

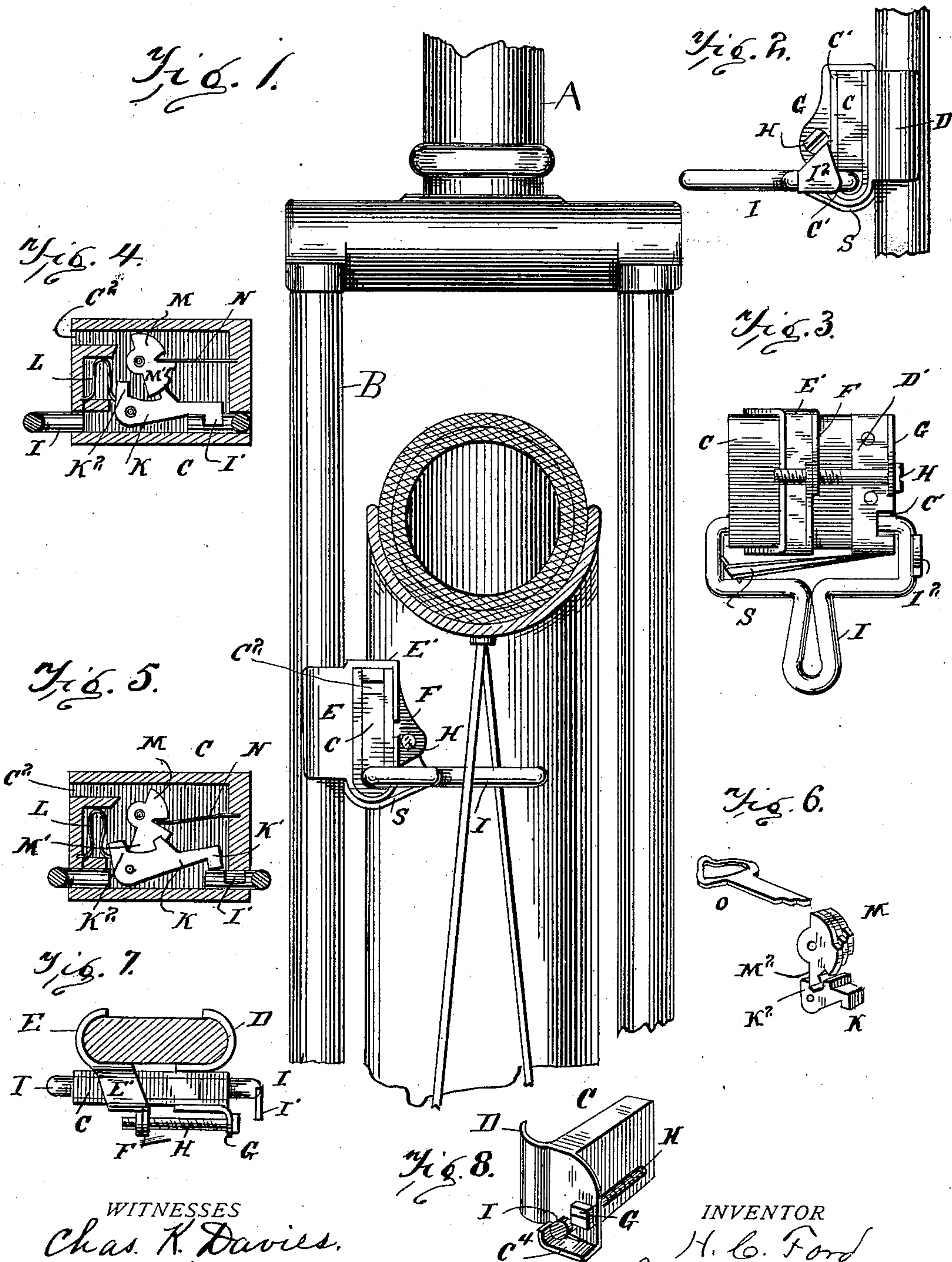
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Patented Oct. 31, 1899.

H. C. FORD.
BICYCLE LOCK.

(Application filed Apr. 7, 1899.)

(No Model.)



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BICYCLE-LOCK.

SPECIFICATION forming part of Letters Patent No. 636,128, dated October 31, 1899.

Application filed April 7, 1899. Serial No. 712,159. (No model.)

To all whom it may concern:

Be it known that I, HANNIBAL C. FORD, a citizen of the United States, residing at Cortland, in the county of Cortland and State of New York, have invented certain new and useful Improvements in Bicycle-Locks, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to improvements in bicycle-locks.

The object of the invention is to improve that class of bicycle-locks in which a bail, hasp, or stop-piece is attached to a fixed part 15 of the machine, as the frame, and may be turned out of the way or may be turned and locked in the way of a moving part, as the wheel or spokes of the wheel, and thus prevent the movement of such movable part; 20 and the improvements embraced in the present invention consist in certain details of construction and combinations of parts, as hereinafter described and claimed.

Figure 1 is an elevation of the lock as applied to the frame of a bicycle and having the stop projecting between the spokes of a wheel, only so much of the wheel and frame being shown as is necessary to an understanding of the operation of the invention. Fig. 2 is a 25 reverse elevation of the lock in its obstructive position, showing also a part of the frame. Fig. 3 is an elevation of plan of the lock and clamping mechanism by which the lock is held to the frame. Fig. 4 is a view of the 30 lock with part of casing removed, showing bail, hasp, or stop in section in the locked position thereof. Fig. 5 is a view similar to Fig. 4, but with stop in unlocked position. Fig. 6 is a perspective of key, tumblers, and 35 dog. Fig. 7 is an end view of lock and clamp applied to a section of frame. Fig. 8 is a modification in perspective of casing, with bail or hasp in section.

