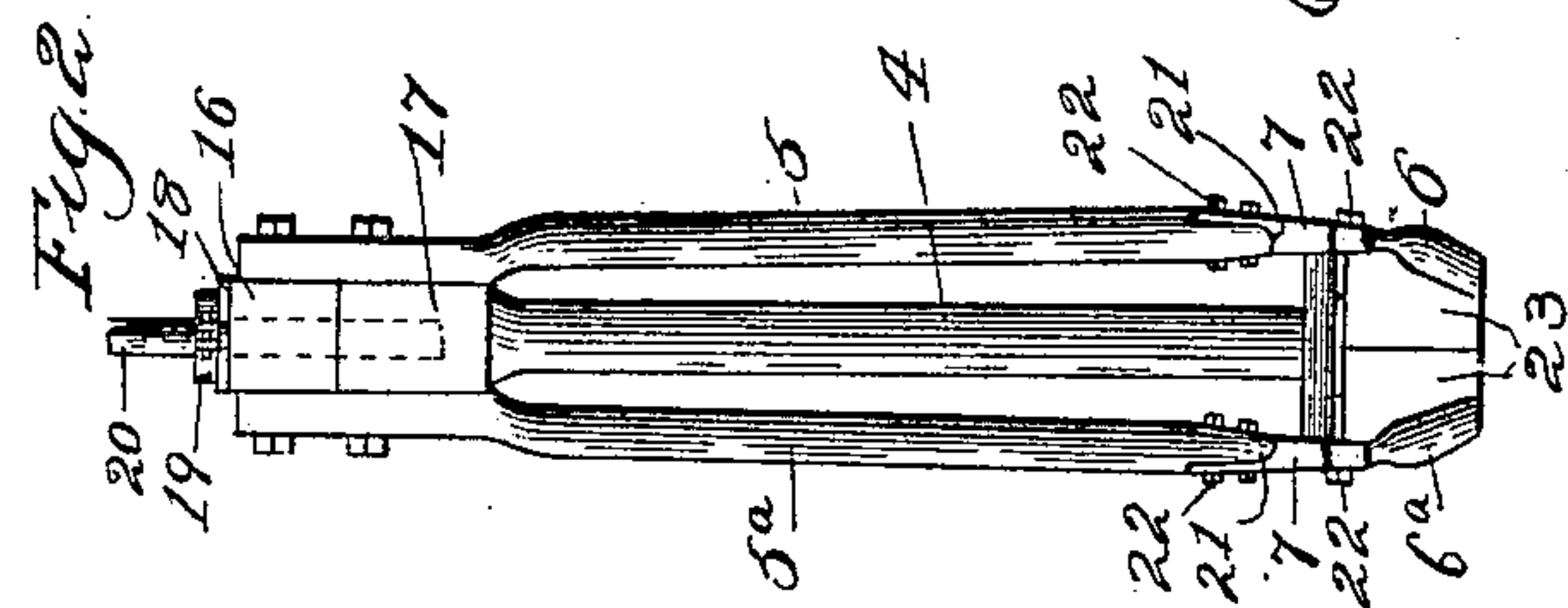
