

(No Model.)

2 Sheets—Sheet 1.

C. H. LAMSON.

CYCLOMETER.

No. 320,145.

Patented June 16, 1885.

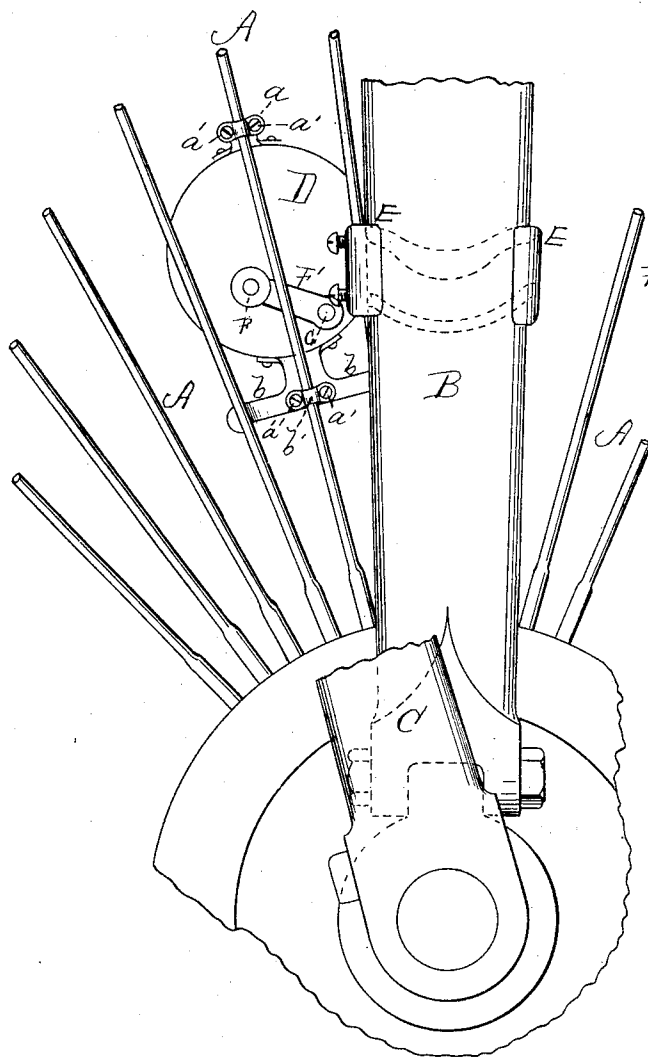


Fig. 1.

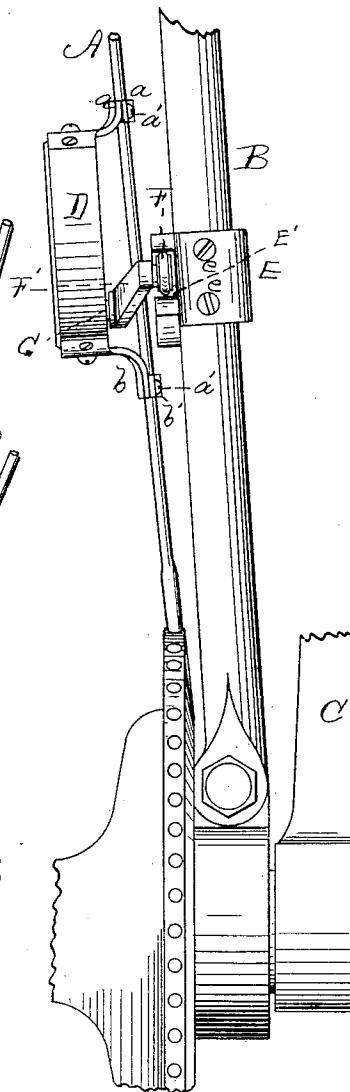


Fig. 2.

WITNESSES

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Henry Williams

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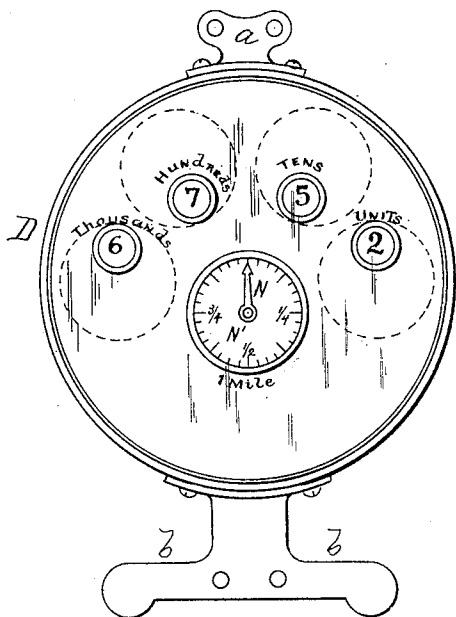


Fig. 3.

