

No. 623,084.

Patented Apr. 11, 1899.

S. C. HOUGHTON.
BICYCLE LOCK.

(Application filed Mar. 26, 1897.)

(No Model.)

Fig. 1.

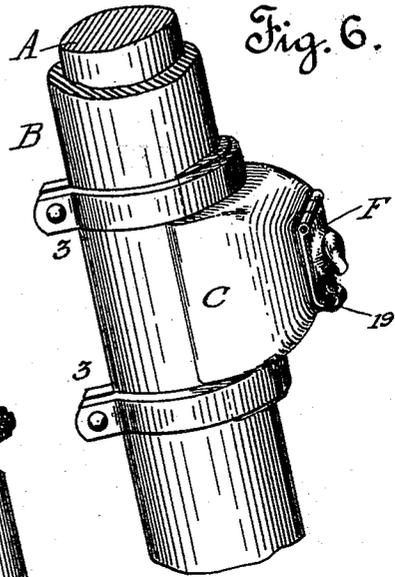
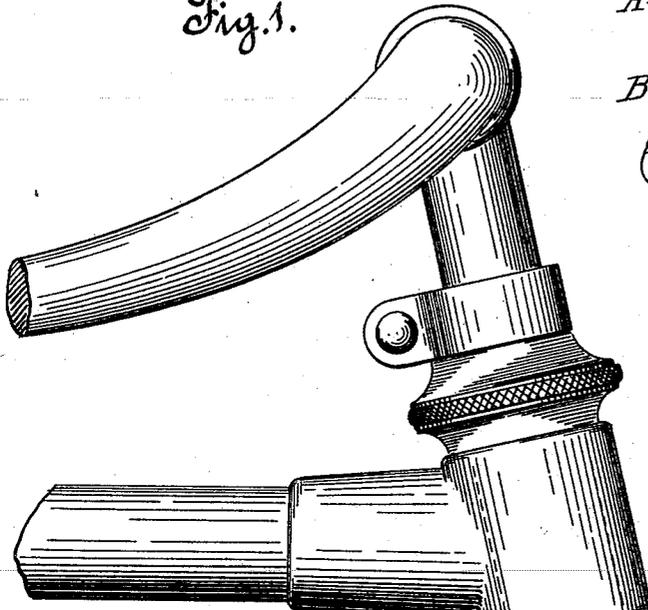


Fig. 6.

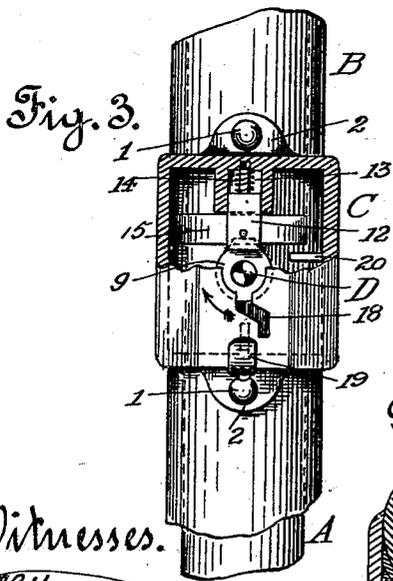


Fig. 3.

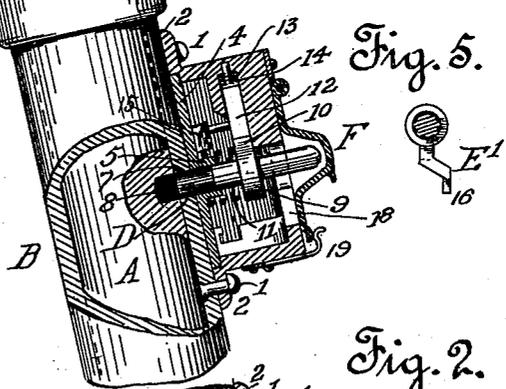


Fig. 5.

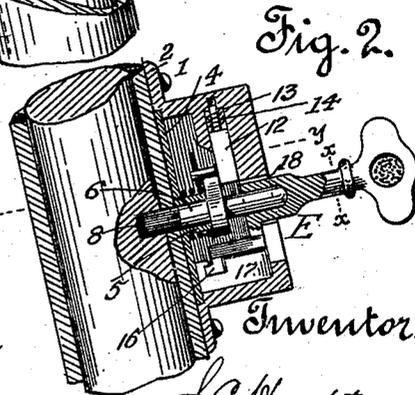


Fig. 2.

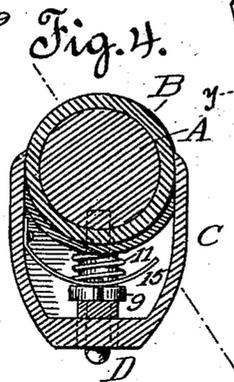


Fig. 4.

Witnesses.
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UNITED STATES PATENT OFFICE.

STEPHEN C. HOUGHTON, OF SAN FRANCISCO, CALIFORNIA.

BICYCLE-LOCK.

SPECIFICATION forming part of Letters Patent No. 623,084, dated April 11, 1899.

Application filed March 26, 1897. Serial No. 629,392. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN C. HOUGHTON, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Bicycle-Locks; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to improvements in that class of locks designed to lock the steering apparatus against turning; and the object of the invention is to provide an improved form of lock specially adapted for this purpose and which can be applied to the steering devices without weakening any part exposed to strain.

