

No. 610,157.

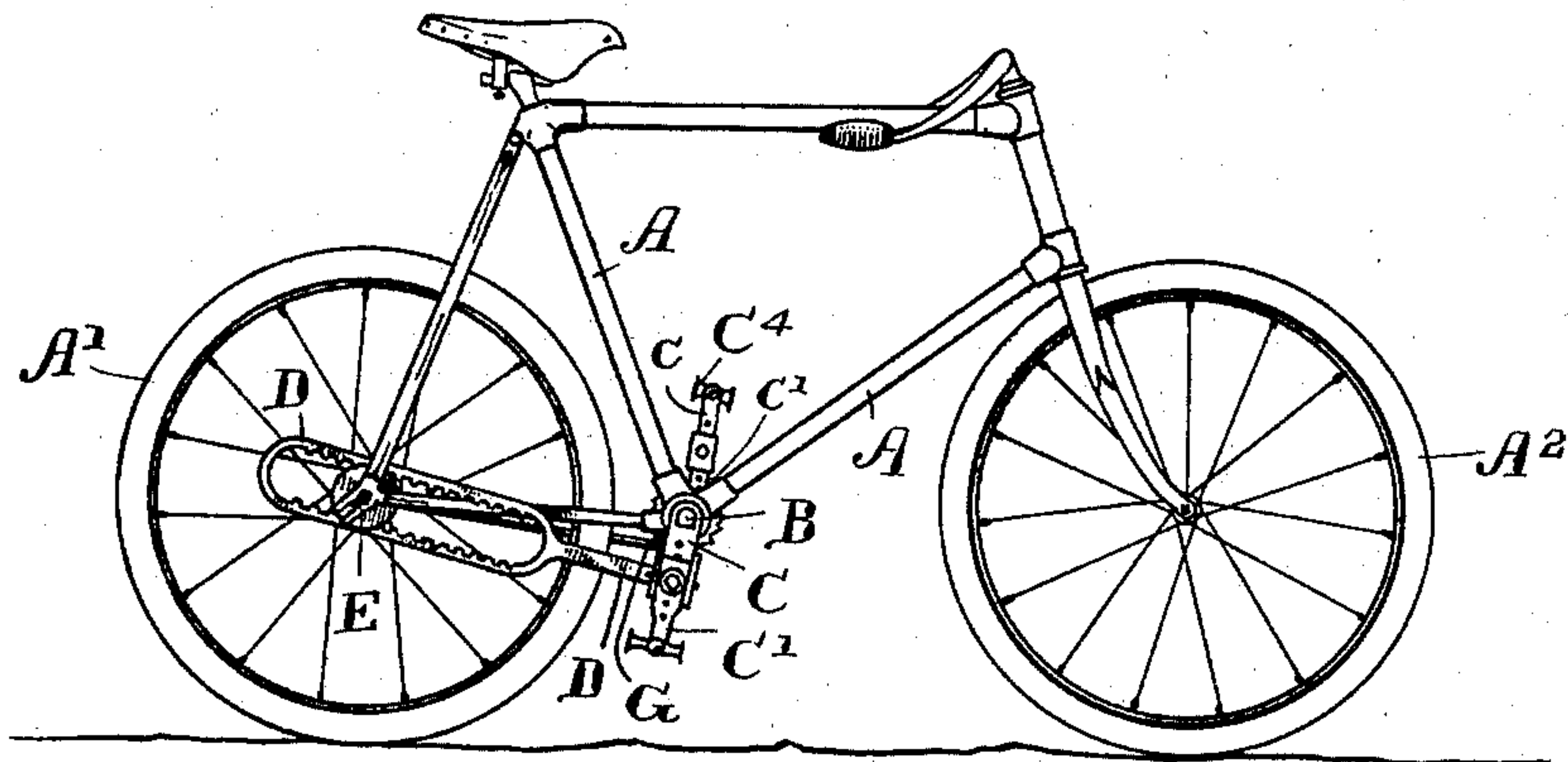
Patented Aug. 30, 1898.