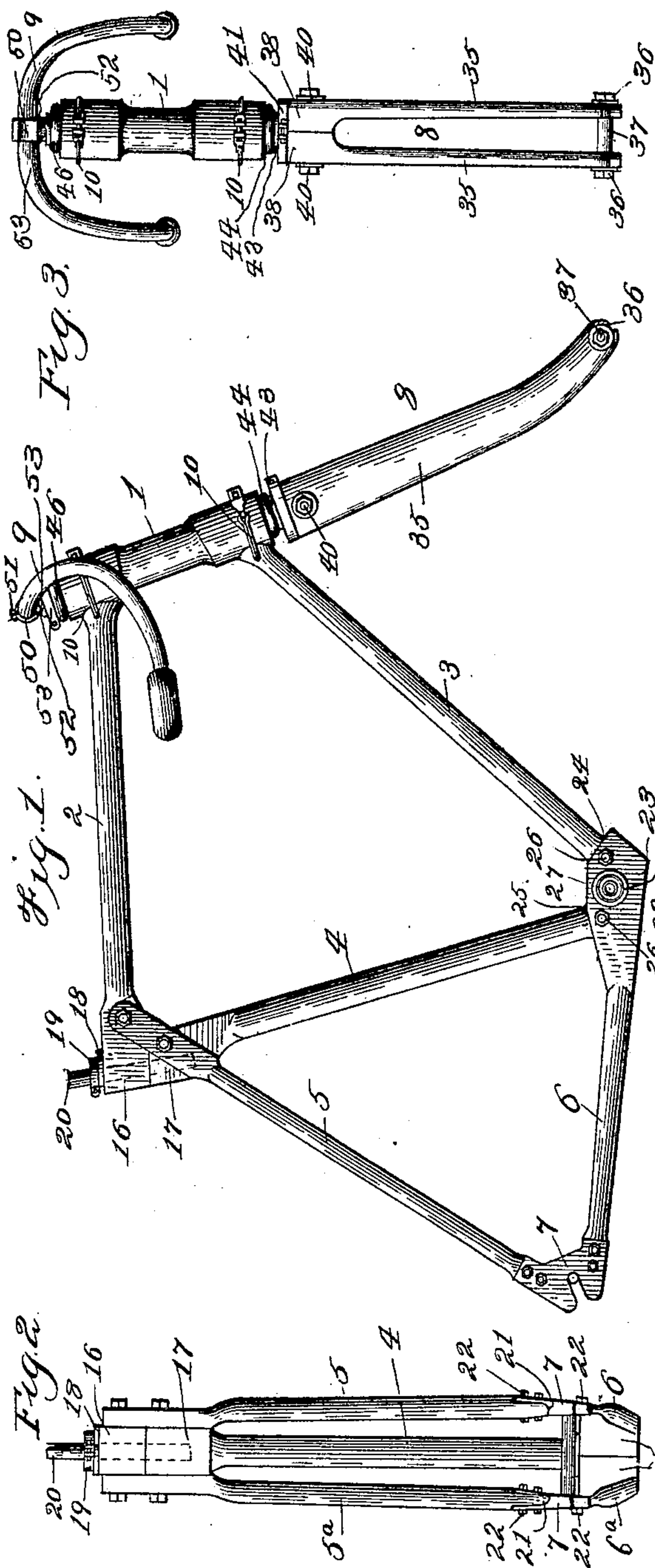


