(No Model.)

J. C. BARR.

LOCKING DEVICE FOR BICYCLES.

No. 604,452. Patented May 24, 1898.

Fig. 1.

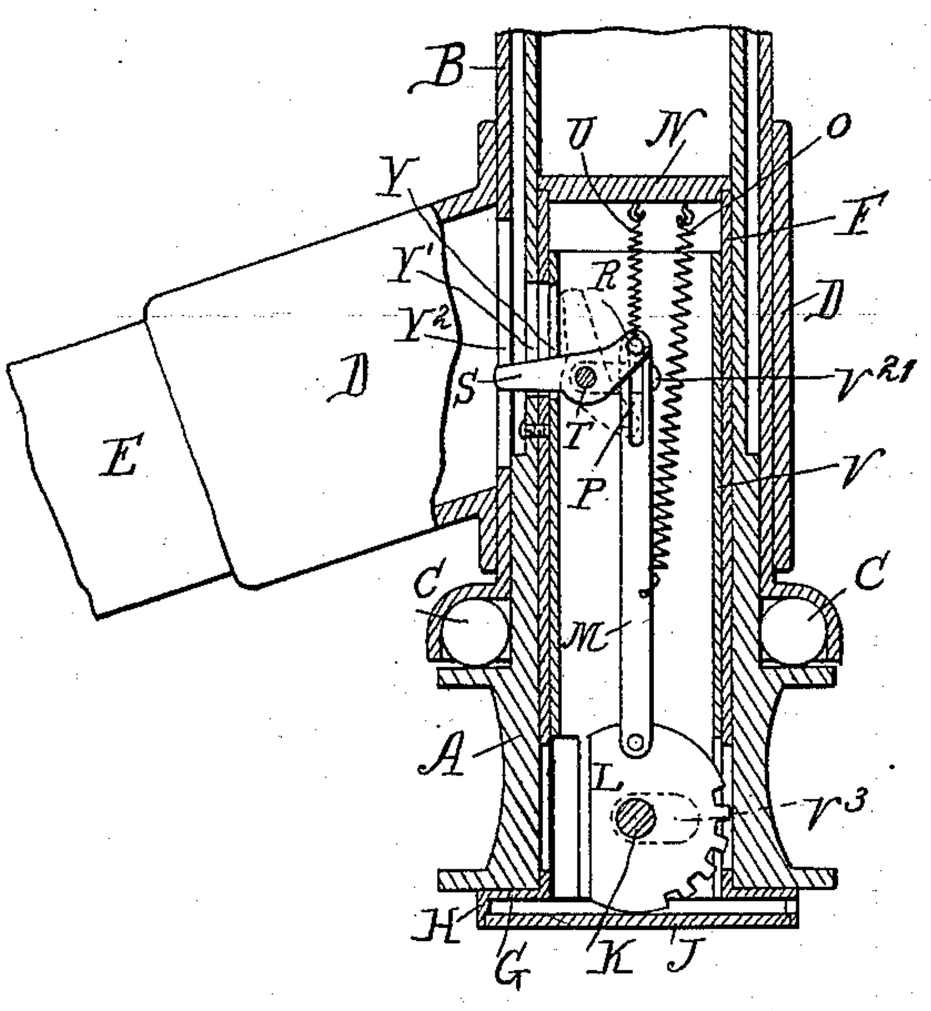


Fig. 2.

