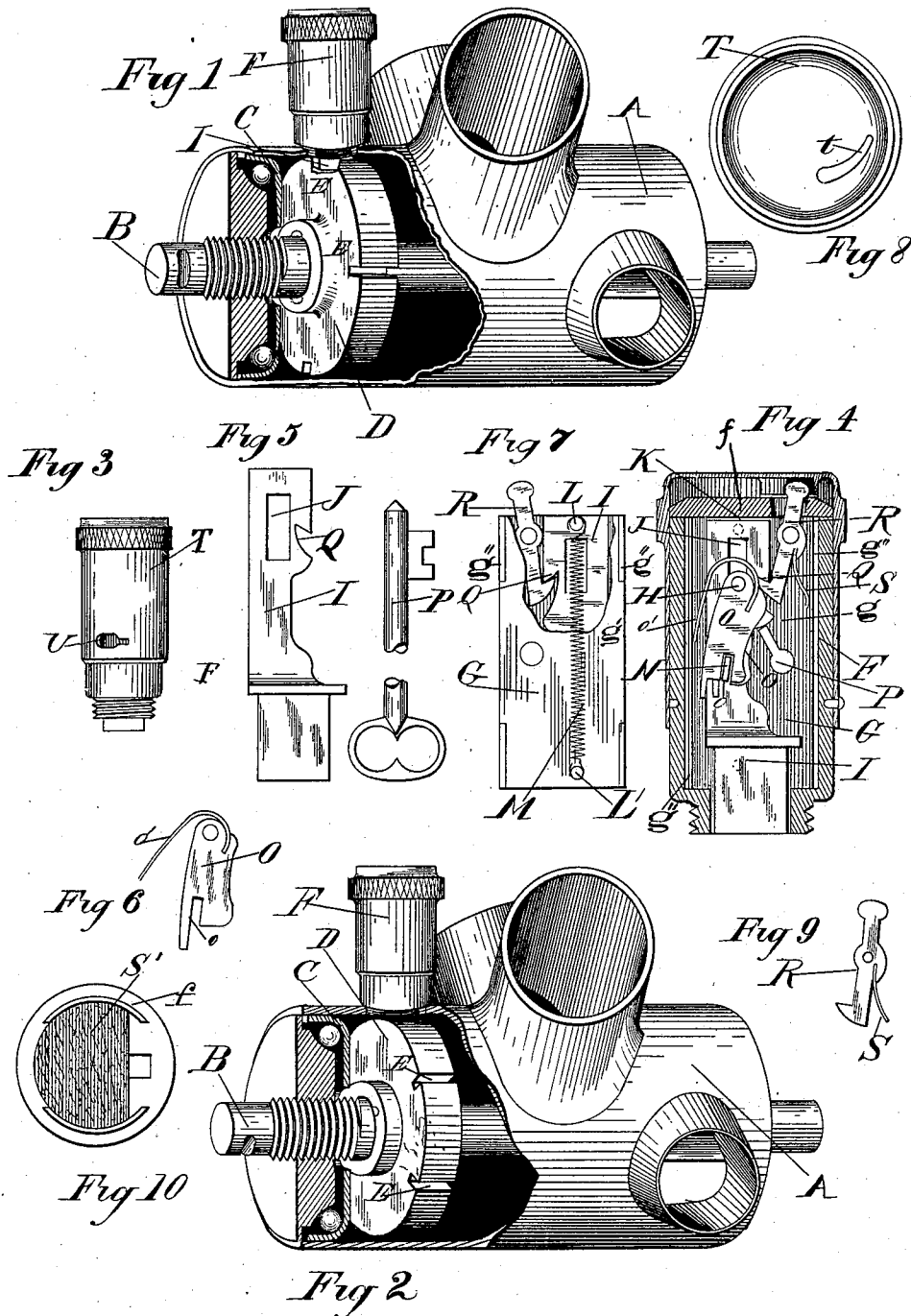


(No Model.)

F. A. CLARRY.
BICYCLE LOCK.

No. 590,803.

Patented Sept. 28, 1897.



Witnesses

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UNITED STATES PATENT OFFICE.