The invention will be hereinafter fully described and shown in the accompanying drawings, in connection with which this specification should be read.

Figure 1 is a side elevation of part of the steering-head of a bicycle broken away to show a section of the tubing and is also a central vertical section of the lock-casing attached thereto, with the spindle unlocked. Fig. 2 is a similar section of the lock-casing with the spindle locked. Fig. 3 is a front elevation of the lock-casing partly broken away. Fig. 4 is a horizontal section on the line yy , Fig. 2. Fig. 5 is a cross-section of the key on line xx of Fig. 2. Fig. 6 is a perspective view of the lock in place, but showing a modified manner of attaching it to the steering-head. This figure shows the external appearance of the lock when in use.

A represents the spindle, and B the sleeve or tube, the two comprising the steering-head of a bicycle. At any convenient point on the tubing—as, for instance, just below the coupling of the horizontal tube of the diamond frame—is secured the lock-casing C. In Figs. 1 and 3 the casing is shown as secured to the tube B by rivets 1, which pass through projecting ears 2 of the casing. The casing can also be attached in other ways—as, for instance, as shown in Fig. 6, by means of clips 3 3, which pass over the ears projecting from the casing, embrace the tube B, and have their free ends riveted together. This avoids the drilling of rivet-holes in the tubing and

also permits the lock to be readily attached to a machine in use.

Within the lock-casing and held in a recess in its wall is a back plate 4, which fits the curved surface of the tube and is provided with a hollow boss 5, which is preferably squared internally. The boss forms a guide for a locking-bolt D, having a squared portion 6. A hole 7 is provided in the tube B, registering with the hollow boss to receive the bolt. A hole 8 is made in the spindle A and placed out of line with hole 7, so that it is necessary to turn the steering-wheel at an angle to the frame in order to have the two holes register, admit the bolt, and lock the spindle. The dotted line in Fig. 4 indicates the plane of the machine when both wheels are in line, and hence illustrates the position of the locking device relatively to that plane. Another hole can be formed in the spindle on the other side of this line if it should be considered desirable to be able to lock the spindle at two directions or angles instead of one. It is obvious that with the steering-head locked so that the steering-wheel stands at an angle it is impossible to ride the bicycle or to trundle it except with a limited circular motion.

Secured upon or formed with the locking-bolt D is a collar 9, having a square-ended projection 10, which in connection with the front wall of the casing acts as a stop to limit the forward movement of the bolt. A coil-spring 11 encircles the bolt between the back plate 5 and the collar 9, which tends to keep the bolt out of engagement with the hole in the spindle. This prevents any but intentional locking of the spindle. In unlocked position, Fig. 1, the collar 9 abuts against a sliding block 12, guided in a recess 13 of the casing and having a pressure-spring 14, which tends to force it toward the interior of the casing. Hence to lock the steering-spindle it is necessary to push the bolt inwardly when the locking-holes register, permitting the block 12 to spring into the position of Fig. 2 in front of the collar 9. When in this position, the block 12 is prevented from being displaced by a safety device, consisting of a pin 21, projecting from the block, which engages a slot

in the leaf-spring 15, Fig. 4, secured to the wall of the lock-casing. This device prevents a bent wire from being used to push back the block 12, while the collar 9 makes the pin 21 inaccessible to such a wire, as appears from Fig. 2.

The device is unlocked with a special key, the construction of which is shown in Figs. 2 and 5. The locking-bolt projects forward from the collar and into a keyhole in the front of the casing, and thus forms a bearing upon which the hollow key E can turn. The key-bit E' is offset from the hollow barrel, Fig. 5, and is provided with a projecting ward 16 of some special shape. The offset in the bit permits the key to turn completely around the bolt. In the bottom of the case is a correspondingly-shaped notch which may be formed in a rib 17, as shown, or otherwise, so as to admit only the proper key, but to act as a stop for other keys. A keyhole 18 is formed in the front of the casing. When the key is turned in the direction of the arrow in Fig. 3, it first bears upon the leaf-spring 15 and disengages the pin 21 of block 12. The beveled face of the key-bit then strikes the pin and pushes the block 12 into its recess, which permits the coil-spring 11 to shoot the bolt to the position of Fig. 1, which is its unlocked position. The key can be turned backward and withdrawn. A stop-pin 20 prevents it from being turned in the wrong direction.

The keyhole is preferably covered by a hinge-plate F, provided with some simple

catch or fastening, such as 19, to hold it in place. This excludes dust from the interior besides giving a neat external finish.

The external appearance of the lock is shown in about its proper shape and proportion in Fig. 6. In the other figures the parts are somewhat exaggerated in size for the sake of clearness.

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

1. In a lock, the combination with the casing, of a spring-bolt and spring-block sliding at right angles, and adapted to engage so as to lock said bolt, a pin projecting from said block and a slotted spring engaging with said pin, for locking the block in engagement with the bolt, substantially as described.

2. In a bicycle-lock, and in combination a casing, a sliding bolt having a collar or projection, a sliding block adapted to engage said collar and lock the bolt, a pin on said block, a slotted spring engaging said pin, and a key adapted to turn upon said bolt, so as to disengage said spring, and then to disengage said block so as to release the bolt, substantially as described.

In testimony whereof I have affixed my signature, in presence of two witnesses, this 18th day of March, 1897.

STEPHEN C. HOUGHTON.

Witnesses:

H. J. LANG,

L. W. SEELY.