No. 634,441. Patented Oct. 10, 1899.

J. S. CAPEN & H. W. CHENEY.

LOCK FOR BICYCLE STANDS.

(No Model.) (Application filed Oct. 29, 1897.)

2 Sheets—Sheet 1.

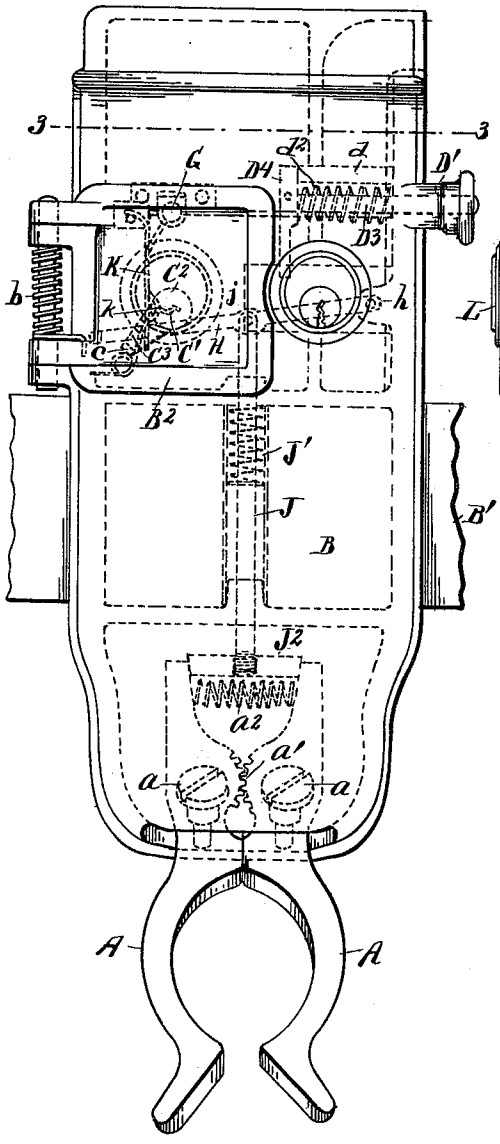


Fig. 1.

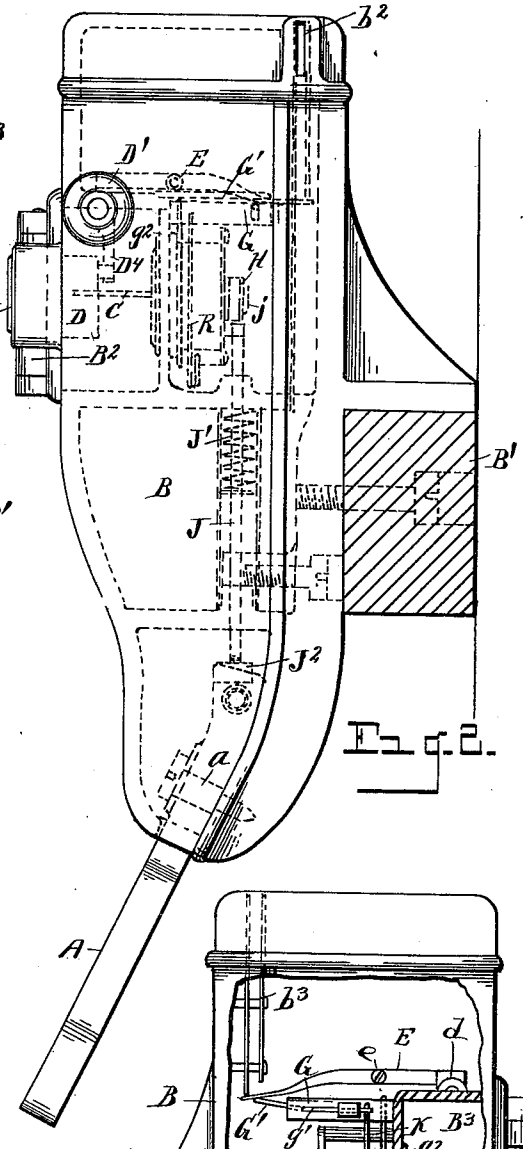


Fig. 2.

