

No. 633,195.

Patented Sept. 19, 1899.

A. T. HARRIS.
BICYCLE CHAIN ADJUSTMENT.

(Application filed Sept. 19, 1898.)

(No Model.)

Fig. 1.

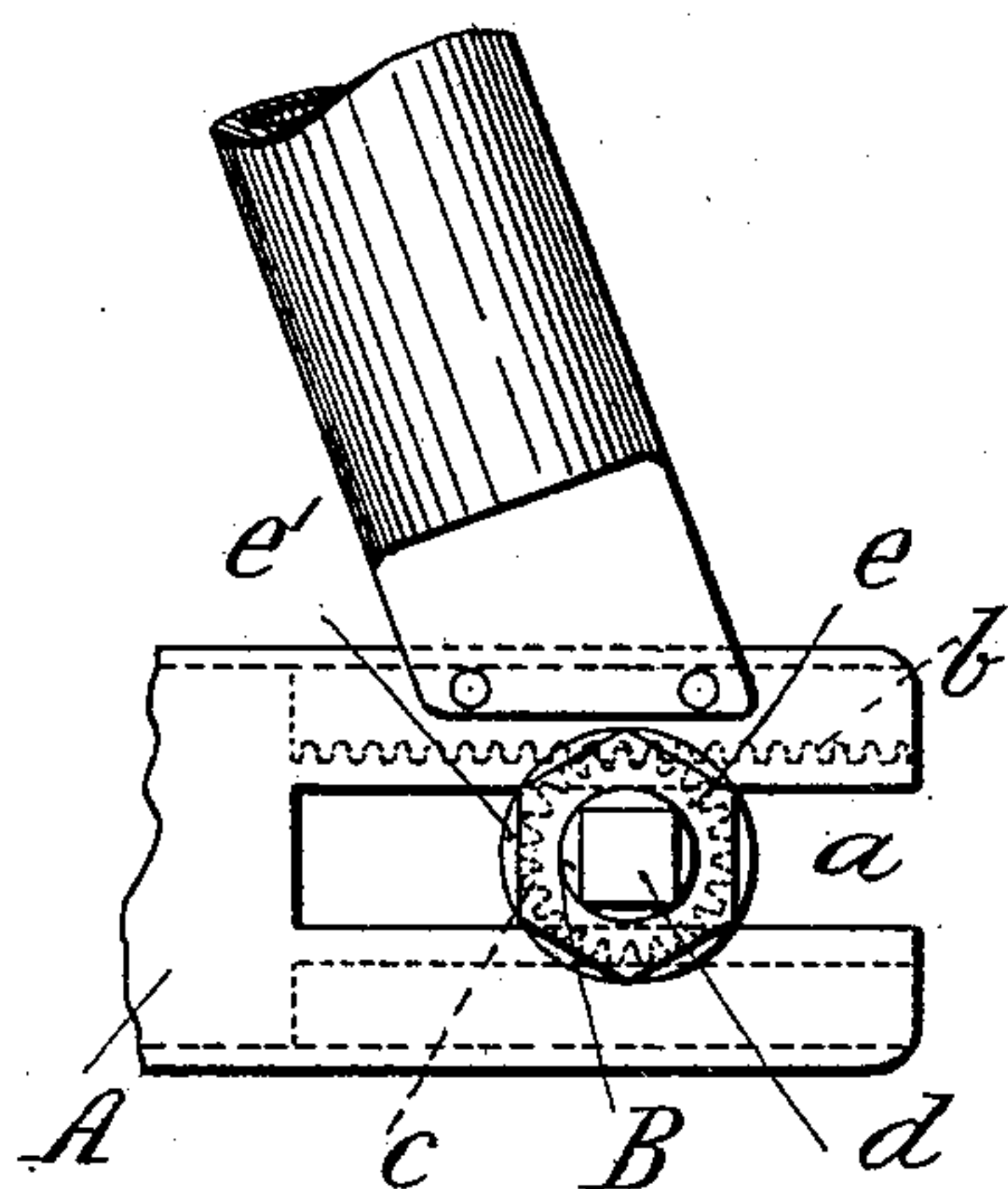


Fig. 2.

