

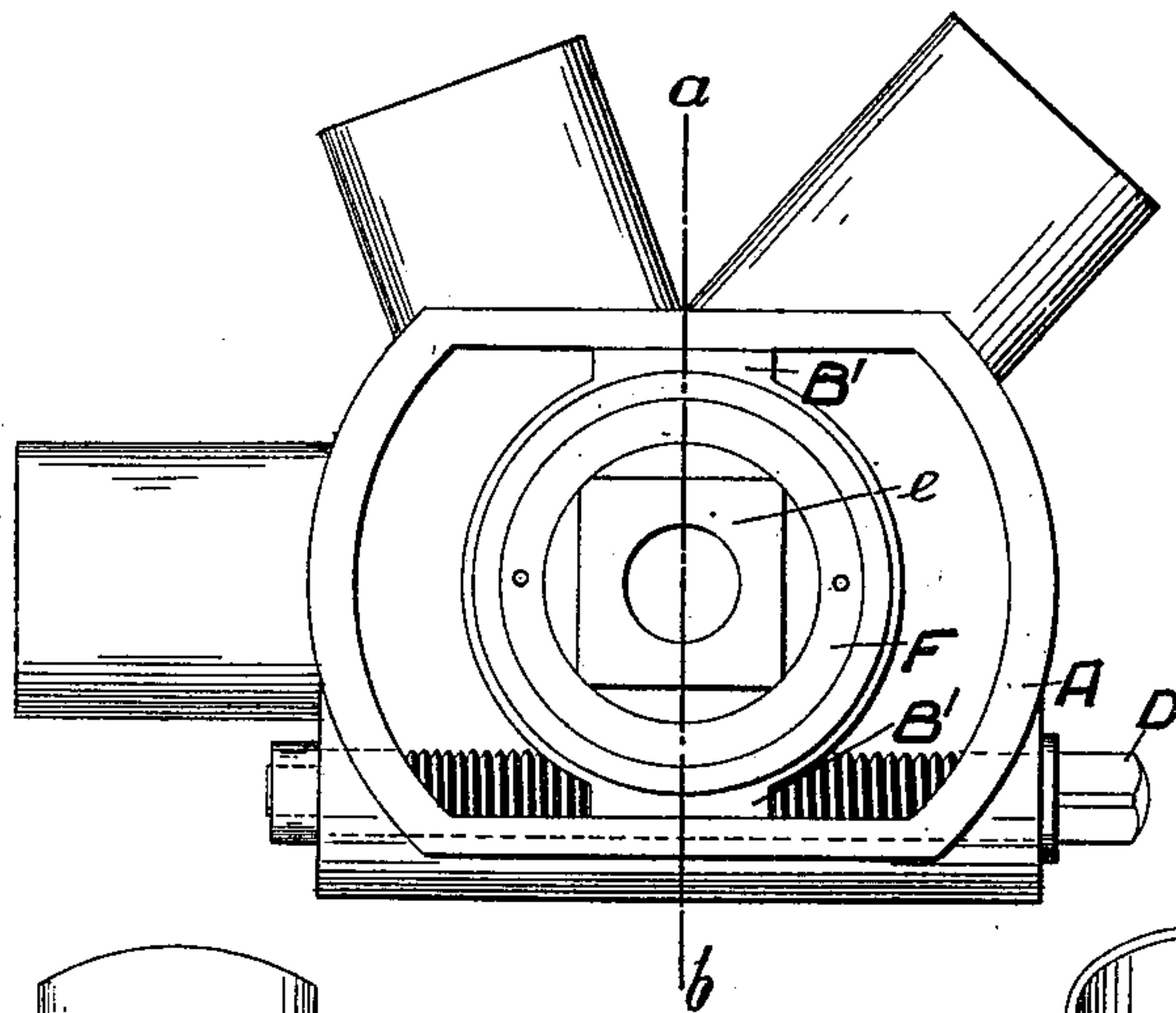
No. 641,667.

Patented Jan. 23, 1900.