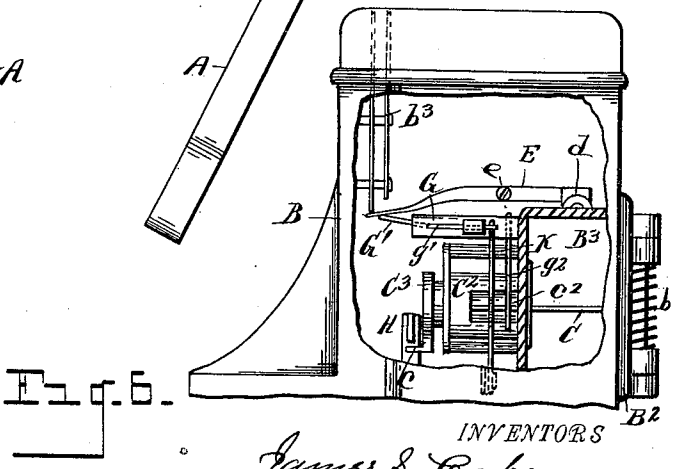


Fig. 6.

WITNESSES

O. F. Barninger

Mary Hickey.

INVENTORS

James S. Capen

Herbert W. Cheney

By their Attorney

Merrill S. Wright

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 634,441.

Patented Oct. 10, 1899.

J. S. CAPEN & H. W. CHENEY.

LOCK FOR BICYCLE STANDS.

(No Model.)

(Application filed Oct. 29, 1897.)

2 Sheets—Sheet 2.

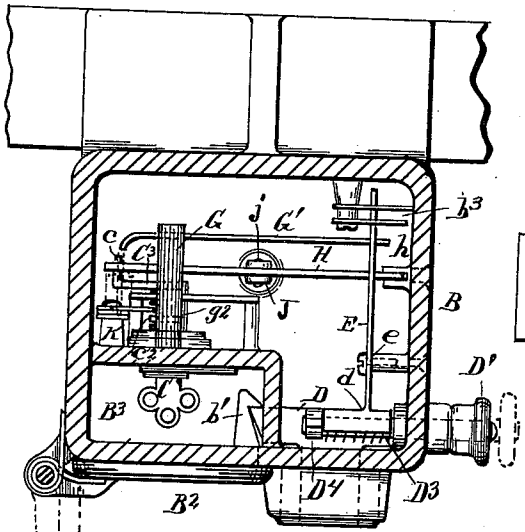


Fig. 5.

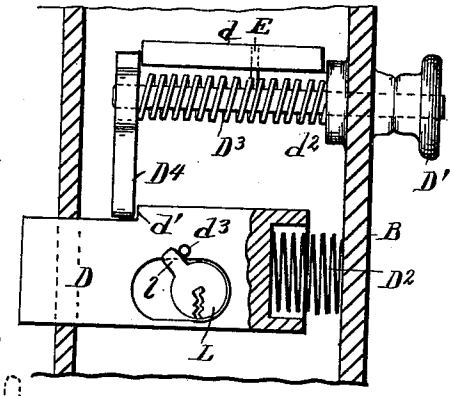


Fig. 6.

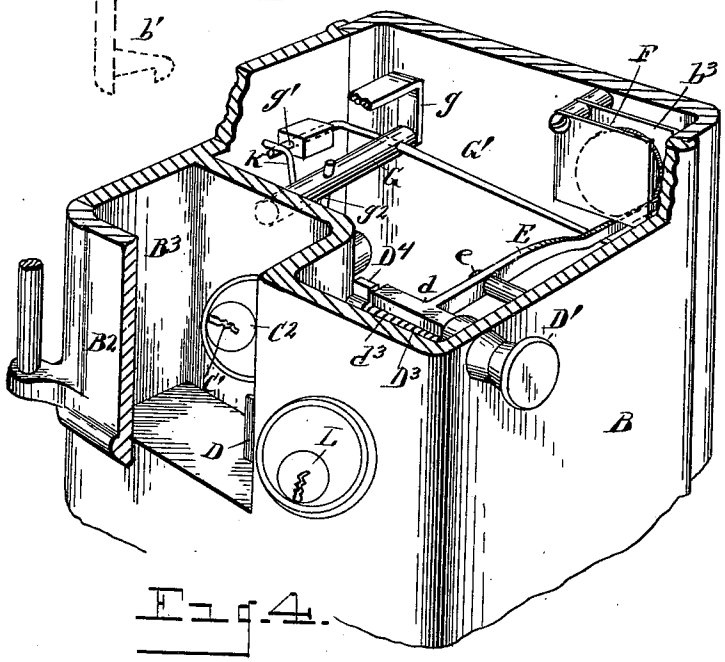


Fig. 4.

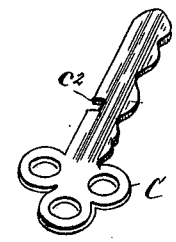


Fig. 7.

WITNESSES

O. F. Barnziger.

Mary Hickey.

INVENTORS

James S. Capen

Herbert W. Cheney

By their Attorney

Newell S. Wright

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES S. CAPEN AND HERBERT W. CHENEY, OF DETROIT, MICHIGAN; SAID CHENEY ASSIGNOR TO SAID CAPEN.