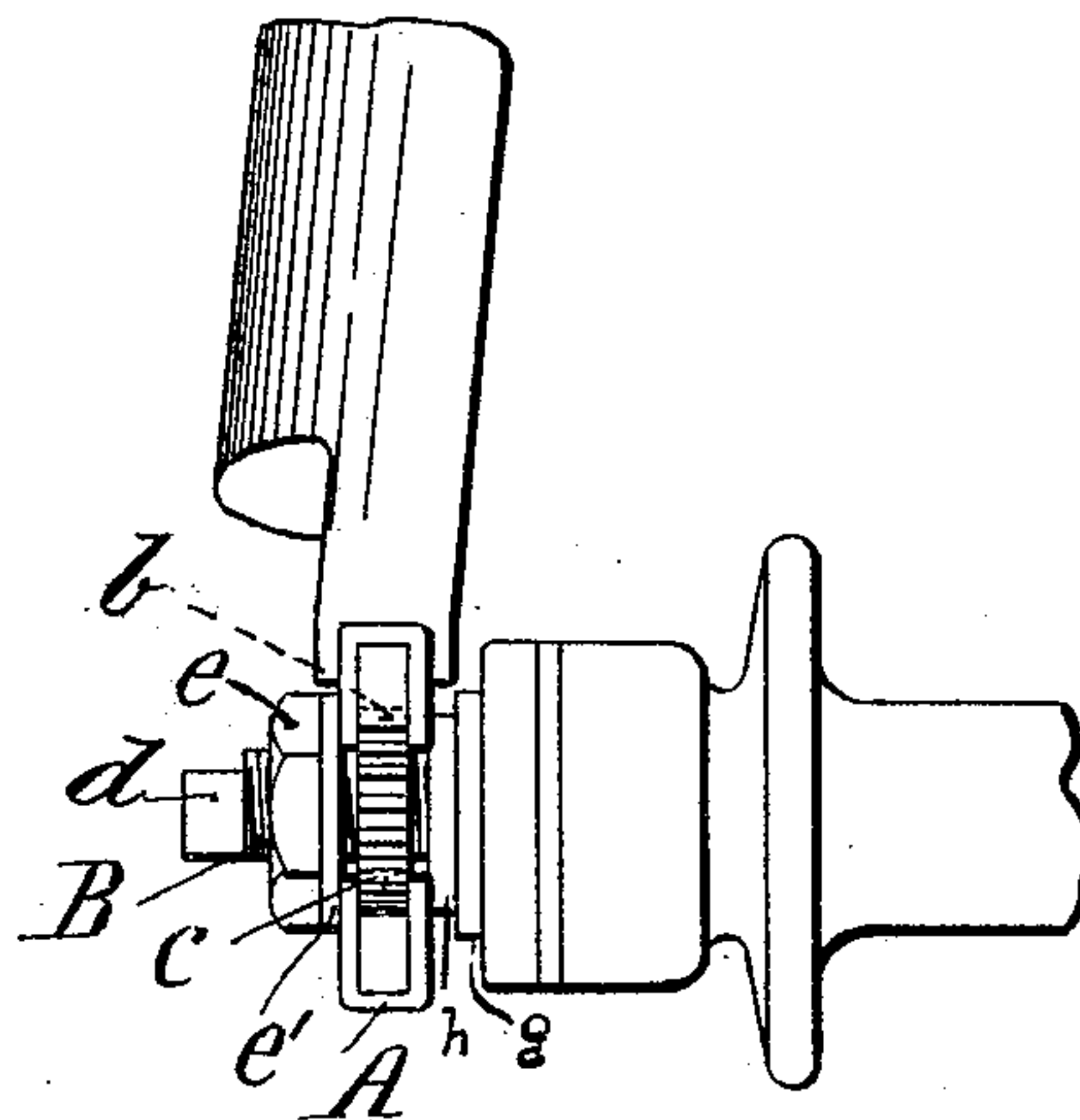


Fig. 3.

