

No. 625,749.

Patented May 30, 1899.

G. ELLSTROM.  
BICYCLE.

(Application filed Dec. 30, 1896.)

(No Model.)

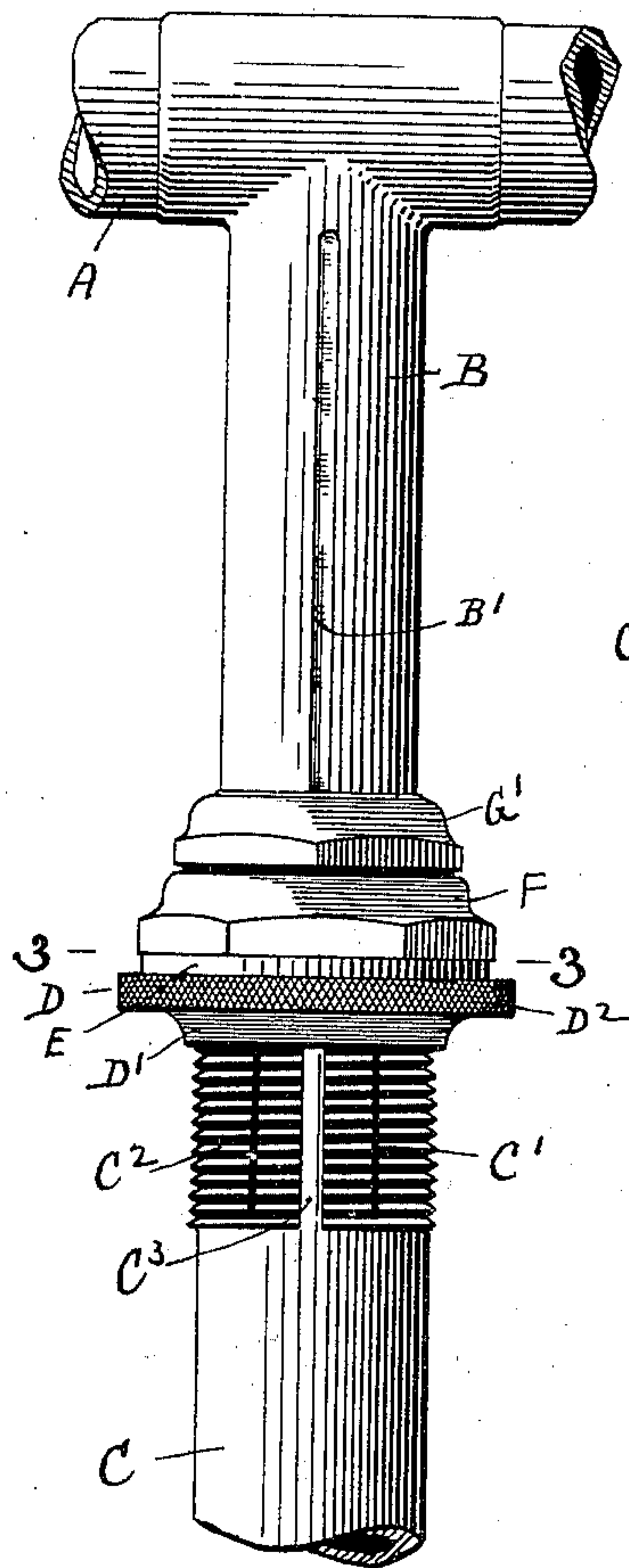


Fig. 1.