LOCK FOR BICYCLE-STANDS.

SPECIFICATION forming part of Letters Patent No. 634,441, dated October 10, 1899.

Application filed October 29, 1897. Serial No. 656,737. (No model.)

To all whom it may concern:

Be it known that we, JAMES S. CAPEN and HERBERT W. CHENEY, citizens of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Locking Devices for Bicycle-Stands; and we 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, which form a part of this specification.

Our invention has for its object certain new and useful improvements in locking devices for bicycle-stands; and it consists of the construction, combination, and arrangement of devices and appliances hereinafter described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation showing features of our invention. Fig. 2 is a side elevation. Fig. 3 is a view in section on the line 3 3, Fig. 1. Fig. 4 is a view in perspective of portions of the device, showing parts broken away. Fig. 5 is a detail view of the spring-actuated bolt D and related parts. Fig. 6 is a partial side elevation viewed from the side opposite that shown in Fig. 2, with parts of the case broken away. Fig. 7 is a detail view of the key.

We carry out our invention as follows:

In the drawings, A A represent two locking jaws or arms arranged to be opened when the wheel is engaged thereby, said jaws closing automatically about the rim and tire of the wheel to lock the bicycle and support it in position. Our invention aims to provide means for opening and locking said jaws, the locking mechanism being mainly contained or inclosed in a suitable case or receptacle B, which may be attached to a bicycle-stand (indicated at B′) constructed in any suitable manner.

B^2 denotes a door controlling access to the key (indicated at C) projecting outward in a key-chamber B^3, to which said door B^2 is the only means of access.

C′ is the keyhole of the locking device, to which access may be had when the chamber B^3 is opened.

The door B^2 is automatically closed by a spring *b* and when closed is automatically locked by a spring-actuated bolt D, the inner end of which projects into the chamber B^3 and engages a latch *b′* upon said door. The bolt D is actuated by a head D′, projecting to the exterior of the case or receptacle B, so as to be readily manipulated when free to move. The movement of said bolt D, however, is controlled by mechanism to be operated by any suitable device inserted into the slot, the slot being indicated at b^2, communicating with a runway b^3, at the base of which is located one end of a lever E, upon which lever the operating device (indicated at F in Fig. 4) rests primarily, the weight of the operating device tilting the lever E, which is fulcrumed, as at *e*. The lever E at its opposite end is provided with a head or analogous device, (indicated at *d*,) so as to prevent the manipulation of the bolt D and lock the bolt when the lever E is in normal position.

Within the receptacle or case B is located a rocking bar G, which may be journaled at one end in a portion of the case B and at the opposite end in a support or bracket *g*. An arm G′ is fixed in a transverse hole in the rocking bar G, said arm projecting at one extremity underneath the lever E, the opposite end of the arm projecting on the opposite side of the rocking bar and provided with a crank-arm *g′*. The cylinder C^2, into which the key C is fitted, is provided with an arm C^3, having a shoulder *c*, engaging under a lever H, fulcrumed at its opposite end, as shown at *h*, and attached intermediate its ends to a locking-bolt J, as indicated at *j*, so as to lift the bolt J when the lever H is lifted by the turning of the cylinder when the key is operated. The locking-bolt J is provided with an expanding-spring J′ and with a block J^2 at its lower end to engage between the rear ends of the clamping-jaws A A, as indicated in Fig. 1. Said jaws are fulcrumed intermediate their ends upon suitable pins or screws, as indicated at *a a*. Adjacent to their fulcrums the clamping-jaws preferably have a toothed engagement one with the other, as indicated at *a′*, the jaws being provided with a spring a^2 to automatically close the forward ends of the jaws. It will be perceived that

when the lever H is lifted by turning the cylinder C^2 the bolt J is withdrawn with its block J^2, permitting the jaws A A to be opened.

K denotes a spring, the upper end of which is arranged to engage over the adjacent end of the arm g', so as to hold the arm G' from tilting too far, and thereby preventing the lever E from descending, primarily, sufficiently to allow the lever-operating device to drop fully out of its runway, the lever-operating device being held in the runway until the upper end of the spring K is released from the arm g'. Normally the arm g' projects at a little distance below the upper end of the spring K sufficiently to permit the lever E to be forced downward to release the bolt D, the descent of the lever E being sufficient to release the bolt D, forcing the arm g' up into contact with the upper end of the spring K, such position being shown in Fig. 4 of the drawings. When, however, the bolt D has been withdrawn and the door B^3 opened and the key has been inserted in the cylinder C^2 to turn said bolster, the turning of the cylinder releases the upper end of the spring K from the arm g', permitting the lever-operating device to drop to its resting-place in the receptacle and altogether off from the lever E. To this end the spring K may be formed with a shoulder, (indicated at k.) Said shoulder may simply contact with the key C in such a manner that when the key is turned the shoulder will be pressed outward to release the upper end of the spring. The key may be locked in the cylinder, so as to be prevented from removal until an operating device has been placed in the slot in any suitable manner—as, for example, the rocking shaft G may be provided with a pin, (indicated at g^2,) one end of which normally projects into a slot formed in the key-cylinder, as indicated at c^2, preventing the removal of the key until the pin g^2 is released from said slot c^2. This will occur when the rocking shaft G is actuated by the lever E striking the adjacent end of the arm G', thereby rocking the shaft G and releasing the key.