FREDERICK A. CLARRY, OF TORONTO, CANADA.

BICYCLE-LOCK.

SPECIFICATION forming part of Letters Patent No. 590,803, dated September 28, 1897.

Application filed February 15, 1897. Serial No. 623,583. (No model.) Patented in Canada February 12, 1897, No. 54,969.

To all whom it may concern:

Be it known that I, FREDERICK ADOLPHUS CLARRY, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Bicycle-Locks, (patented in Canada February 12, 1897, No. 54,969;) and I hereby declare that the following is a full, clear, and exact description of the same.

The object of this invention is to provide a bicycle with a lock which when set will positively prevent the revolution of the wheel to which it is directly or indirectly connected and to so arrange the bolt of the lock that it can be shot into its keeper without the employment of a key.

The characteristic features of my invention will be fully described hereinafter, and pointed out in the appended claims.

In the drawings, Figure 1 represents a perspective view of the crank-axle bracket, partially broken away to show the crank-axle provided with a plurality of sockets and the bolt of the lock engaging one of the sockets. Fig. 2 is a similar view showing the bolt of the lock disengaged from the socket in the axle. Fig. 3 is a view of the outside of the lock. Fig. 4 is an enlarged sectional view of the lock. Fig. 5 is a view of the bolt. Fig. 6 is a view of one of the tumblers. Fig. 7 is a view of the frame for holding together the lockworks, partially broken away to show the lock mechanism. Fig. 8 is a cross-sectional view of the cap for the lock-case. Fig. 9 is a view of the trip-dog for supporting the bolt. Fig. 10 is a view of the top of the lock-case.

Like letters of reference refer to like parts throughout the specification and drawings.

A represents the crank-axle bracket; B, the crank-axle, journaled in suitable bearings C within the bracket A. D represents a collar mounted on the axle A. In the collar D are formed a plurality of peripheral sockets E. As shown in the drawings, four sockets are employed, but I may use one or any number. Instead of providing the axle B with a collar D, I may form the sockets E in the axle, or I may provide the axle with a plurality of teeth instead of using the sockets.

F represents a lock-case connected to the bracket A, the lower end of the case being opposed to the collar D. Within the case F is

a frame G for the works of the lock. The frame G consists of a back *g* and front and sides *g'* *g''*, respectively. The inner side of the back *g* is provided with an inwardly-projecting pin H.

I represents the bolt, having a longitudinal slot J, through which extends the pin H. The movement of the bolt I is limited by the ends of the slot J coming into contact with the pin H. Formed in the top of the back *g* is a recess K, and rigidly connected to the back of the bolt I is a pin L, which extends through the recess K beyond the back *g*. Connected to the bottom of the back *g* is a pin L', and attached to the pins L L' is a spring M. The tendency of the spring M is to draw downward the bolt I.

N represents a fence connected to the front of the bolt, and O O represent two tumblers, one end of each of which is mounted on the pin H and the opposite ends of which are adapted to engage the fence N. Each of the tumblers O O is fitted with a gating *o*, adapted to be moved into a position opposite the fence N, and the upper portion of each tumbler is provided with a spring *o'* to move the tumblers into such position as to allow their ends to engage the fence N of the bolt when shot and to prevent the withdrawal of the bolt until the insertion of the proper key P.

Q represents a notch formed in the side of the bolt I, and R represents a trip-dog, one end of which is adapted to engage the notch Q to hold the bolt in its withdrawn position and the opposite end of which projects through the top of the case F.

S represents a spring connected to the trip-dog R and adapted to bear against the adjacent side *g''* of the frame G to hold the end of the trip-dog R in engagement with the notch Q.

S' represents a washer of elastic or other material connected to the under side of the top of the case F and bearing against the adjacent end of the trip-dog R to press outward the adjacent end of the dog R and more securely hold the opposite end of the said trip-dog in engagement with the notch Q.

T represents a cap for the case F, and *t* represents a cam connected to the under side of the top of the cap and adapted to engage the adjacent end of the trip-dog R in order

that the opposite end of the trip-dog may be released from engagement with the notch Q during the movement of the cap.