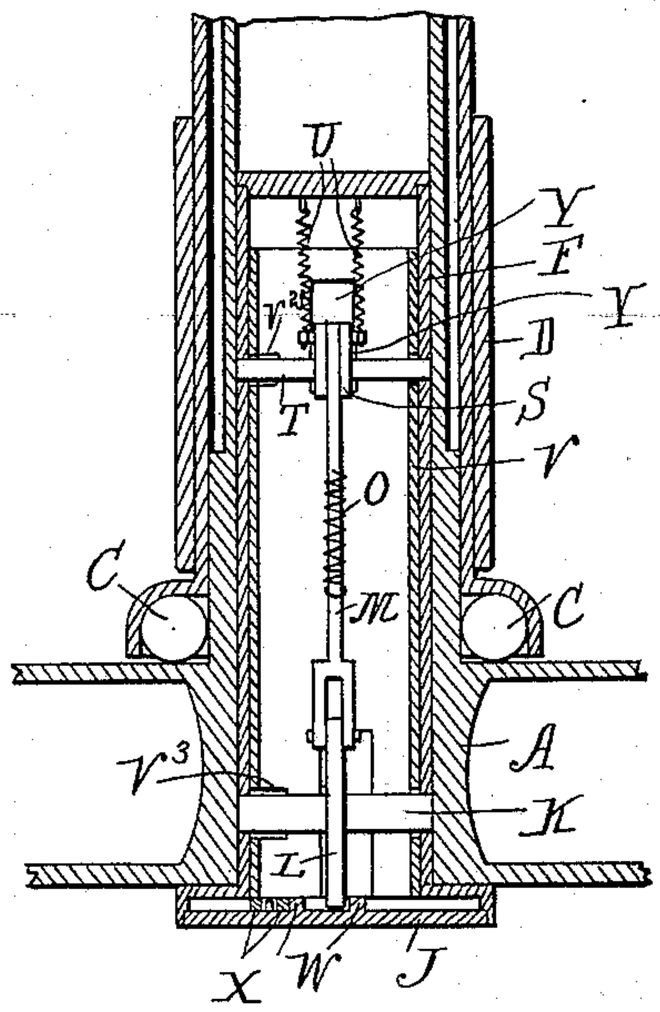


Fig. 3.

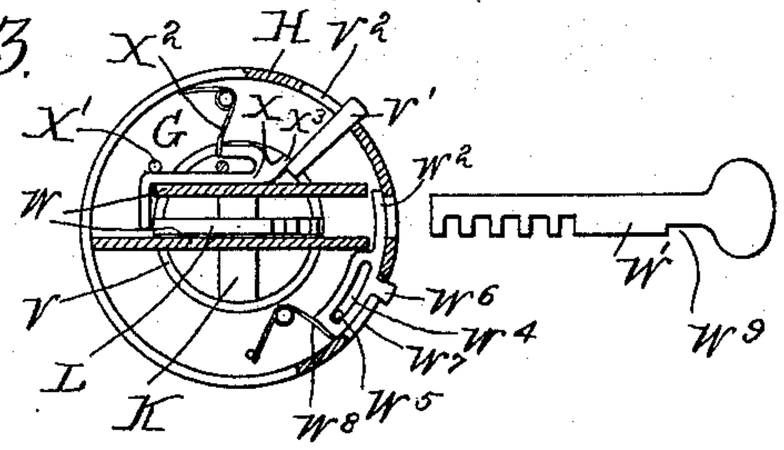


Fig. 5.

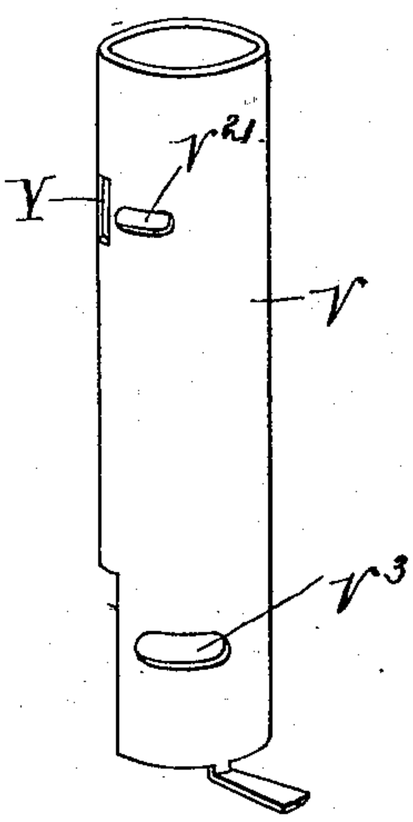
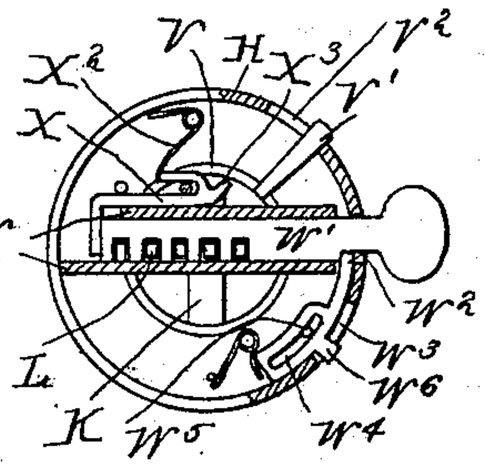