L indicates the key-cylinder of an additional lock to lock the bolt D, the key-cylinder L being constructed also to receive the key C, the key-cylinder L being arranged, as hereinafter described, to withdraw the bolt D, so that the door B^2 may be opened.

It will be seen that when the operator wishes to release his wheel from the lock he inserts the key into the key-cylinder L, thereby opening the door B^2 to the chamber B^3, permitting him to insert the key in the cylinder C^2, thereby lifting the lever H and the bolt J with its block J^2, allowing the jaws A A to open and release the wheel. It will be obvious also that the rocking bar G having been restored to normal position the key is locked in the key-cylinder C^2 by means of the pin g^2 and cannot be removed until an operating device has been deposited in the slot. A bicycle may thus be securely locked so as to prevent any other than the party holding the key from releasing the bicycle. The device also insures the return of the key to the lock and locking the key therein, preventing the key from being carried off, while the device is in readiness for the next operation.

The case may readily be so constructed that the parts may be secured in place and the whole attached to the bicycle-stand B', so that all fastenings shall be out of reach.

The bolt D may be provided with a spring D^2. When the bolt D is to be operated by the tumbler L, the operating-spring D^2 is placed between the frame B and the end of the bolt, and the bolt is provided with a pin d^3 just above the opening through which the end of the tumbler extends. Upon the tumbler is formed an arm which engages with the pin d^3 when the tumbler is turned by means of its key. The bolt D is provided with a shoulder d' upon its upper edge, with which the arm D^4 upon the end of the spindle d^3 engages. Upon the spindle is placed a spring d^2, and upon the outer end of the spindle is placed the head D', by means of which the spindle is drawn outward when the lever E has its rear end depressed, so as to raise the head d from between the arm D^4 and the boss on the inner side of the frame. When the head d is raised, the bolt can be operated by drawing out the spindle; but the bolt D can be operated with the proper key at any time by means of the tumbler, as shown in Fig. 5.

What we claim as our invention is—

1. A suitable inclosing case, two locking-jaws pivoted therein, and provided upon their inner sides with teeth which engage with each other, and a spring for connecting the ends of the two jaws for causing them to automatically close, combined with the vertical spring-actuated bolt, which has its lower end to catch between the upper ends of the jaws and to lock them in a closed position, a pivoted lever to which the vertically-moving bolt is pivoted, a normally inaccessible mechanism for operating the pivoted lever, and suitable means for giving access to the operating mechanism, substantially as shown.

2. A suitable inclosing case, two locking-levers which are connected so as to move simultaneously, a spring connecting their upper ends for the purpose of causing their lower ends to close, a vertically-moving bolt which has its lower end to catch between the upper ends of the jaws, and a pivoted lever to which the vertically-moving bolt is pivoted, combined with the key-cylinder C^2 which is normally inaccessible and provided with the arm C^3 which engages the pivoted lever H, a rock-shaft, means for connection between this shaft and the key-cylinder to dog the key, an arm fixed transversely to the rock-shaft, the lever E operating the arm fixed to the rock-shaft and provided with a head at its outer end, and means, controlled by this head, for giving access to the nor-

mally inaccessible key-cylinder C^2, substantially as described.

3. The inclosing case, a normally inaccessible key-cylinder C^2 placed therein, a rock-shaft journaled therein and provided with an arm G′ which extends transversely to the rock-shaft, the lever E pivoted at right angles to the arm G′ and provided at its outer end with a head, and means, controlled by the head upon the end of the lever, for giving access to the normally inaccessible key-cylinder, combined with the arm C^3 connected to the key-cylinder, and means for connecting the key-cylinder and the rock-shaft to dog the key; the lever which extends transversely across the case, and the vertically-moving rod and pivoted, spring-actuated jaws which are connected so as to move simultaneously, substantially as set forth.

In testimony whereof we sign this specification in the presence of two witnesses.

JAMES S. CAPEN.
HERBERT W. CHENEY.

Witnesses:
N. S. WRIGHT,
MARY HICKEY.