M. T. CAMPBELL.  
BICYCLE.

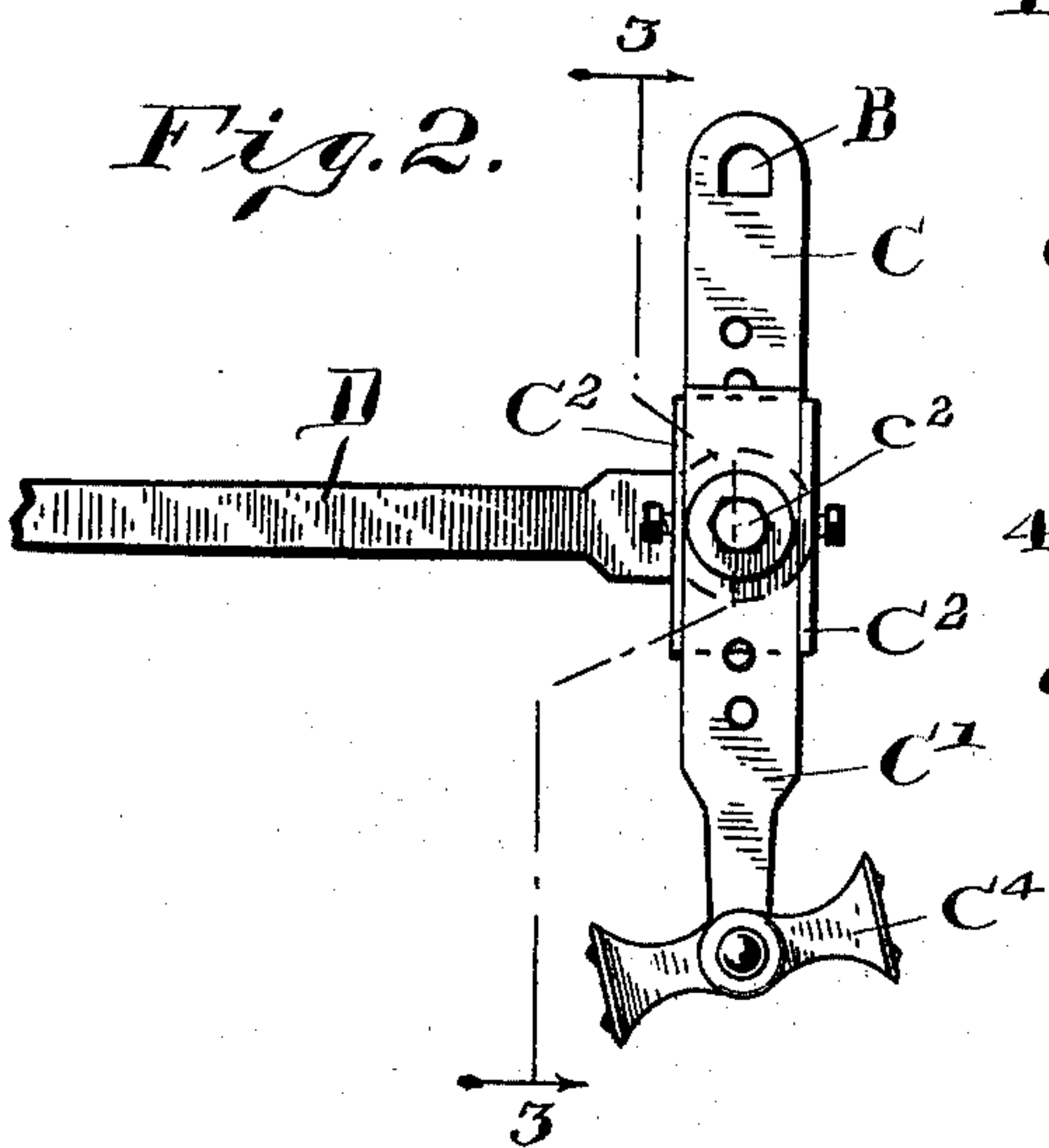
(Application filed Dec. 21, 1896.)

(No Model.)

