(No Model.)

# C. G. DIETERICH.

## BICYCLE.

No. 559,368. Patented May 5, 1896.

Fig. 2.

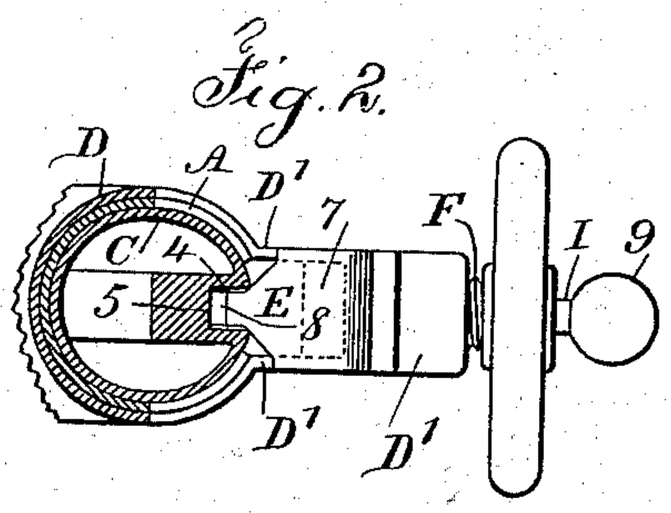


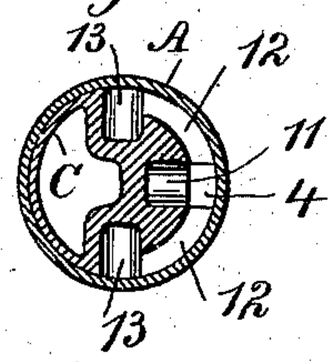

Fig. 1.




Fig. 3.




Fig. 4.




Witnesses

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# UNITED STATES PATENT OFFICE.

CHARLES G. DIETERICH, OF BROOKLYN, NEW YORK.

## BICYCLE.

SPECIFICATION forming part of Letters Patent No. 559,368, dated May 5, 1896.

Application filed January 17, 1896. Serial No. 575,824. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES G. DIETERICH, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Bicycles, of which the following is a specification.

The object of the present invention is to allow for the raising or lowering of the handle-bar with facility, so that the rider can adapt the same to his posture without stopping. In my application, Serial No. 566,305, filed October 21, 1895, a latching device is represented for accomplishing the aforesaid object.

In my present improvement the latch and the device for operating the same are applied at the head of the pivotal tube that receives the fork of the front wheel and also the handle-bar tube, so that such latching device can be easily applied to bicycles already constructed and the handle-bar tube alone needs to be changed, and I combine along with the latch a clamping device for holding the handle-bar tube rigidly in the pivotal tube of the fork.

In the drawings, Figure 1 is a vertical section showing a portion of the pivotal tube of the fork with the present improvements applied. Fig. 2 is a sectional plan at the line 2 2. Fig. 3 is a similar plan at the line 3 3, and Fig. 4 is a sectional plan at the line 4 4.

The pivotal tube A, that is connected at its lower end to the fork of the front wheel, is received into the front tube of the frame, and the ball-bearings for such pivotal tube and the connections to the frame may be of any desired character. The handle-bar B is permanently connected to the tube C, which is adapted to slide freely within the pivotal tube A, and this handle-bar tube C has a longitudinal groove or slot 4 with inclines 5, forming teeth that act like a ratchet, or holes may be substituted for such inclines, they being at the inner or bottom surface of the groove 4.

The band D is applied around the upper end of the pivotal tube A and connected thereto in any desired manner. In some instances it may be screwed upon the thread usually provided around the upper end of the pivotal tube. I have, however, represented a screw 6 as passing through the band and into a hole in the pivotal tube A for connecting the band to the tube and for allowing its disconnection for repairs. There is a lateral extension D′ from this band forming a rectangular recess for the clamping-key E. When this lateral extension is at the side of the pivotal tube, it will usually be at right angles to the pivotal tube; but when it is at the rear, as shown in the drawings, the lateral extension may be horizontal and hence at an angle to the pivotal tube, because such pivotal tube is usually inclined.

The clamping-key E is provided with upper and lower flanges 7, setting over the top and bottom edges of the lateral extension D′, so as to allow the clamping-key to be moved backward and forward, but to retain such clamping-key in position, because it cannot be removed until after the handle-bar tube has been drawn out from the pivotal tube, and the surface of the key next to the handle-bar tube is made with a rib or feather 8 to engage the groove 4 in the handle-bar tube, and at each side of the rib 8 the metal forming the face of the clamping-key is inclined or V-shaped, so that the rib 8 may fit the groove 4 loosely; but when the clamping-key is pressed toward the handle-bar tube the inclined faces at the sides of the rib 8 will pass into the groove and prevent any looseness of the parts, and at the same time a pressure by the clamping-key against the handle-bar tube holds such handle-bar tube rigidly within the pivotal tube.