Fig. 8.

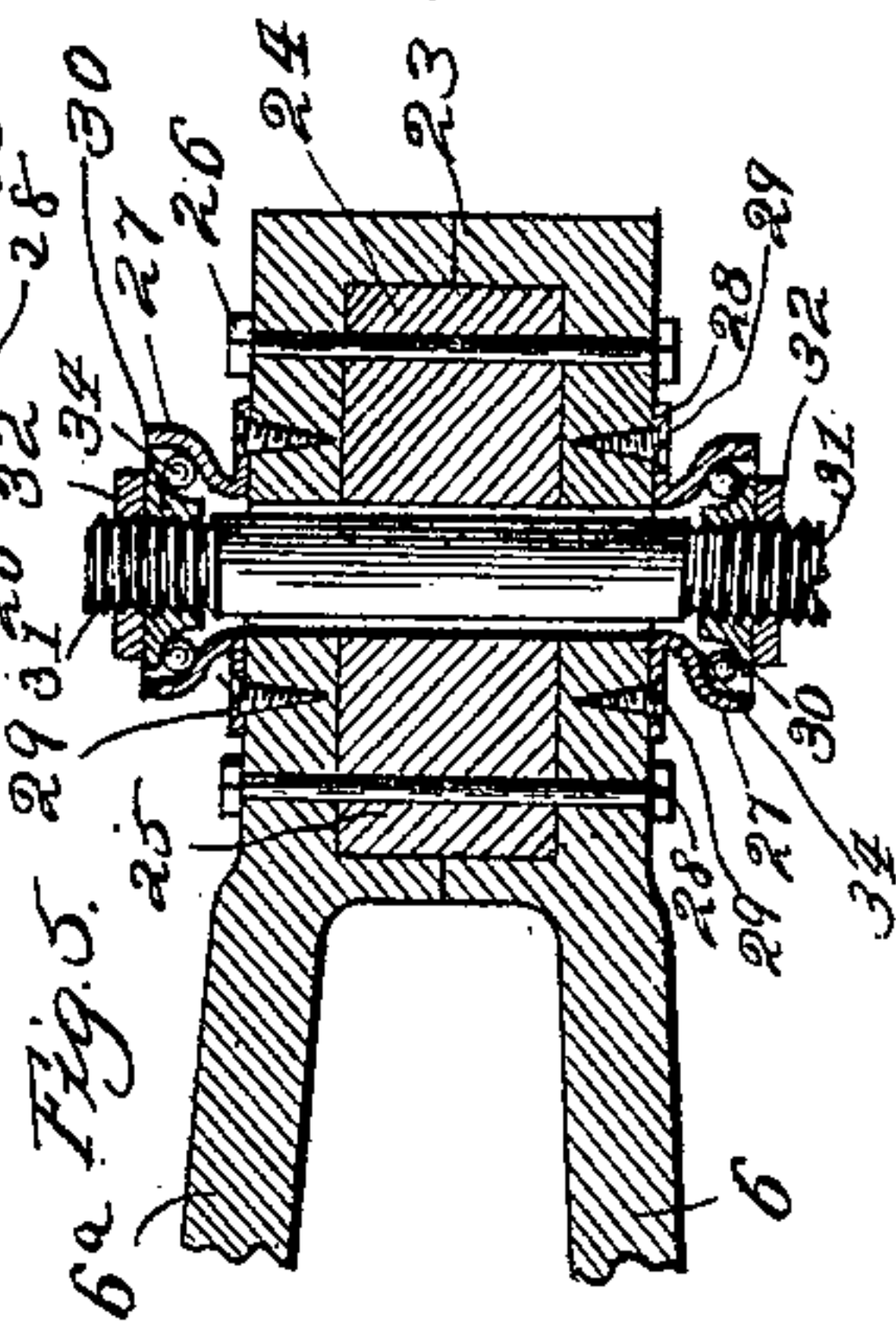