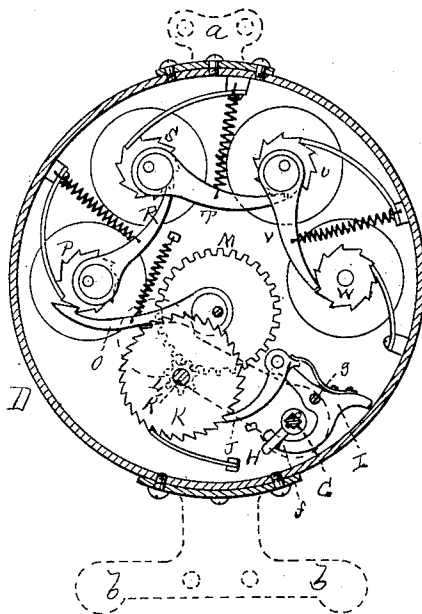


Fig. 4.

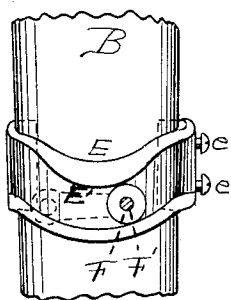


Fig. 5.

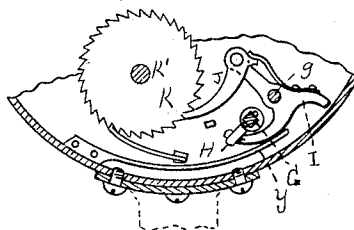


Fig. 6.

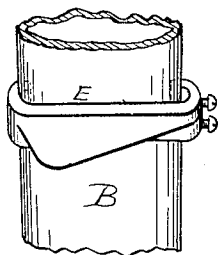


Fig. 7.

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UNITED STATES PATENT OFFICE.

CHARLES H. LAMSON, OF PORTLAND, MAINE.

CYCLOMETER.

SPECIFICATION forming part of Letters Patent No. 320,145, dated June 16, 1885.

Application filed March 21, 1885. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. LAMSON, of Portland, in the county of Cumberland and State of Maine, have invented new and useful Improvements in Cyclometers, of which the following is a specification.

This is a cyclometer intended particularly to be attached to bicycles and other velocipedes, and it is constructed especially with the view of making its operation and registration positive and without possibility of failure, regardless of the speed at which the wheel whose revolutions are being registered is revolving.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 is a view looking from the right side of portions of a bicycle-wheel, fork, and crank with my cyclometer applied in position for use. Fig. 2 is a view of the same, looking from the rear. Fig. 3 is a front elevation of the cyclometer. Fig. 4 is a vertical section showing the interior mechanism in rear elevation. Fig. 5 is an elevation of a portion of the inside of the fork with the cam attached and the roll by which said cam operates the cyclometer in position. Fig. 6 is a vertical section taken on the same line as that shown in Fig. 4, illustrating the modification. Fig. 7 is an elevation of a portion of the inside of the fork with mechanism attached adapted to the said modification.

A A represent the spokes of the driving-wheel of a bicycle.

B is a portion of the right side of the fork or frame, and C is a portion of the right crank.

D is the cyclometer box or case, secured to one of the spokes A next the right side of the fork B. The box D lies inside the wheel with its rear side to the right fork and its face to the left side of the machine, so that the reader stands on the left side of the wheel to examine its record. It is secured to the spoke by clamps *aa*, held against the intermediate spoke by screws *a'*, (not new in this invention,) and also by the lower additional clamps, *b b'*, the former of which is widened as shown in Fig. 1, so as to cover a plurality of spokes, preferably three, in order that the cyclometer may during its entire action be fast on the same plane as the driving-wheel A.