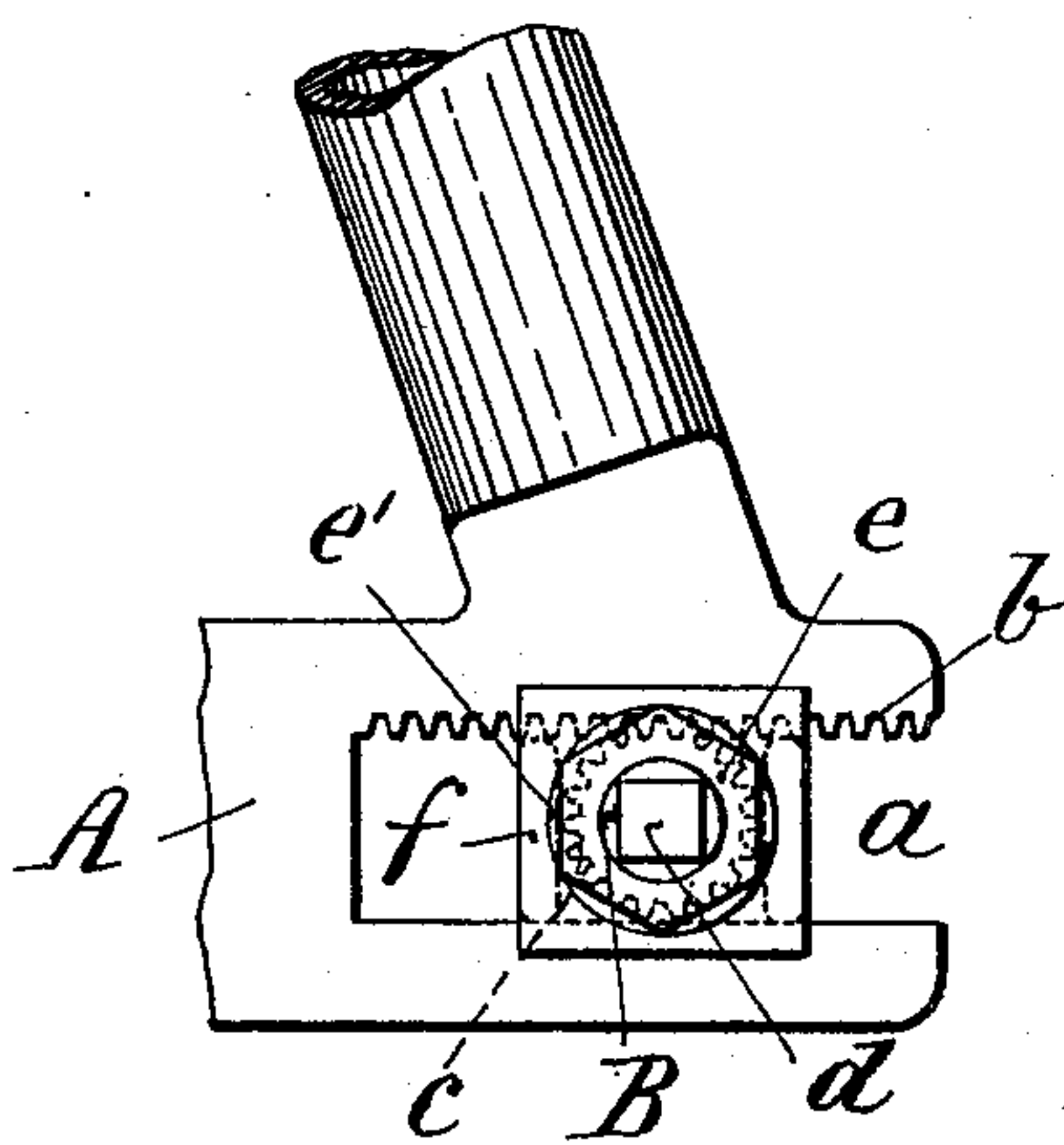


Fig. 4.