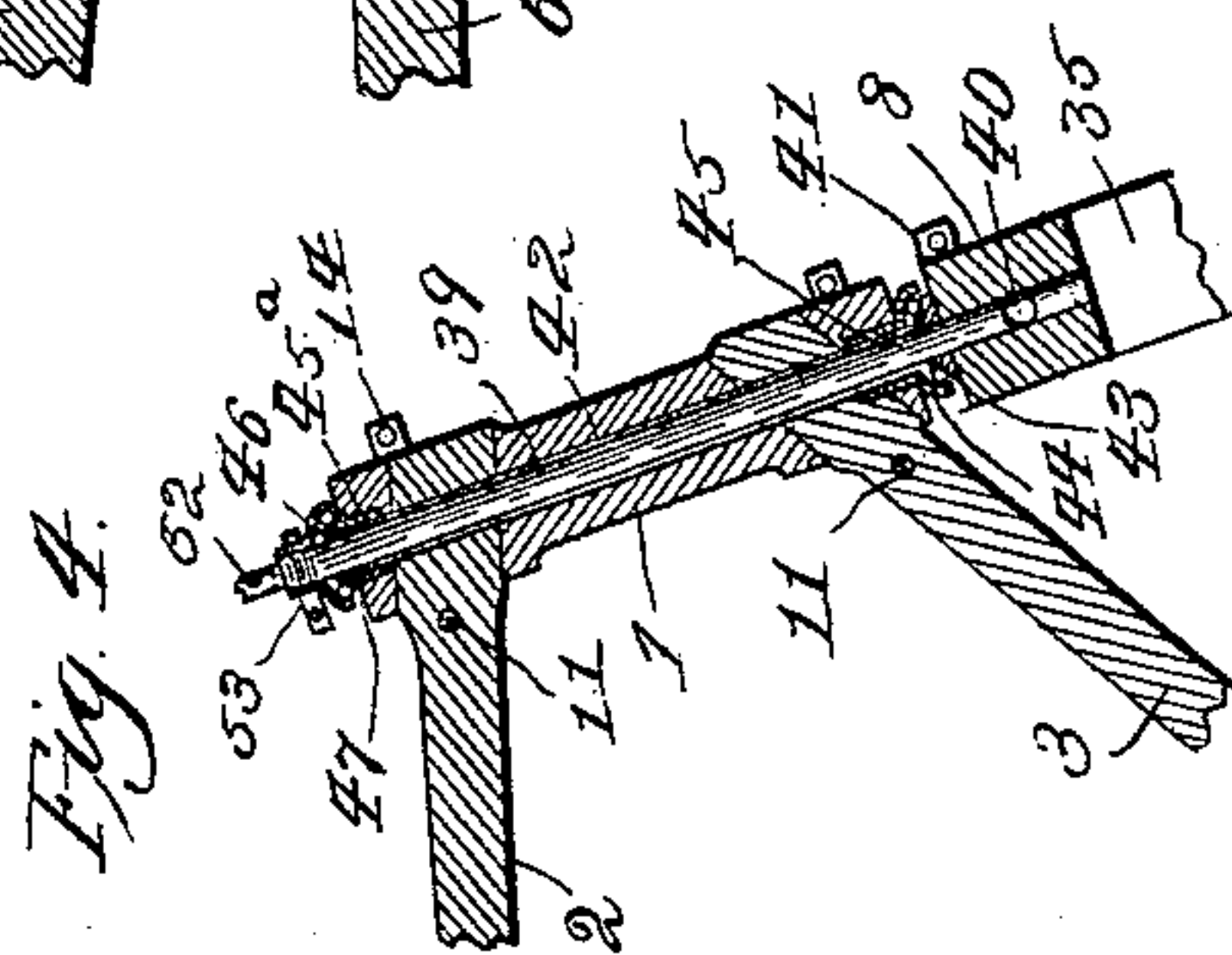
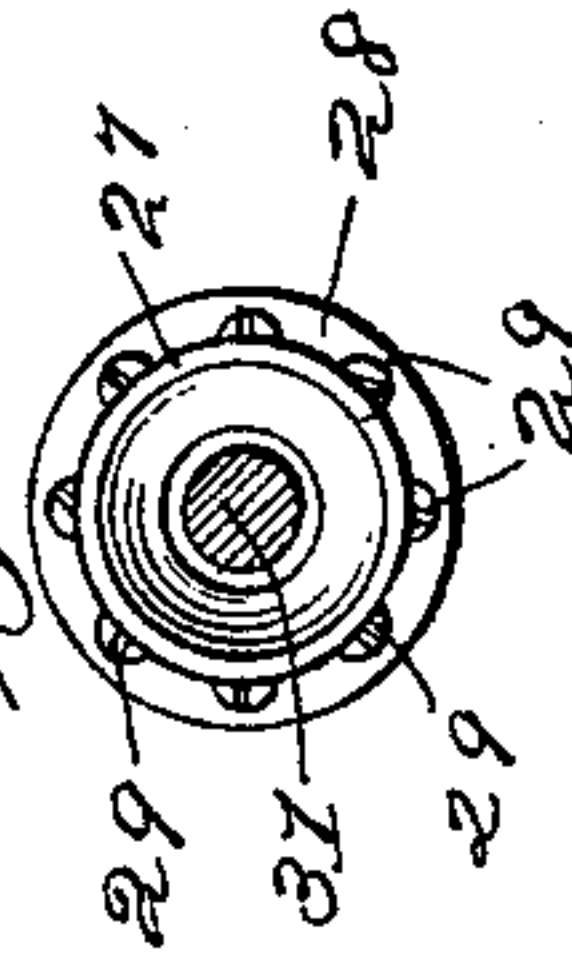


