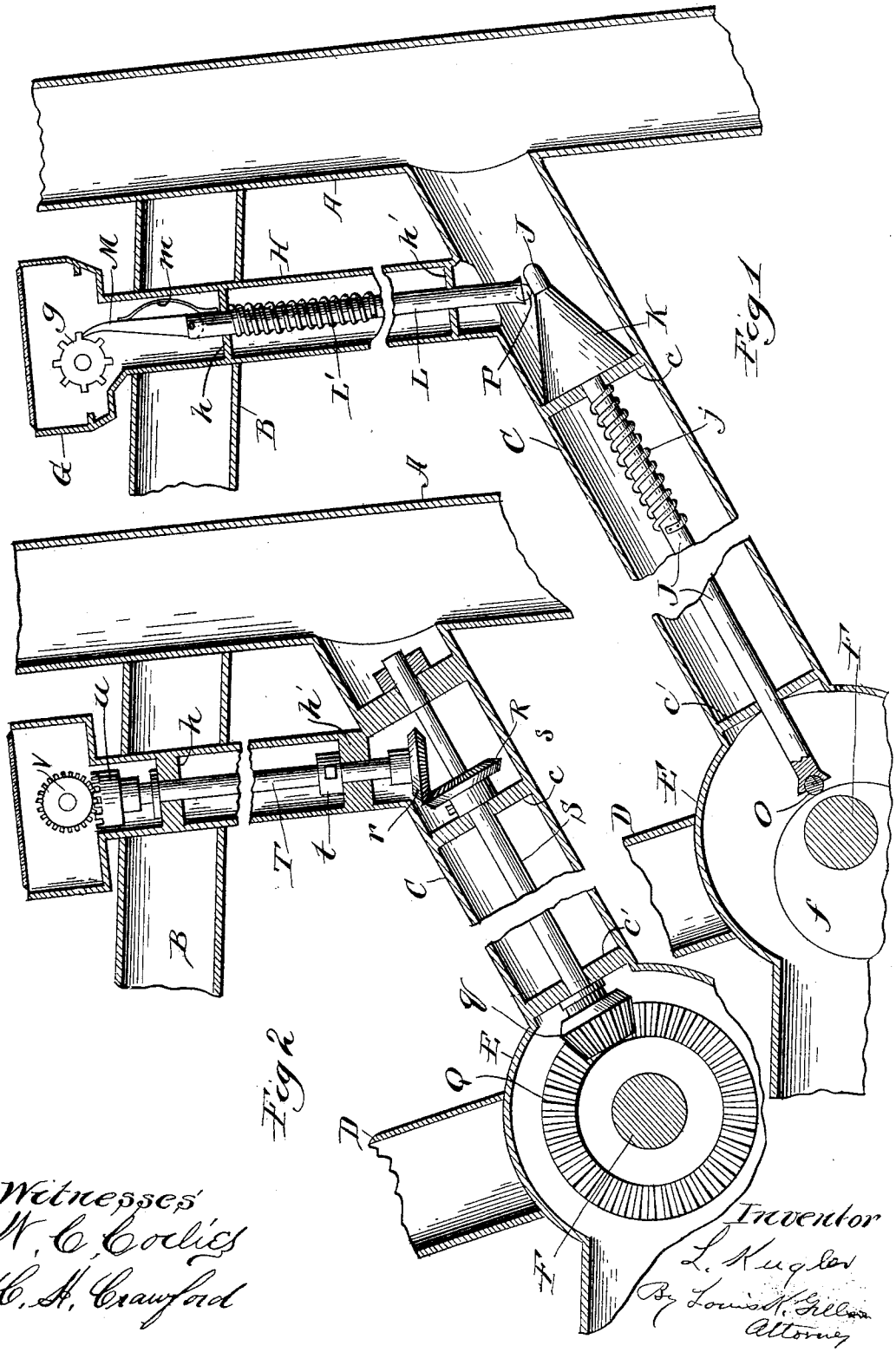
(No Model.)

L. KUGLER.

BICYCLE.

No. 596,072. Patented Dec. 28, 1897.



Witnesses:
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UNITED STATES PATENT OFFICE.

LADISLAUS KUGLER, OF CHICAGO, ILLINOIS.

BICYCLE.

SPECIFICATION forming part of Letters Patent No. 596,072, dated December 28, 1897.

Application filed June 20, 1896. Renewed May 27, 1897. Serial No. 638,453. (No model.)

To all whom it may concern:

Be it known that I, LADISLAUS KUGLER, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Bicycles; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The invention relates to the mounting and driving of cyclometers or speed-indicators upon bicycles; and its object is to so mount either of these instruments that it is under the eye of the rider and at short range of vision, and to actuate the instrument from the pedal-shaft of the cycle in a manner that will in no wise detract from the neatness and convenience of the machine and will also protect the mechanism from dust.