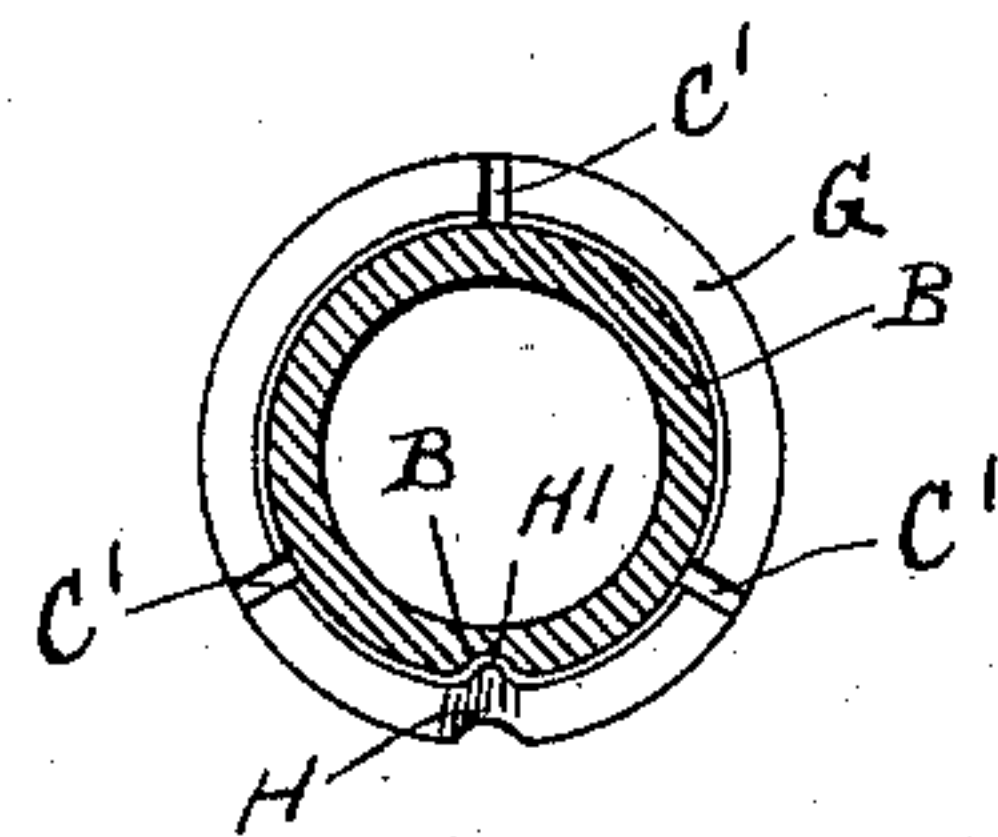


Fig. 4.

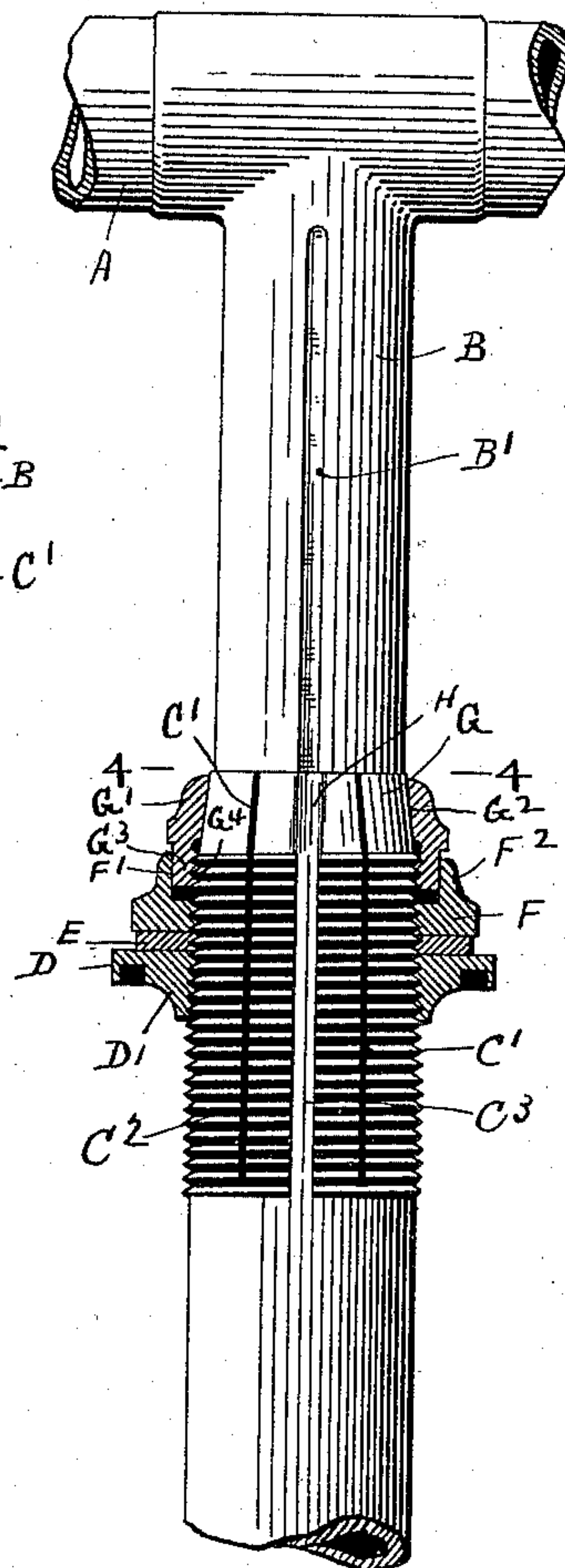


Fig. 2.