Fig. 6.



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UNITED STATES PATENT OFFICE,

JUSTIN GILBERT, OF VICTORIA, CANADA.

WOODEN BICYCLE-FRAME.

SPECIFICATION forming part of Letters Patent No. 583,256, dated May 25, 1897.

Application filed October 23, 1895. Serial No. 566,642. (No model.)

To all whom it may concern:

Be it known that I, JUSTIN GILBERT, a citizen of the United States, residing at Victoria, British Columbia, Canada, have invented certain new and useful Improvements in Wooden Bicycle-Frames, of which the following is a specification.

My invention relates to bicycle-frames which, with the exception of a few minor parts, such as the bearings and connecting screws or bolts, are made entirely of wood.

The object of my invention is to simulate as nearly as practicable the improved arrangement of bars or members which are employed to make up the frame of the best grades of safety-bicycles, using wood to construct said bars or members in order to cheapen the construction, increase the speed and rigidity, and avoid difficulties which are met with in making such frames of metal of very light weight.

To these ends my invention consists in novel features of construction of the members which go to make up the frame, whereby wood may be employed as the material for the same and whereby parts may be joined together in a durable yet easy manner.

My invention will be understood with reference to the accompanying drawings, in which—

Figure 1 is a side elevation of a bicycle-frame constructed in accordance with my invention. Figs. 2 and 3 are respectively a rear and front elevation of the same. Fig. 4 is an axial section from front to rear of the turning-head in the parts connected therewith. Fig. 5 is a horizontal axial section through the crank-bracket. Fig. 6 is a side elevation of one of the cups of the ball-bearings, which are placed on opposite sides of the opening through said crank-bracket. Fig. 7 is a vertical longitudinal section through the crank-bracket. Fig. 8 is a horizontal section through one of the connections with the turning-head.

The frame comprises a turning-head 1, reach 2, drop-bar 3, perch 4, and rear fork formed of a pair of bars 5 6 and 5^a 6^a on the respective sides, joined at their forward ends to the other bars of the frame and connected together in pairs at their rear ends by the rear-axle mountings 7.

8 represents the wooden front fork, and 9 the handle-bar.

In connecting the reach 2 and the drop-bar 3 to the turning-head 1 the two former parts are tenoned into the latter, as illustrated in Fig. 4, and there secured by any suitable means to prevent the head from splitting, preferably a peculiar form of clamp 10. As illustrated in Fig. 8, the clamp 10 consists of a small wire or rod 11, doubled to form at its ends loops 12, which engage over hooks 13 on the clamp-plates 14, which are arranged to be drawn together by screw-bolt 15. By this means not only are the parts 2 and 3 drawn firmly into the sockets 1 to receive them, but the head is prevented from splitting.

In making a joint between the reach 2 and the perch 4 said parts are provided with enlarged ends 16 17 and the latter is squared to receive the former upon it. The socket for the saddle-post is then bored down transversely through the end 16 longitudinally into end 17 and lined by thimble 18, which carries a clamp 19 for fixing the saddle-post, which is indicated by 20, at any desirable height. The parts 2 and 4 are fixed in their relation by the means of the downwardly-projecting bars 5 5^a of the rear fork, which lap over the joint between said parts, and bolted together by bolts passing through the ends 16 and 17, as shown.

The downwardly-projecting bar 5 and horizontally-projecting bar 6, forming one side of the rear fork, and the corresponding parts 5^a and 6^a, forming the other side of the fork, are connected in pairs at their rear ends, as stated, by bearing-plate 7 for the rear axle, said bearing-plates being formed with steps 21, upon which the parts are secured by bolts 22.

The bars 3 4 and 6 6^a are all united by means of the crank-bracket 23. For convenience this crank-bracket 23, which is a block of wood of requisite dimensions, may have all of the parts mortised into it; but I prefer to form half of it upon each of the bars 6 6^a and mortise the bars 3 4 into it, after which the two halves of the bracket, together with the inserted ends 24 25 of the bars 3 4, are firmly united by bolts 26. The axle-bearing is then bored through and supplied with ball-bearings which consist of cups 27, secured to op-

posite sides of the bracket by flanges 28 and screws 29, and cones 30, screwed upon the axle 31 and held to their adjustment by jam-nuts 32, the balls 34 being inserted in the

5 usual manner.