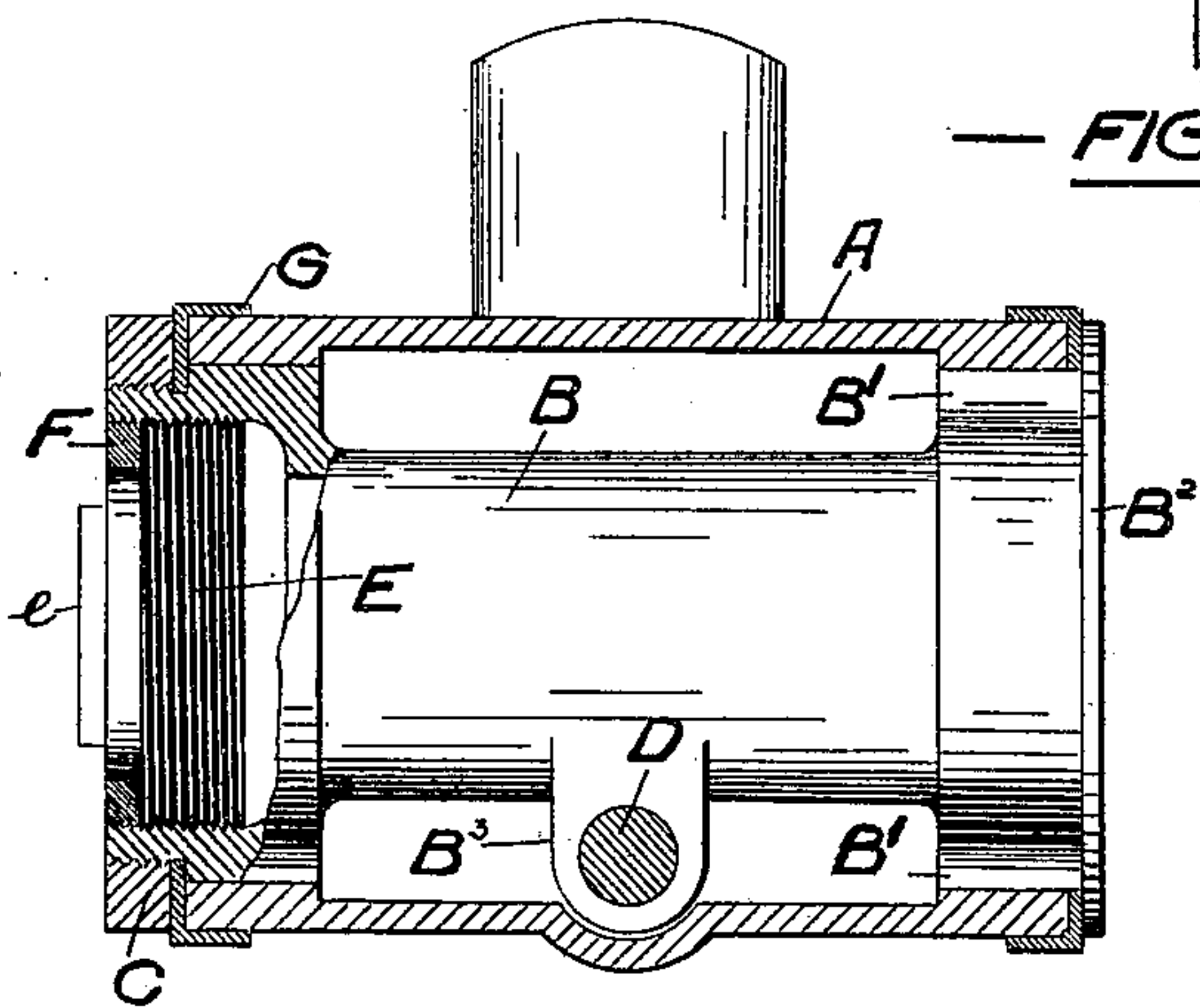
H. BEESTON.  
CRANK HANGER BEARING.

(Application filed July 18, 1899.)