In order to set up the clamping-key E when desired, a screw F is passed through the lateral extension D′ of the band D and acts against the rear surface of the clamping-key E, so that such key can be forced against the tube C, or the clamping-key can be drawn back, so that the rib 8 is clear of the tube C to allow this tube C to be turned within the pivotal tube A or be withdrawn, if desired; and I remark that it is advantageous to stop off the groove 4 near its lower end, so that the rib 8 prevents the handle-bar tube being drawn out until the clamp-key E has been drawn back.

The parts thus far described alone may be made use of, because by loosening the screw F the handle-bar and its tube can be raised or lowered while in use, the rib 8 causing the

handle-bar tube and pivotal tube to turn together, and by tightening the screw F the handle-bar and its tube can be instantly held at the position to which it may be raised or lowered.

It is often more convenient to employ a latch-bolt in addition to the parts before mentioned, which latch-bolt is shown at I as passing through the clamp-key E and the screw F, and there is a head 9 at the back end of the latch-bolt for withdrawing the same and a spring 10 around such latch-bolt for projecting the end of the latch-bolt into contact with the inclined teeth 5, and this spring 10 yields as the inclines of the teeth act against the end of the bolt in raising the handle-bar and its tube, and the spring projects the bolt to hold the teeth, and by drawing back the latch-bolt I the handle-bar tube can be depressed.

The hole 11 in the handle-bar tube C can receive the end of the latch-bolt I when the handle-bar tube has been drawn up to the extreme point of elevation, and the lateral grooves 12 terminate at the holes 13, so that after the handle-bar and tube have been drawn up the handle-bar can be turned around into line, or nearly so, with the front wheel, the end of the latch-bolt I passing into one of the grooves 12, and the parts are held in position by the latch-bolt entering one of the holes 13. By this arrangement the handle-bar tube can be raised or lowered and the handle-bar can be turned around, so that the parts occupy less space when the bicycle is stood aside and out of use.

In the construction shown it is advantageous to make the screw 6 sufficiently large for the latch-bolt to be slipped out endwise through the screw-hole when such screw and the handle-bar tube have been removed to facilitate the separation of the parts when they have been taken apart.

I claim as my invention—

1. The combination with the pivotal tube and handle-bar, of a tube connected to the handle-bar and adapted to slide freely in the pivotal tube and grooved longitudinally, a clamp-key having inclined sides and entering such groove for guiding the handle-bar and its tube as raised or lowered, and means for pressing the clamp-key into the groove of the handle-bar tube, substantially as set forth.

2. The combination with the pivotal tube and handle-bar, of a tube connected to the handle-bar and adapted to slide freely in the pivotal tube and grooved longitudinally, a clamp-key entering such groove for guiding the handle-bar and its tube as raised or lowered, a band surrounding the pivotal tube and recessed to receive the clamp-key and a screw for acting upon such clamp-key, substantially as set forth.

3. The combination with the pivotal tube and handle-bar, of a tube connected to the handle-bar and adapted to slide freely in the pivotal tube and grooved longitudinally, a clamp-key having a rib and inclined adjacent surfaces entering such groove for guiding the handle-bar and its tube as raised or lowered, a band surrounding the pivotal tube and recessed to receive the clamp-key and a screw for acting upon such clamp-key, substantially as set forth.

4. The combination with the pivotal tube and handle-bar, of a tube connected to the handle-bar and adapted to slide freely in the pivotal tube and grooved longitudinally, a clamp-key entering such groove for guiding the handle-bar and its tube as raised or lowered, means for pressing the clamp-key against the handle-bar tube, a latch-bolt and spring for projecting the same, the end of such latch-bolt engaging teeth upon the handle-bar tube or entering holes in the same, substantially as set forth.

5. The combination with the pivotal tube and the handle-bar, of a handle-bar tube grooved longitudinally and having a lateral groove at the lower end and openings, a band around the pivotal tube having a lateral extension, a clamp-key having top and bottom flanges and adapted to hold within the lateral extension, there being a rib on the face of the clamp-key engaging the groove in the handle-bar tube, a screw for acting upon the clamp-key, a latch-bolt passing through the clamp-key and the screw and provided with a head and a spring to act upon the latch-bolt to project its end into either of the holes in the handle-bar tube that may be brought into line with such latch-bolt, substantially as set forth.

Signed by me this 15th day of January, 1896.

CHARLES G. DIETERICH.

Witnesses:
GEO. T. PINCKNEY,
S. T. HAVILAND.