The fork 8 is formed of two parts 35, adapted at 36 to receive the axle 37 at their lower ends and having enlargements 38 at their upper ends for the purpose of spacing the forks
10 apart and gripping between them the turning-post 39, (see Fig. 4,) said parts being secured together by the bolt 40, as shown. Said parts may be further secured together and prevented from splitting by the clamp-
15 ing-band 41. A socket 42 is bored axially through the turning-head 1 to receive the turning-post 39, and said bore or socket 42 has bore-mountings at its opposite ends, formed by cones 43, surrounding the turning-
20 post 39 at the lower end of the turning-head, with a cap 44, having a sleeve 45, entering an enlargement in the head, and by the cap 46, screwing upon the post 39 at top, and a cone 47, having a sleeve 45^a, entering the head.
25 Adjustment of the upper cap 46 affords adjustment for the bearing of the turning-post within the head.

The handle-bar is attached to the turning-post by means of a clamp 50, having an ad-
30 justing screw-bolt 51 and carrying a handle-post 52, which enters the tubular turning-post 39 and is secured therein by clamp 53.

I do not claim, in a bicycle in which the main portion of the frame is formed of wood,
35 the bars having hub portions made integrally therewith upon their inner ends and which hub portions are secured together to form a hub to receive the driving-shaft, as such is not my invention.

40 Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. A bicycle-frame comprising a steering-head, a drop-bar, a perch, the rear fork hav-
45 ing its lower bars formed with vertically-enlarged forward ends providing a divided crank-bracket lapping the meeting ends of the drop-bar and perch, which are mortised therein, and the crank-axle bearings mounted
50 on the sides of the forward ends of the lower bars; substantially as described.

2. In a bicycle-frame the combination of the steering-head, the reach and drop-bar tenoned into said steering-head, and the binding-
55 clamps surrounding the head and engaging the respective bars as set forth.

3. A bicycle-frame comprising a drop-bar, a perch, a rear fork having lower bars between the forward ends of which the adjacent ends
60 of the drop-bar and perch are mortised, the axle mounted loosely in the adjacent ends of

the drop-bar, perch, and lower bars, the cups having flanges secured to the forward ends of the lower bars around the axle, the cones ad-
65 justable on the axle, the jam-nuts secured to the axle, and the rollers located between the cups and the cones; substantially as described.

4. A bicycle-frame comprising a wooden steering-head, a reach mortised into the steer-
70 ing-head, a drop-bar mortised into the steering-head, the front fork, and the turning-post extending through the steering-head through the ends of the reach and drop-bar which are mortised into same as aforesaid, and secured
75 to the front fork, and means for clamping said wooden steering-head to prevent the same from splitting; substantially as described.

5. A bicycle-frame comprising a wooden steering-head, a reach mortised into the steer-
80 ing-head, metallic binding-clamps placed about the respective ends of the said wooden steering-head a drop-bar mortised into the steering-head, the front fork, the lower cone supported on the fork, the lower cup having
85 a sleeve fitting in the lower end of the steering-head, the upper cone having a sleeve fitting in the upper end of the steering-head, and the turning-post carrying an upper cup and extending through the cones through the
90 steering-head, through the outer ends of the reach and drop-bar and secured to the front fork; substantially as described.

6. In a wooden bicycle-frame the combina-
95 tion of a metallic turning-post and a wooden fork formed of two members adapted at their lower ends to receive the axle of the front wheel, and enlarged at their upper ends for the purpose of spacing them apart and receiv-
100 ing the turning-post, and bolted together at their enlarged ends upon said turning-post, as explained.

7. In a wooden bicycle-frame the combina-
105 tion of a metallic turning-post and a wooden fork formed of two members adapted at their lower ends to receive the axle of the front wheel, and enlarged at their upper ends for the purpose of spacing them apart and receiv-
110 ing the turning-post, and having a securing-band for holding them together, as set forth.

8. In combination with the wooden steer-
ing-head the reach and drop-bar tenons there-
in and the clamps passed through the ends of the said bars in rear of the steering-head, sur-
rounding the said steering-head, and having
115 screw adjustment for drawing said clamps together as shown.

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Witnesses:

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