E is a clip, of substantially the shape shown in Figs. 1, 2, and 5, held upon the right side of the fork by set-screws *e* or other suitable means, and provided with the cam-groove *E'*, which operates a friction-roller, F, on the free or outer end of an arm, F', rigidly secured to a shaft, G, passing through a corresponding opening in the rear side of the case D, said shaft being connected with the interior registering mechanism of the cyclometer.

The cyclometer on the spoke and the cam on the fork are both placed at about the same distance from the axis of the wheel, so that with each revolution of the wheel the roll F, on the arm or lever F' will, when the cyclometer reaches the cam, enter the cam-groove and pass through it and out at the opposite end on the other edge of the fork.

Fig. 1 shows the roll about to enter the groove. Figs. 2 and 5 show the roll in the groove. Owing to the decided curve in the cam-groove a downward motion is given to the roll as the cyclometer passes the fork, such motion of course causing the lever F' to swing down and partially rotate the shaft D, thus actuating the mechanism within the cyclometer and causing the revolution of the wheel to be registered. Thus it will be seen that the operation of the cyclometer is positive without regard to the speed at which the vehicle is being propelled, and this is the principal advantage which it possesses over the cyclometers generally in use, which depend upon gravity to operate them, and which often, when the wheel is revolving at a high speed, fail to register, owing to the power of gravity being counteracted or overcome by the centrifugal force acting upon the weights or pendulums or other depending parts. The shaft G, to which the lever F' is fast, extends through the casing and is squared (see Fig. 4) to receive the lever H, which, when the lever F' is moved, moves with it, and by bearing against a projection, *f*, on the bell-crank lever I, pivoted at *g* to the casing of the cyclometer, moves said lever on its pivot *g*, and by means of the pawl J moves the ratchet-wheel K forward one tooth. A pinion, L, is fast to the same shaft K' as the ratchet-wheel K, and meshes into a gear-wheel, M, having the proper relative number of teeth to cause the index-

hand N on the dial N' to make one revolution when the bicycle-wheel has made revolutions enough to cover one mile. By means of the suitable pawls and ratchets, O P R S T U V 5 W, the face of the cyclometer is allowed to register units, tens, hundreds, and thousands of miles. This mechanism not being novel in this invention, I will not describe it more particularly.

10 This cyclometer is particularly dust-proof, for the reason that there is but one opening through the case—viz., that through which the shaft G passes—and this opening is nearly filled by said shaft and may be tightly closed, 15 if desired, by pressing the shoulder of the shaft against the edge by means of a spring. If desired, the position of the cyclometer and cam may be reversed, the cyclometer being placed on the fork, and the cam on a spoke or hub of 20 the wheel. The roller F is not essential to the working of the device, but merely facilitates it.

In attaching the device to a tricycle the cyclometer would probably be secured to the 25 fixed axle outside the wheel, and the cam to the hub of the wheel, or vice versa.

In the modification shown in Figs. 6 and 7, the clip E is provided with an inclined cam instead of a grooved one, thus necessitating 30 the use of a spring, y, inside the case to return the levers F', H, and I.

I do not confine myself to the shape of the cam shown in the drawings, as it may be somewhat varied and still be practical.

35 This cyclometer is light, easily attached and read, out of the way of the lamp, not liable to be struck by flying mud, as it can be

placed upon any part of a spoke, and, by modifications of the clamp and cam, may be attached to various parts of a bicycle or tricycle. 40

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

1. A cyclometer for bicycles and other velocipedes, adapted to be rigidly secured to one 45 of the spokes of the driving-wheel and provided with an arm or lever connected with the registering mechanism thereof, in combination with a cam secured to the fork or frame, said arm or lever being adapted to be engaged 50 by said cam when the cyclometer passes the fork during its revolution, substantially as and for the purpose set forth.

2. A cyclometer for bicycles and other velocipedes, adapted to be secured to one of the 55 spokes of the driving-wheel and provided with the arm or lever F', connected with the registering mechanism thereof, in combination with the curved cam-clip E E', secured to the fork or frame, substantially as and for the 60 purpose described.

3. The combination, with the casing or box of the cyclometer, of a clamp or bracket for securing the same to the spokes of the wheel of a bicycle or other velocipede, said clamp or 65 bracket extending transversely over or across two or more of said spokes for the purpose of retaining the cyclometer on the same plane as the wheel, substantially as and for the purpose set forth.

CHARLES H. LAMSON.

Witnesses:

FRED W. PALMER,
LYNN BUCKLEY.