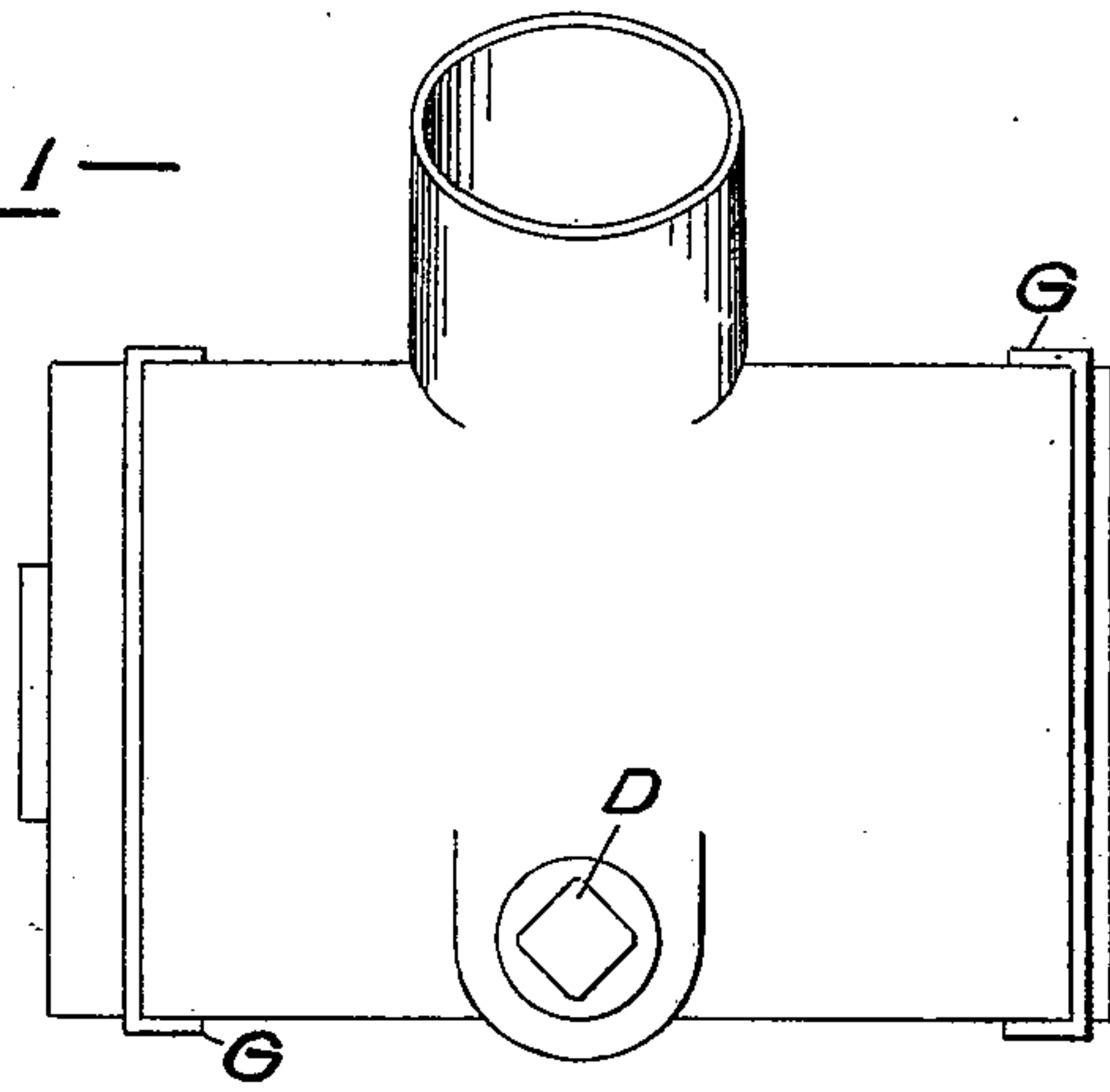
(No Model.)