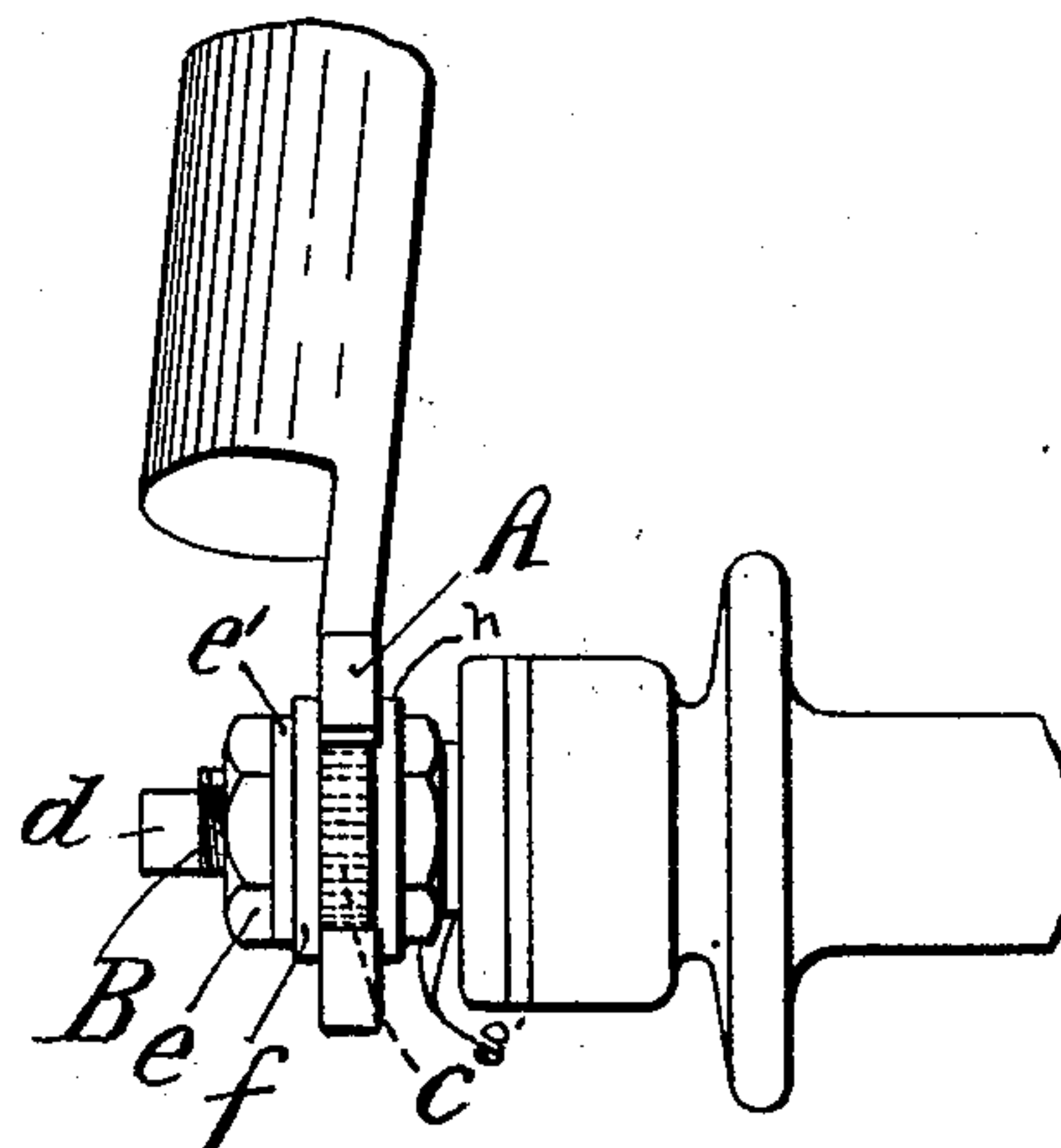


Fig. 5.