U represents a keyhole formed through the cap T, front g' of the frame g'' , and case F for the insertion of the operating-key.

The use of the lock is as follows: The cap T is turned to bring the cam t into engagement with the adjacent end of the trip-dog R. The engagement of the cam t with the adjacent end of the trip-dog R throws the said end inward and the opposite end of the trip-dog out of engagement with the notch Q. The disengagement of the trip-dog and tooth permits the spring M to shoot downward the bolt I toward the collar D, and if the bolt I during its downward movement is opposite to one of the sockets E it will immediately enter the socket, or if a socket is not opposite to the bolt when the latter is shot the bolt will enter the first socket opposed to it during the revolution of the wheel, the socket then acting as a keeper for the bolt. The entry of the bolt I into one of the sockets E positively prevents the revolution of the axle. I do not confine myself to the use of a collar, as the sockets can be formed in the axle B.

I have shown the lock applied to the crank-axle bracket and crank-axle of a bicycle, but I may apply it to the hub and axle of either the driving-wheel or the steering-wheel, if I so desire, in those bicycles where the axle remains stationary and the hub revolves about the axle, and in those cases where the axle revolves with the hub I can attach the lock to the bearings. A lock of this kind forms an integral part of the bicycle, and consequently is constantly carried with it. By the arrangement of the lockworks the bolt can be shot into its keeper without the employment of a key, and when shot into its keeper will completely arrest the revolution of the crank-axle.

When the bolt of the lock is shot into its keeper, it is impossible to unscrew the lock and remove it from the bicycle.

I do not confine myself to the use of any specific number of tumblers, as I may use any number that I find advisable.

By using a lock of this description it is utterly impossible after the bolt has been shot to revolve, or partially revolve, the wheel to which the lock is directly or indirectly connected without first withdrawing the bolt from its keeper, and thus the theft of the bicycle to which the lock is attached is practically prevented. The cam t is placed in such a position in relation to the keyhole U in the cap T as to disengage the trip-dog R when the cap is being turned to bring the

keyholes opposite each other and to permit of the trip-dog engaging the bolt when the keyholes are opposed. When the keyholes are not opposed, the cap T prevents the entry of dust or other foreign particles to the lock.

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

1. The combination with the axle of a bicycle or like vehicle, provided with one or more sockets or keepers, of a lock comprising a casing, a spring-controlled bolt adapted to engage said socket or keeper, and a movable cap, and means for holding the bolt retracted, said means being released by said cap.

2. In a bicycle, the combination of an axle having a socket, or a plurality of sockets, a lock comprising a casing, a bolt adapted to enter the socket and arrest the revolution of the wheel, a trip-dog to engage the bolt, and hold it in its withdrawn position, a movable cap for releasing the bolt and a series of tumblers to prevent the withdrawal of the bolt except by the operating-key, substantially as specified.

3. In a bicycle the combination of an axle having a socket, or a plurality of sockets, a lock comprising a casing, a bolt adapted to enter the socket and arrest the revolution of the wheel, a trip-dog to engage the bolt and hold it in its withdrawn position, a movable cap for the casing adapted to engage the trip-dog, a series of tumblers to prevent the withdrawal of the bolt except by the operating-key, and an elastic washer to hold the trip-dog in engagement with the bolt, substantially as specified.

4. A bicycle-lock consisting of a case, a movable bolt within the case, a trip-dog to hold the bolt in its withdrawn position, a spring to shoot the bolt when released from the trip-dog, a cap for the casing, a cam carried by the cap, adapted to engage the trip-dog and release it from the bolt, substantially as specified.

5. A bicycle-lock consisting of a case, a movable bolt within the case, a trip-dog to hold the bolt in its withdrawn position, a spring to shoot the bolt when released from the trip-dog, a cap for the casing, a cam carried by the cap adapted to engage the trip-dog and release it from the bolt, an elastic washer to hold the trip-dog in engagement with the bolt, and tumblers to prevent the withdrawal of the bolt except on the insertion of the operating-key, substantially as specified.

Toronto, January 22, A. D. 1897.

FRED. A. CLARRY.

In presence of—

M. A. WESTWOOD,
C. H. RICHER.