— FIG. 1 —

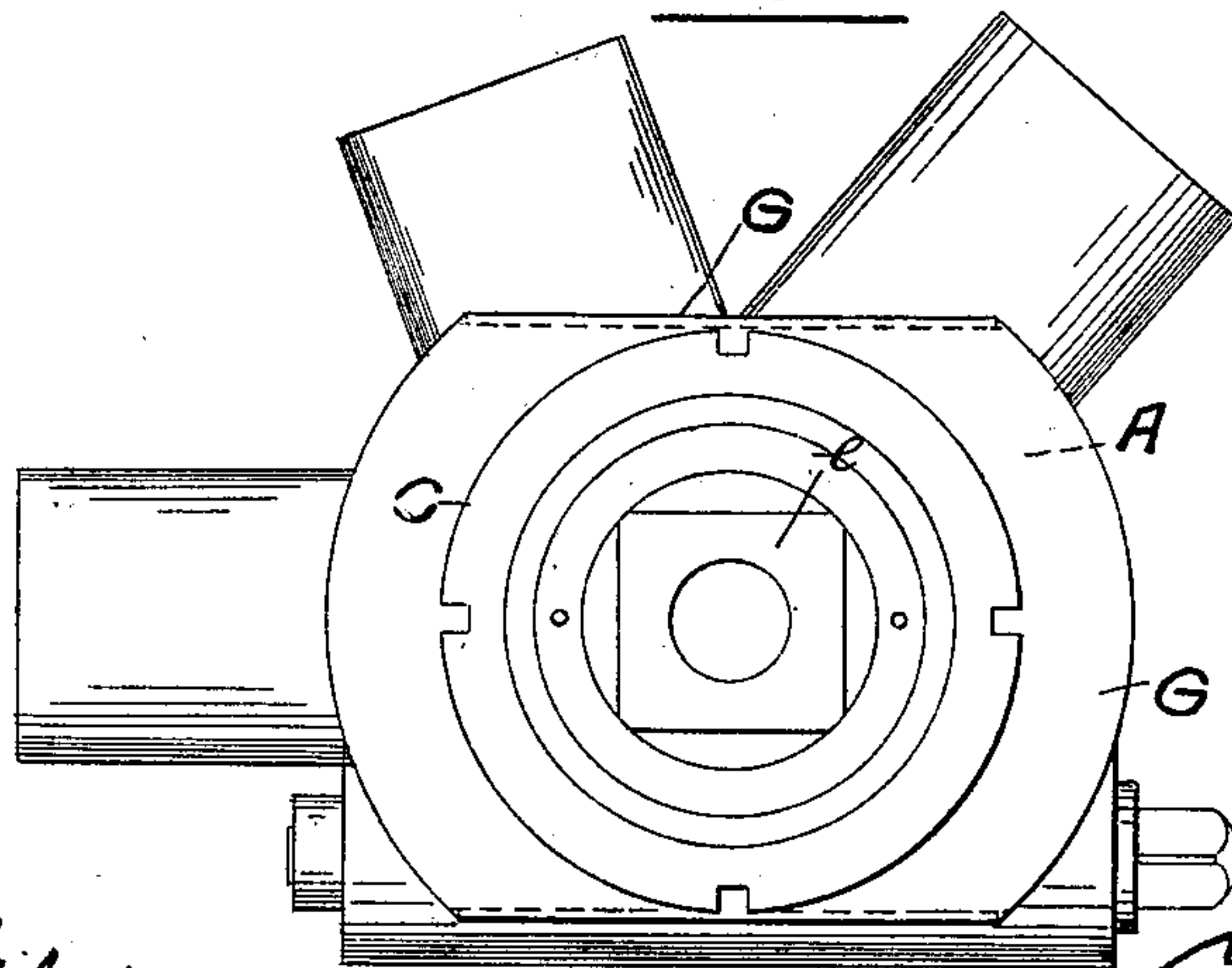


— FIG. 3 —



— FIG. 2 —

— FIG. 4 —



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# UNITED STATES PATENT OFFICE.

HERBERT BEESTON, OF WOLVERHAMPTON, ENGLAND.

## CRANK-HANGER BEARING.

SPECIFICATION forming part of Letters Patent No. 641,667, dated January 23, 1900.

Application filed July 18, 1899. Serial No. 724,254. (No model.)

*To all whom it may concern:*

Be it known that I, HERBERT BEESTON, a subject of the Queen of Great Britain and Ireland, and a resident of 44 Merridale road, Wolverhampton, in the county of Stafford, England, have invented certain new and useful Improvements in Crank-Hanger Bearings, (for which I have filed an application for patent in Great Britain, No. 280, bearing date January 5, 1899,) of which the following is a specification.