The invention consists in mounting the instrument immediately back of the front post or stem of the bicycle and directly over the main brace-rod or backbone leading from the stem to the seat-post and in inclosing the power-transmitting mechanism within tubes which may comprise parts of the frame of the bicycle.

It consists, further, in the special form of transmitting mechanism shown.

In the drawings, Figure 1 is a vertical section of a part of a bicycle-frame, showing the manner of mounting and actuating the instrument. Fig. 2 is a similar view showing a modified form of transmitting mechanism.

The main stem of the bicycle is shown at A, the tubular brace-rods B C leading from this stem to the seat-post D and pedal-crank hanger E, respectively. The pedal-shaft F is journaled within the hanger E in the usual manner and carries an eccentric *f*, coöperating with a thrust-rod J, mounted in bearing-bars *c c'*, fixed transversely across the bore of the brace-rod C and having its end held to the peripheral face of the eccentric *f* by a spiral spring *j*, having one end attached to the rod and the other end reacting against a fixed bearing, as the bar *c*. Upon the forward end of the rod J is axially mounted a cone K. A small tube H leads upwardly from the brace-rod C, immediately back of and parallel with the stem A, through the brace-rod B, terminating immediately above it, and upon the end of this tube is mounted the indicating instrument G. A thrust-rod L is mounted in bearing-bars *h h'*, set across the bore of the tube H, and rests upon the inclined face of the cone K and is held thereto by a spiral spring L', one end of which is secured to the rod, its other end reacting against a fixed bearing, as the bar *h*. The upper end of the rod L carries a spring-pawl M, which coöperates with a ratchet-wheel *g*, forming a part of the driving mechanism of the indicating instrument. The spring for holding the pawl M to the ratchet *g* is shown at *m*. As the shaft F is rotated the eccentric *f* forces the rod J forward, the rod L is lifted by the action of the cone K, and the pawl M moves the ratchet *g* to communicate motion to the instrument. The recession of the swell of the eccentric allows the rods J L to be returned to their former positions under the pressure of the springs *j* L', and the pawl is drawn back over the ratchet-teeth. The apex of the cone K is set back from the extreme end of the rod J and is so located that when the rod is in its normal or withdrawn position the rod L rests upon the rod J at the foot of the inclined face of the cone. The bearing ends of the rods J L are recessed axially to receive each an antifriction-ball O P.

In Fig. 2 is shown a modified form of construction in which gears form the transmitting agents and rotating shafts are substituted for thrust-rods. In this form a beveled gear Q, mounted upon the pedal-shaft F, intermeshes with a beveled pinion *q* on the end of a shaft S, journaled in the cross-bars *c c'*. A beveled gear R upon the forward end of the shaft S drives the shaft T, journaled within the tube H in the cross-bars *h h'*, by intermeshing with a beveled pinion *r*, mounted upon the lower end thereof, and a pinion *u*, mounted upon the upper end of the shaft T, coöperates with a pinion *v*, forming a part of the mechanism of the indicating instrument. Bearing-collars *s t* may be fixed upon the shafts S T to coöperate with the cross-bars forming the bearings for these shafts to prevent end thrust of the latter.

The transmitting mechanism may be vari-

ously modified; but I believe the two forms shown to be the most desirable.

I do not limit myself to the precise manner of mounting the indicating instrument which I have shown, the essential features of the invention being the transmission of power from the crank-shaft through the tubular frame of the bicycle to the instrument.

I claim as my invention—

1. The combination with a bicycle having a tubular frame and a crank-shaft, of a tube for carrying a cyclometer, or other indicating instrument, such tube being located back of the front stem of the frame and leading upwardly from the lower main member of the frame, power-transmitting mechanism mounted within the tube and the lower main member of the frame, and means for actuating such mechanism from the crank-shaft.

2. In a bicycle the combination with a tubular frame and a crank-shaft, of a tube leading upwardly from the lower main member of the frame, an eccentric mounted upon the crank-shaft, a thrust-rod within the lower member of the frame and bearing against the eccentric, a cone axially mounted upon said thrust-rod, a thrust-rod within the upwardly-directed tube and bearing upon the face of the cone, a pawl carried by the upper end of said last-named thrust-rod, and an indicating instrument carried by the bicycle-frame and having a ratchet for coöperating with the pawl.

In testimony whereof I affix my signature in presence of two witnesses.

LADISLAUS KUGLER.

Witnesses:

LOUIS K. GILLSON,

ISABEL A. HELMICH.