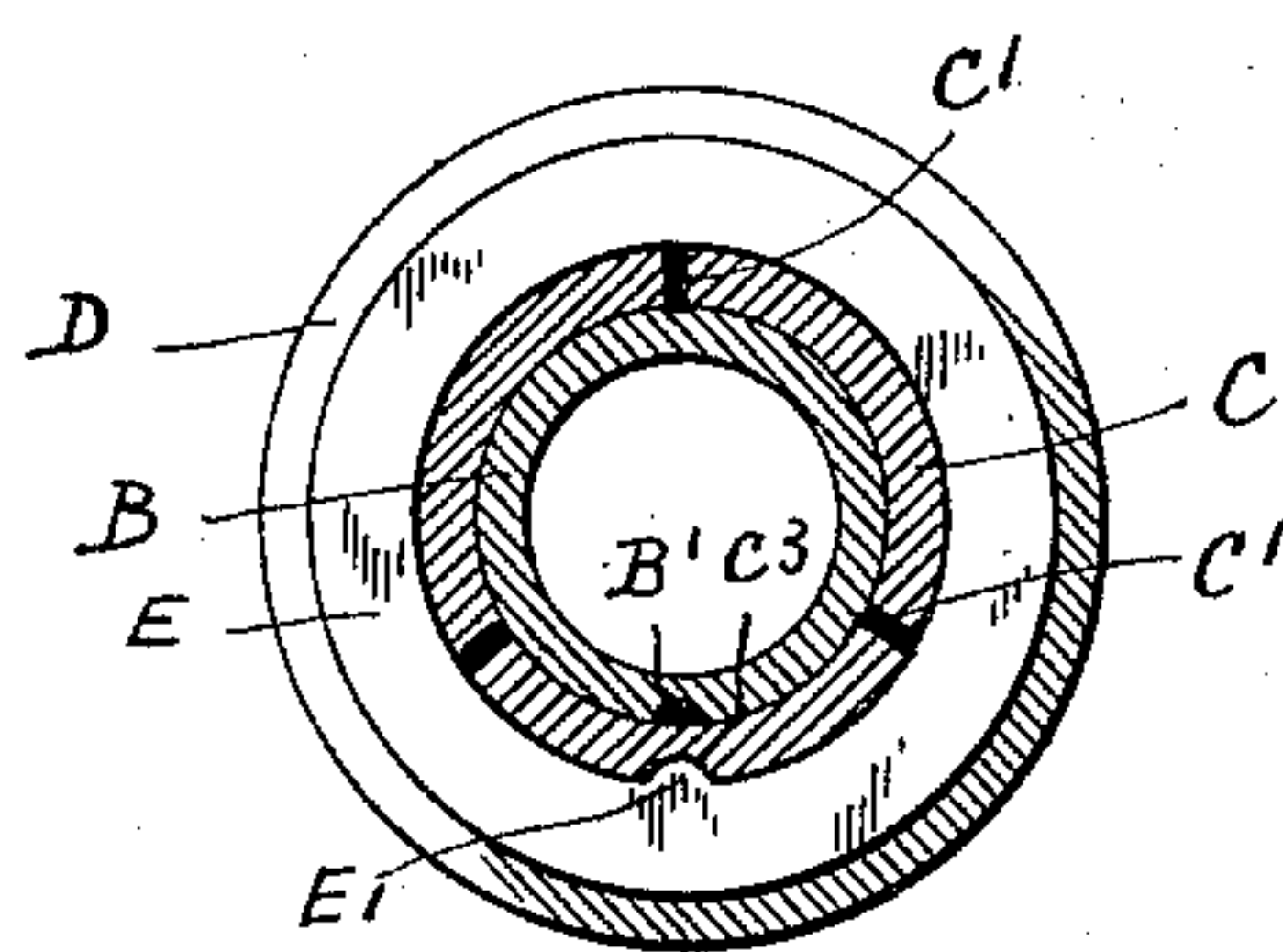


Fig. 3.

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# UNITED STATES PATENT OFFICE.

GUSTAF ELLSTROM, OF FITCHBURG, MASSACHUSETTS, ASSIGNOR TO MARY ELIZABETH JOHNSON, OF SAME PLACE.

## BICYCLE.

SPECIFICATION forming part of Letters Patent No. 625,749, dated May 30, 1899.

Application filed December 30, 1896. Serial No. 617,531. (No model.)

*To all whom it may concern:*

Be it known that I, GUSTAF ELLSTROM, a citizen of the United States, residing at Fitchburg, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Bicycles, of which the following is a specification, reference being had to the accompanying drawings, forming a part of the same, and in which—

Figure 1 represents a front elevation of a portion of the steering-post of a bicycle, showing the inner rotating tube with the handle-bar stem held therein. Fig. 2 represents the same view as Fig. 1, but with the clamping-nuts held upon the screw-threaded end of the tube shown in central vertical sectional view. Fig. 3 is a horizontal sectional view on line 3 3, Fig. 2.