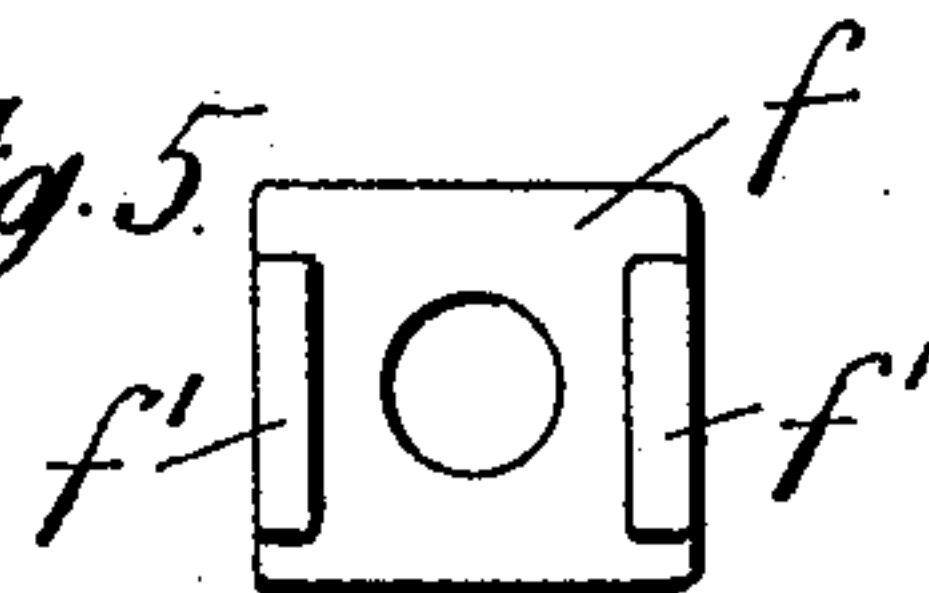
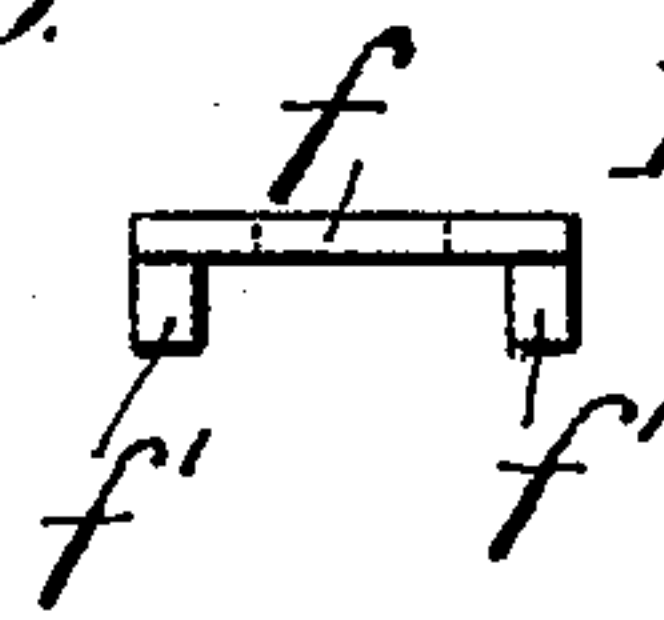


Fig. 6.



Fig. 7.



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ALBERT THOMAS HARRIS, OF LONDON, ENGLAND.

BICYCLE-CHAIN ADJUSTMENT.

SPECIFICATION forming part of Letters Patent No. 633,195, dated September 19, 1899.

Application filed September 19, 1898. Serial No. 691,388. (No model.)

To all whom it may concern:

Be it known that I, ALBERT THOMAS HARRIS, cycle engineer, a subject of the Queen of Great Britain, residing at Highfield, Station

5 Grove, Wembley, London, in the county of Middlesex, England, have invented an Improved Device for Adjusting the Tension of Cycle and Like Chains, of which the following is a specification.