Fig. 4.



Witnesses.
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UNITED STATES PATENT OFFICE.

JOHN C. BARR, OF CHICAGO, ILLINOIS.

LOCKING DEVICE FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 604,452, dated May 24, 1898.

Application filed June 8, 1896. Serial No. 594,673. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. BARR, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain Improvements in Locking Devices for Bicycles, of which the following is a specification.

My invention relates to bicycle-locks, and has for its object to provide a lock which shall be easy of application to ordinary completed bicycles and which shall not disfigure the same.

The object is further to provide various improvements and adjustments hereinafter more particularly set out. It is illustrated in the accompanying drawings, wherein—

Figure 1 is a vertical section through my device. Fig. 2 is a vertical section through the opposite direction; Figs. 3 and 4, details of the key and key-controlling mechanism; Fig. 5, a detail of the inner drum.

Like parts are indicated by the same letter in all the figures.

A is the forked stem, and B the head, of the bicycle, which is supported by ball-bearing C on the stem, the stem rotating within the head.

D is the coupling, which connects the head and the tube E of the frame.

F is the outer cylinder or case of my locking device, having the lower flange G, whereby it is secured to the stem, and the annulus H, with the cover J to form the key-chamber. Pivoted in the lower end of the case by means of the pin K is the part gear L, which may extend into slots in the side of the case. It has the pitman M, which is held secured to the top of the case N by the spring O, and has the slot P, in which plays the pin R of the bolt S, pivoted at T. This bolt is secured to the top by the spring U.

V is the inner case or drum. On the cover J are the key-guides W W for the key W′, which enters a slot W^2 in the rim H.

W^3 is a key-lock arc-shaped to slide on the inside of the rim and provided with a slot W^4 to receive the pin W^5 and a thumb-piece W^6, which projects through the slot W^7 in the rim and associated with a spring W^8.

W^9 is a notch on the key to receive the end of the key-lock W^3.

V′ is an arm on the bottom of the drum V, and it projects through a slot V^2 in the rim H.

X is a drum-lock, shaped as shown, adapted to slide along one of the guides W, held in position by the pin X′ and under pressure from the spring X^2. Its point X^3 is adapted to engage either side of the arm V′. The drum is slotted at Y, the forked stem at Y′, and the head at Y^2, the slots being opposite the openings in the tube E and coupling D when the parts are in their normal positions to be locked.

I do not of course wish to be limited to the specific form or construction shown or to the exact details or precise features, and, indeed, some of the elements may be dispensed with without abandoning the others, and all or part of my invention may thus be utilized in various devices differing somewhat one from the other.

The cylinder V is provided with the slots V^{21} and V^3, so that it may turn, said slots being associated with the pins T and K, respectively. The wheel is virtually a cam, being cut off or mutilated on one side, as indicated in Fig. 1. If not so made, the slot in the link W should be such as to permit the wheel to rotate therethrough a certain proper distance.