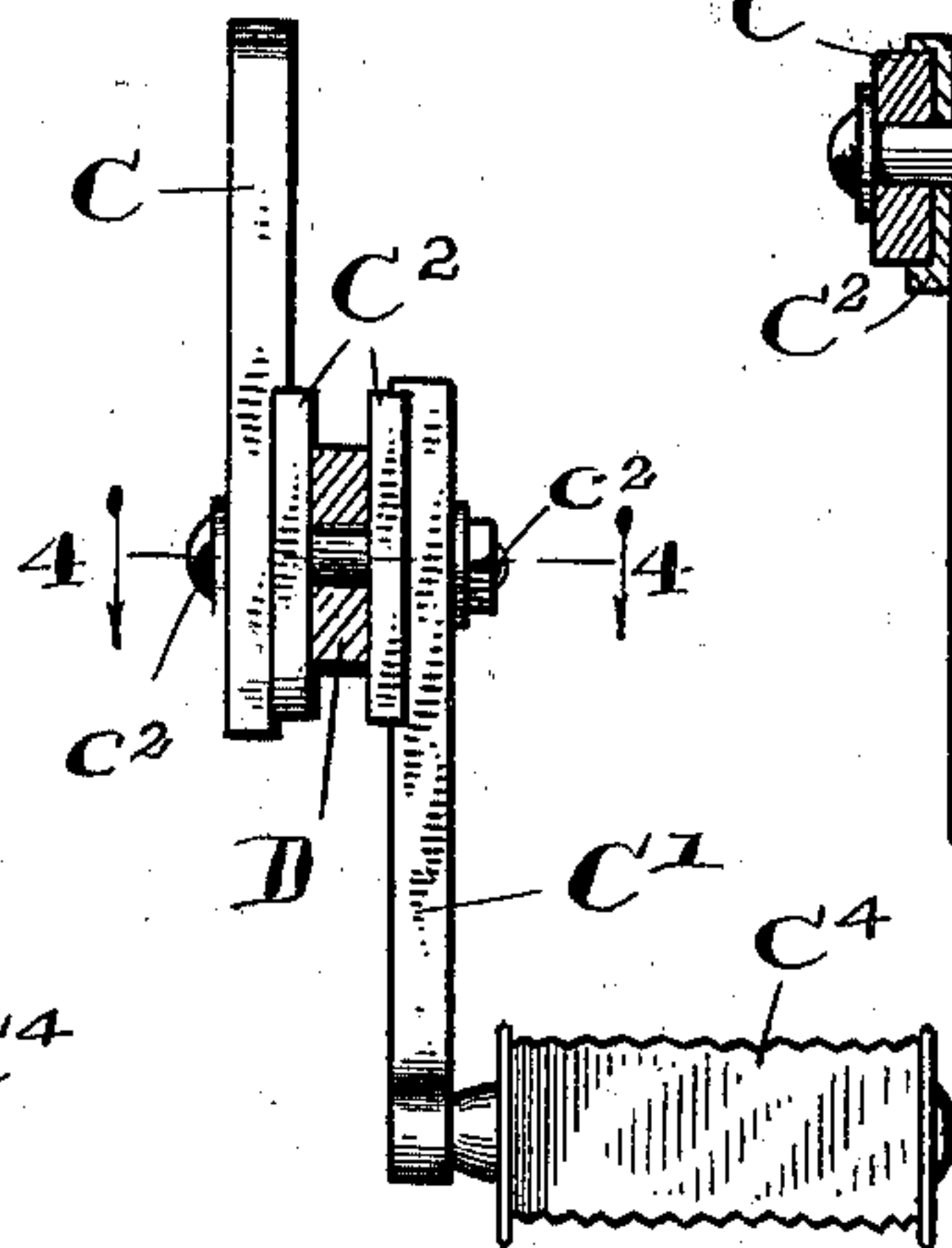
*Fig. 1.*



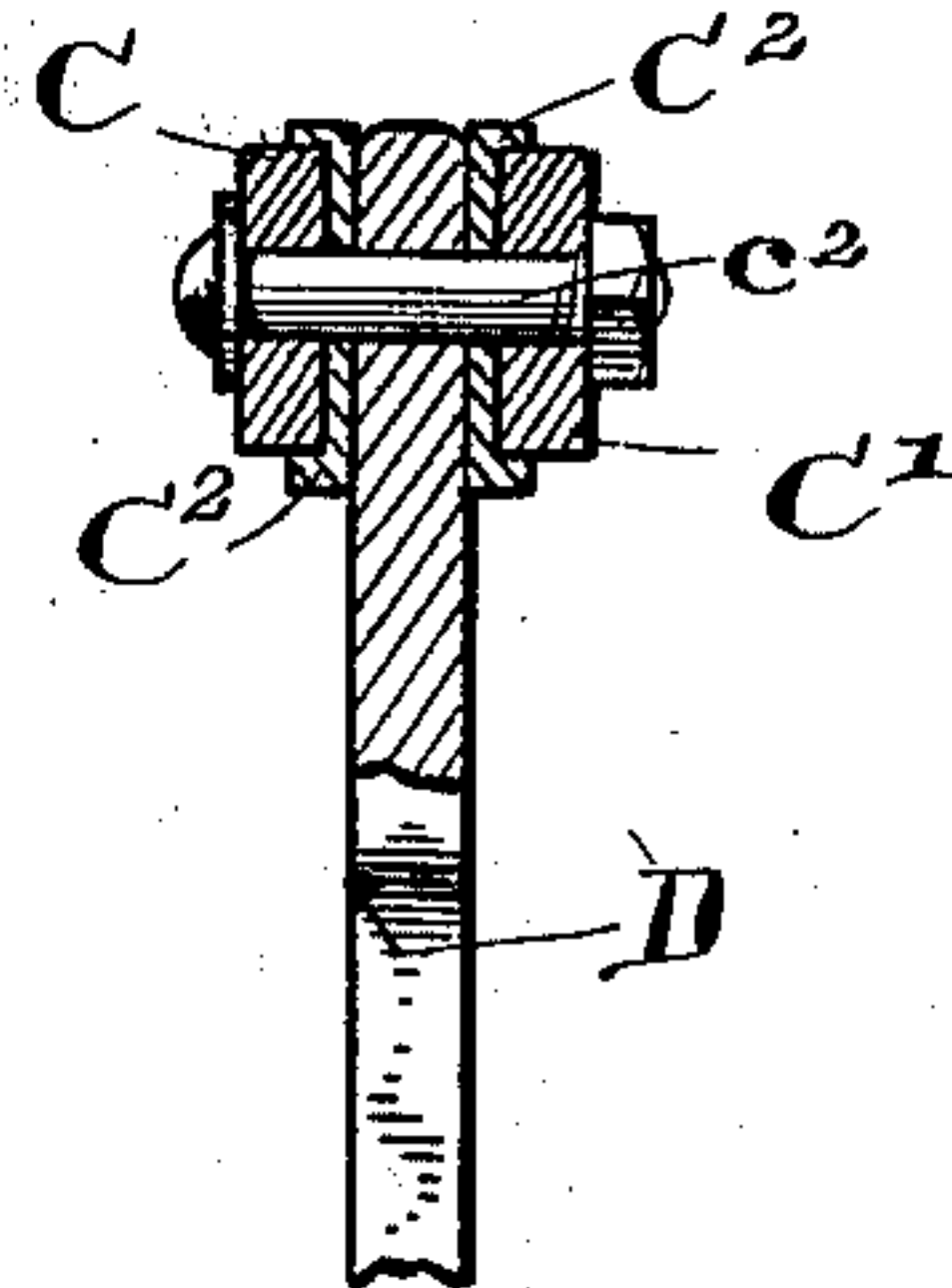
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