This invention consists of improvements relating to chain-driven cycles, motor-cars, and like vehicles, whereby I am enabled to provide simple and convenient means for effecting a parallel adjustment of the driving-chain and to so carry the crank-spindle, with its ball-bearings and locking devices, in a detachable shell or casing as to permit of ready adjustment and detachment without disturbing the adjustment of the bearings.

In the accompanying sheet of explanatory drawings, to be hereinafter referred to, Figure 1 is a side elevation with the outer cover-plate removed, of the bottom bracket of a cycle as constructed and arranged in accordance with my invention. Fig. 2 is an external end elevation; and Fig. 3, a sectional end elevation through the line *a b*, Fig. 1. Fig. 4 is a side elevation of the bracket with the outer cover-plate in position.

The same reference-letters in the different views indicate the same parts.

In the application of my invention I dispense with the ordinary back-fork ends of the cycle or like frame and mount the rear-wheel axle in castings or frame ends having plain circular apertures formed through them. The bottom bracket or crank-axle-supporting bracket of the cycle-frame I make of the form shown in the illustrations, its main or central portion A having an aperture of an elongated or oval form, as shown, of sufficient dimensions to receive the crank-axle casing and to give space for an endwise-sliding movement of the same. The said casing consists of a tubular body B, having enlarged ends to receive the ball-bearings, and with projections, as B', from such ends, which are made a sliding fit within the bottom bracket. The casing extends right through the bracket and can be secured at any desired position within

the range of its sliding movement by a lock-nut C, screwed onto a projecting end, the opposite end being provided with a fixed head or flange B<sup>2</sup>.

To adjust the tension of the driving-chain, the lock-nut C of the axle-casing is slackened, and on then operating a screw D, which engages with a tapped hole formed through a projection B<sup>3</sup> from the body of the casing, the complete casing, with the contained crank-axle having the driving-chain wheel and cranks mounted thereon and the ball-bearings of such axle, is propelled or caused to slide within the bottom bracket until the chain is adjusted to the required degree of tension, when the casing is secured in position by tightening the lock-nut C. By this method of adjusting I am enabled to obtain a perfectly-parallel movement of the crank-axle and that without any alteration of the vertical distance of the pedals beneath the saddle.

The ball-bearing cups are screwed within the enlarged ends of the crank-axle casing, and the cup, as E, at the side opposite to that on which the chain-wheel is fixed to the axle is provided with a square or annular head, as *e*, for adjustment purposes and is secured in position after adjustment by the lock-ring F, which screws into the casing and abuts against the cup E. Thus the complete casing, with the contained crank-axle, can be attached to the cycle or like frame or detached therefrom without disturbing the adjustment of the bearings. The open ends of the bottom bracket are closed by cover-plates, as G, provided with flanged or embracing ends, as shown.

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

1. In combination, a crank-hanger A having an opening elongated longitudinally of the frame, a crank-axle casing having a head B<sup>2</sup> projecting laterally therefrom at one end and fitting over the outer end of the crank-hanger against the edge of the elongated opening, said casing having an external screw-thread at its other end and a locking-ring C on said external screw extending over the other end of the crank-hanger, substantially as described.

2. In combination, a crank-hanger A having an opening elongated longitudinally of the

frame, a crank-axle casing having a head B<sup>2</sup> projecting laterally therefrom at one end and fitting over the outer end of the crank-hanger against the edge of the elongated opening, 5 said casing having an external screw-thread at its other end, a locking-ring C on said external screw extending over the other end of the crank-hanger, and a covering-plate G fitting between the locking-ring C and the end of 10 the crank-hanger, substantially as described.

3. In combination, a crank-hanger A having an opening elongated longitudinally of the frame, a crank-axle casing having a head B<sup>2</sup> projecting laterally therefrom at one end and 15 fitting over the outer end of the crank-hanger

about the elongated opening, said casing having an external screw-thread at its other end, a locking-ring C on said external screw extending over the other end of the crank-hanger, said casing being also internally 20 screw-threaded, a cup E screwed therein and a locking-ring F fitting the internal screw-threads and holding the cup in place, substantially as described.

In witness whereof I have hereunto set my 25 hand in presence of two witnesses.

HERBERT BEESTON.

Witnesses:

EDWARD MARKS,

HERBERT BOWKETT.