Similar letters refer to similar parts in the different figures.

My invention relates to the steering-head of a bicycle, and particularly to the device for holding the handle-bar stem in the fork-tube of the steering-head; and it consists in the construction and arrangement of parts, as hereinafter described, and set forth in the annexed claim.

Referring to the drawings, A denotes a portion of the handle-bar, and B the handle-bar stem, which is inserted in the upper end of the tube C.

C denotes a portion of the fork-tube which is split at its upper end at C' into two or more sections (three being shown in the drawings) in order to render the end of the tube C elastic and compressible. The upper end of the tube C is also provided with a screw-thread C<sup>2</sup>, and on one side of the screw-threaded section is a shallow groove C<sup>3</sup>, parallel with the axis of the tube.

D denotes a nut carried upon the tube C and provided on its under side with the concave surface D', adapted to bear against the balls of the upper ball-bearing of the steering-head in the usual manner. The nut D is provided with a milled edge D<sup>2</sup> in order to allow the nut to be turned on the tube C in order to adjust the ball-bearing in the steering-head in the usual and well-known manner, this construction being now in common use.

E denotes a washer resting upon the up-

per surface of the adjusting-nut D and having a spur E' entering the groove C<sup>3</sup>, as shown in Fig. 3, in order to hold the washer from turning on the tube. Bearing upon the upper surface of the washer E is a check-nut F, having its upper surface recessed or cup-shaped, as at F'. The extreme upper end of the tube C is tapered or beveled, as at G, Fig. 2, and surrounding the beveled surface G is a collar G', having an interior beveled surface G<sup>2</sup> bearing upon the beveled surface G.

The lower side of the collar G' is provided with a flange G<sup>3</sup>, which enters the cup-shaped recess F' in the check-nut F and is provided with an interior screw-thread G<sup>4</sup>, which engages the screw-thread C<sup>2</sup> on the tube C. The check-nut F and the collar G' are provided with polygonal peripheries to receive a wrench. The handle-bar stem B is provided with a shallow groove B', and the beveled end of the tube C is curved inwardly, as at H, in alignment with the groove C<sup>3</sup>, so as to form a short interior rib H', which enters the groove B' in the handle-bar stem in order to hold the stem from rotating in the tube C and maintain the handle-bar at right angles with the line of the bicycle-frame.

When the stem B is inserted in the tube C, the collar G' is screwed down upon the tube C, drawing its beveled surface G<sup>2</sup> over the beveled surface G of the tube C, thereby compressing the end of the tube against the handle-bar stem and holding it from longitudinal movement within the tube C. The flange G<sup>3</sup> enters within the recess F' of the check-nut F far enough to break joints, but leaving a sufficient space, as at F<sup>2</sup>, between the edge of the flange and the bottom of the recess to allow the check-nut F to be raised and release the adjusting-nut D.

The groove C<sup>3</sup> is milled from the lower end of the screw-thread C<sup>2</sup> through the screw-thread to the lower edge of the beveled surface G, and the groove is continued through the beveled surface G by bending the tube inwardly to form an interior rib H. The thinness of the tube C, caused by beveling its outer surface, renders it practicable to properly shape the rib H to accurately fit the groove B'.

I am aware that it is not new to hold the



handle-bar stem from longitudinal movement by compressing the beveled end of the fork-tube by an interiorly-beveled nut or to hold the stem from rotating in the fork-tube. By  
5 my construction I place the ball-bearing adjusting-nut, the check-nut by which it is held from rotating, and the beveled tightening-nut one above the other on the screw-threaded tube and in close proximity, making the in-  
10 termediate check-nut cup-shaped and providing the tightening-nut with a flange which enters the recess in the check-nut and covers an intervening space between the tightening  
15 and check nuts, so that the check-nut is capable of moving on the fork-tube to allow the ball-bearing nut D to be adjusted. I thereby bring all the nuts into a compact space

and secure the appearance of a single integral nut.

What I claim as my invention, and desire 20 to secure by Letters Patent, is—

The combination with the split and screw-threaded fork-tube of a bicycle, of a tightening-nut by which the fork-tube is compressed, a ball-bearing adjusting-nut, and an inter- 25 mediate check-nut, said check-nut having a recess to receive said tightening-nut, substantially as described.

Dated this 17th day of December, 1896.

GUSTAF ELLSTROM.

Witnesses:

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JOHN LINDHOLM.