MILTON T. CAMPBELL, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF ONE-HALF TO WILLIAM H. THOMAS, OF SAME PLACE.

## BICYCLE.

SPECIFICATION forming part of Letters Patent No. 610,157, dated August 30, 1898.

Application filed December 21, 1896. Serial No. 616,398. (No model.)

*To all whom it may concern:*

Be it known that I, MILTON T. CAMPBELL, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Bicycles, of which the following is a specification.

My present invention relates to bicycles and such like vehicles and pertains to the means of driving and controlling the driven wheel. Said invention will be first fully described, and the novel features thereof then pointed out in the claims.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a side elevation of a bicycle provided with my present invention; Fig. 2, an enlarged elevation of a portion of the pitman and the crank-arm to which it is connected; Fig. 3, a view as seen from the dotted line 3 3 in Fig. 2, and Fig. 4 a detail sectional view on the dotted line 4 4 in Fig. 3.

In said drawings the portions marked A represent the frame of the bicycle; B, the crank-shaft; C C', the two parts of the crank-arms; D, the pitman, and E the hub of the driven wheel.

The frame A, the wheels A' and A<sup>2</sup>, and the crank-shaft B are in most particulars of any ordinary or desired construction.

The crank-arms are, however, each composed of two parts C and C', which are adjustable upon each other, so that the length of the stroke may be varied as desired. As shown in Figs. 2, 3, and 4, that crank-arm to which the pitman D is connected is not only composed of two parts, but these are united by an intervening structure C<sup>2</sup>, to which the forward end of the pitman D is connected. The sides of said structure fit against the crank-arm parts and are secured thereon at any point desired by a bolt c<sup>2</sup>. As will be readily understood, the adjustment may be on either or both the parts of the crank-arm, as each part is provided with several bolt-holes, and thus in making such adjustment

the relative positions of the pitman and the crank-shaft may be either varied or maintained. Each crank-arm has a pedal C<sup>1</sup> upon the outer end, as is usual.

The pitman D, I prefer to make, as shown, a combined double rack-bar and pitman. The double internally-toothed rack-bar end engages with gear-rings (not shown) which are suitably mounted upon one end of the hub E, and the other end of said pitman is, as before stated, connected by means of the structure C<sup>2</sup> and bolt c<sup>2</sup> to the crank-arm.

The hub E bears suitable gears, with which the pitman engages, upon one end. (Not shown.)

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a bicycle, of the driven wheel, a pitman connected to the hub of said driven wheel and running thence to an arm on the crank-shaft, said crank-shaft, and said arm, said pitman and said arm being adjustably connected together at a point intermediate the pedals and crank-shaft, whereby the stroke may be lengthened or shortened while the relative positions of the pitman and the crank-shaft may be either maintained or varied, substantially as and for the purposes set forth.

2. The combination, in a gearing, of the wheel, the pitman, and the crank-arm to which said pitman is connected, said crank-arm being formed in two parts and united by a cross-head adjustably secured on said parts, said pitman being immediately connected to the transverse member or wrist-pin of said cross-head, substantially as shown and described.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 16th day of December, A. D. 1896.

MILTON T. CAMPBELL. [L. S.]

Witnesses:

JACOB D. A. HASS,  
JAMES A. WALSH.