The use and operation of my invention are as follows: When the parts are in the position shown in Fig. 1, the forked stem is locked, so as to bring the wheels into different planes and thus prevent the use of the bicycle. Bicycles as ordinarily constructed have everything that is shown in my drawings, except the contents of the cylinder F and except the slots in the head and stem. The slots therefore in the head and stem can be made in the bicycle, and it is only necessary to have a lock of the proper diameter to be received. It is inserted and is preferably secured to the stem by screws, as indicated, or in any desired manner. The only projecting portion of the lock is that which is seen below the stem and which assumes an ornamental form. To unlock the bicycle, the key is inserted into position, as shown in Fig. 4, its teeth engaging the cogs of the pinion L, turning it, drawing down the pitman M, and bringing the bolt into the position shown in dotted lines, whereupon the parts are free to rotate one upon the

other. The parts having been turned into position where the slots Y′ and Y^2 do not register, the key may be withdrawn, and the slot P will permit this without interfering with the parts. When now the parts are turned so as to be ready for locking, the bolt will spring into position. When the key is withdrawn, the key-lock W^3 slips into the position shown in Fig. 3, so as to close the key-opening. It is restored to the position of Fig. 4 to admit the introduction of the key by pushing on the thumb-piece W^6. When the key is inserted, it is locked in position by the engagement of the end of the key-lock with the notch W^9. Thus when the key is in position the bicycle is left permanently in an unlocked condition. To arrange it so that the key may be removed and the bicycle still be left unlocked, I have provided the interior drum, which may be rotated by means of the handle V′ and may be locked in either position, depending upon its relation to the point X^3. When it is left as shown in Fig. 3, the device is left unlocked and the drum guards the bolt-slots, and the bolt-slots can only be freed by forcing in the key, thus freeing the arm V′. If it then be moved about the opposite side of the point X^3, the parts may be released, whereupon the drum will be locked in position, so as to uncover the slot.

I claim—

1. The combination of a bicycle head and stem, each provided with an aperture with a bolt-controlling device within such stem and its bolt in proper relation to said aperture, a cylindrical shield to control such apertures, a lock for such shield and means whereby such lock is controlled by the keys so as always to free the shield when the key is introduced.

2. The combination of a bicycle head and stem, each provided with an aperture with a bolt-controlling device within such stem, and its bolt in proper relation to said aperture, a cylindrical shield to control such apertures, a lock for such shield and means whereby such lock is controlled by the key so as always to free the shield when the key is introduced, and a frame portion outside the apertures in the head and stem to conceal them and the bolt and prevent access thereto.

3. In a bicycle-lock, the combination of the head and stem with a bolt-controlling device within the stem and adapted to lock the head and stem together, apertures in the stem adapted to receive said bolt, a transverse key-chamber below the stem, a reciprocating key adapted to move therethrough and connecting means whereby the reciprocation of said key operates the bolt.

4. In a bicycle-lock the combination of a locking device inserted in the stem with a key-chamber below the stem, and a spring-lock to lock the key in and to close the key-aperture when the key is removed.

5. In a bicycle-lock, the combination of a slotted casing containing mechanism to be received in the stem with a cylindrical shield for the slot in said casing, a lock to secure the shield in its operative position and a key to control said lock.

6. A lock for bicycles, comprising a pivoted bolt, bolt-receiving apertures in the stem and head opposite a frame-tube of the bicycle, a controlling device for said bolt concealed within the stem of the bicycle, a connecting-rod pivotally connected with said controlling device and provided with a slot, a projecting part on said bolt engaging said slot, a key-chamber near said controlling device, said controlling device projecting into said key-chamber so as to be engaged by the key.

7. A bicycle-lock, comprising a pivoted locking-bolt within the stem and adapted to pass into an aperture in the stem and head and lock them together, a spring-actuated arm within said stem and forming part of said bolt, a toothed plate pivotally connected with said arm, a key-chamber into which said toothed plate projects, the parts so positioned that when the key is inserted in said key-chamber it engages said toothed plate and actuates the bolt.

8. A bicycle-lock comprising a cylindrical case or frame adapted to be received in the lower part of the stem, a key-chamber at the lower part of such stem, a locking-bolt within said stem and adapted to pass through an aperture in the stem and head and lock them together, an actuating device for said bolt projecting into said key-chamber, said bolt normally in a locked position, the parts so constructed that when the key is inserted in said key-chamber, the bolt is held in an unlocked position and a connecting device for said key contained within said case, and adapted to engage said key and hold it in the lock.

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Witnesses:
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