10 My invention relates to an improved device for adjusting the tension of cycle and like chains, and has for its object to enable such adjustment and the locking of the wheel-spindle on which the sprocket-wheel revolves to
15 be easily and rapidly effected from either side of the wheel, so that the spindle will always occupy parallel positions. For this purpose I provide the slotted ends of the backstays with racks with which engage pinions held upon
20 the extremities of the wheel-spindle which extend through the slots, these extremities being furnished with a square or the like for the adjustment and with a nut and washer for the locking. In a modification the ex-
25 tremities of the wheel-spindle are supported in bearing-blocks fitted to slide in the slots and recessed for the reception of the pinions gearing with the racks.

Referring to the accompanying drawings,
30 Figure 1 represents a side elevation of my improved adjusting device. Fig. 2 is an end elevation. Fig. 3 shows a side elevation of a modified arrangement of this device, and Fig. 4 an end elevation of the same. Figs. 5, 6,
35 and 7 show a back view end elevation and plan of the sliding bearing.

Like letters of reference serve to designate corresponding parts in all the figures.

In the end of each backstay A of the cycle-
40 frame, which presents the slot *a*, Figs. 1 and 2, I secure a rack *b*, arranged either above or below such slot. With this rack *b* engages a pinion *c*, held upon the extremity of the wheel-spindle B, so as to allow the pinion to
45 slide thereon, for which purpose the said extremity of the spindle may, for instance, be flattened on one side, the central hole in the pinion being made to correspond.

Upon the extremity of the wheel-spindle B,
50 which terminates in a square *d* for enabling the spindle to be turned by means of a span-

ner or the like, I furnish a nut *e* and washer *e'*, which when forced against the outer face of the end of the stay will securely lock the said spindle in position.

55 Figs. 3 and 4 illustrate a modification of this adjusting device, wherein each extremity of the wheel-spindle B is held in a flanged bearing-block *f*, capable of sliding in the slot *a* at the end of the backstay A. The flange
60 of this bearing-block fits against the outer face of the stay and is designed to serve as a seat for the before-mentioned nut *e* and washer *e'*.

On the flange of the bearing-block *f* are
65 formed two projections *f'*, Figs. 5, 6, and 7, between which the pinion *c* is arranged to gear with the rack *b* at the upper side of the slot *a*, the lower portions of the said projec-
70 tions *f'* being adapted to slide upon the lower side of the slot *a*.

After loosening the nut *e* the tension of the chain passing around a sprocket-wheel on the spindle B may be adjusted by turning this spindle, which carries the pinions *c*, engaging
75 with corresponding teeth of the two racks *b*, thereby causing the spindle to travel forward or backward equal distances at both its extremities, according to the direction of the turning movement. When the adjustment
80 has taken place, the locking-nut *e* is tightened again to secure the spindle in position.

I introduce washers *h* between the stay ends and the bearing-cones *g*. The washers *h* are made of suitable size to bear against the stay
85 ends and are fitted onto the wheel-spindle, so as to rotate therewith, though free to move lengthwise thereon. Thus the washers *h* (instead of the cones *g*) take the friction against the stay ends when the spindle B is rotated
90 and the risk of altering the adjustment of the wheel-bearing is avoided.

I am aware that it has already been proposed to provide a velocipede-frame with racks and the wheel-spindle with pinions en-
95 gaging with the said racks in order to move the said wheel for chain-adjusting purposes, and I therefore do not broadly claim the same; but

What I do claim is—

In a cycle-chain-adjusting device compris-
100 ing racks on the frame and pinions on the

wheel-spindle engaging with the said racks,
the combination with the said racks, frame,
pinions and wheel-spindle, of slots in the
frame; bearing-blocks mounted on the said
5 wheel-spindle, and having projections adapt-
ed to slide on the lower parts of the said slots
and form recesses to receive the said pinions;
flanges on the said blocks bearing against the
said frame; nuts on the said wheel-spindle
10 bearing against the said flanges; and flats on

the said spindle adapted to receive a spanner,
substantially as and for the purpose set forth.

In testimony whereof I have hereunto set
my hand, in presence of two subscribing wit-
nesses, this 7th day of September, 1898.

ALBERT THOMAS HARRIS.

Witnesses:

CHARLES JUNGE,
G. F. WARREN.