Let A indicate any part of the frame of a 45 bicycle, as the head or upright, and B one of the bars of said frame, as a bar of the fork, to which the lock may be attached. The casing C of the lock is preferably rectangular, and a clamping-jaw D is permanently attached 50 to one end of the casing. This jaw is simply a

of the tube or rod of the frame, to which the lock is to be attached.

A second jaw E has a socket E' with a mortise therein, through which the body of the 55 lock-casing passes. The socket is continued at the opposite side of the lock from jaw E in form of a flange F, which flange has a screw-threaded hole therein. A flange G on the lock-casing has a hole therein through which 60 screw H projects, the screw being free to turn in flange G, but engaging the thread in the flange F. Thus by turning screw H the clamping-jaws may be drawn nearer to or forced farther from each other, the jaw E slid- 65 ing relatively to the lock-casing. The jaws may thus be made to firmly embrace the usual form of frame-piece and can be so formed as to embrace almost any form of frame. 70

The lock-casing C may be strengthened by a bar D', which is connected to the jaw D. In fact, the two jaws may be substantially alike in construction, but one of them, as D D', is permanently secured to the lock-casing by 75 rivets or otherwise, while the other may move relatively to the casing.

The casing C has a recess C' in one side thereof. A bail or hasp I has its two ends 80 turned into holes in the ends of the lock-casing. (See Figs. 4 and 5.) This bail or hasp forms the piece or stop, which may be turned between the spokes of the wheel, as shown, by rocking on the pivots formed by the inturned ends of said bail or hasp. 85

In addition to the rocking movement of bail or hasp I, said bail has a sliding movement relatively to the casing, which sliding movement can only take place when the bail is turned to near its locking position. When 90 turned down, as in Fig. 5, the loop of the bail cannot enter recess or notch C'; but when rocked out, as in Figs. 1, 2, and 4, the bail can be slipped along so that its side loop will enter said notch C', one of the inturned ends of the loop entering farther into the casing and the other retiring. 95

One of the inturned ends of loop, hasp, or stop I has a notch I', with which the dog K engages to lock the stop. This dog K is piv- 100 oted in the casing and has a hook K', which is normally forced into engagement with the

notch I' by a spring L when free to enter said notch. The dog is held in the notch I' by a projection on the back of dog K bearing against the tumblers. This projection on the dog enters a notch in tumblers M, as indicated in Fig. 5, when said tumblers are rocked by the key.

A spring N tends to rock all the tumblers M to such position that a segmental shoulder M' at the bottom of the tumbler or tumblers bears on the projection at the back of the dog; but when the key O is entered into keyhole C² the end of the key bears against the tumblers M and rocks them until the rear shoulder M² of one or more of the tumblers encounters the projection K² of the dog, thus rocking the dog to lift it out of engagement with notch I' and holding it up, as indicated in Fig. 5.

There may be as many tumblers M as desirable, the key and tumblers being made to correspond in usual manner, so that the full insertion of the key into the keyhole rocks all the tumblers and lifts the dog. When so lifted, the hasp or hook may be pushed sideways, as in Fig. 5, and will then hold up the dog, and when pushed sideways may be turned down, as in Fig. 3. A light spring S, shown as a rubber spring outside the casing, tends to rock and hold the loop or stop I down or up out of the way of the wheel when "unlocked." When turned out so as to be "locked" or obstructive and slid along so that the loop enters recess C', the dog K falls into notch I under the impulse of spring L, and at the same time the tumblers are rocked by their springs N to hold the dog down, as indicated. The loop being moved so that a part of its body is in the recess in the lock-casing when in locking position is much strengthened by such location without depending on the locking-dog to resist the strains in that direction.

One or more sides of the head or screw H have a flat bearing. A projection I² on the bail or hasp is moved into close proximity to this flat surface when the bail is in locking position, so that the screw cannot be turned. The locking of the bail therefore locks the screw against withdrawal, so that the clamp cannot be released to remove the lock from the frame while the bail or stop I is projected.

It will be apparent that the form of projection on the bail and the shape of the screw-head may be changed, so long as the one prevents the other from being withdrawn at unauthorized times; also that the proportions and dimensions of parts may vary according to the circumstances of the case. An important part of the invention is that when the bail or stop is in locked position it shall be braced by direct engagement with the lock-casing and depends on the locking-dog only to prevent movement in another direction.

Fig. 8 shows a modification in which the casing C is turned out at C⁴, thus forming an abutment against which the hasp I may rest when turned down. The locking-recess which retains the bail or hasp will in this case be the space between this turned-out flange C⁴ and the head of screw H. From this it will be seen that the generic idea of my invention is that the bail or hasp shall when in locked position rest against a fixed part of the casing and can only be swung from such locked position by first moving lengthwise unless the lock is broken.

The term "recess" as applied to the lock-casing is therefore used in a generic sense and is not limited to a notch of particular form.

What I claim is—

1. In a bicycle-lock, the lock-casing, a fixed clamp-jaw and a flange projecting therefrom, and a second movable clamp-jaw embracing the lock-casing and drawn toward the first jaw by a screw passing through a flange in the casing, all combined substantially as described.

2. In a bicycle-lock, a casing and means for holding it to the frame, said casing having a recess therein, a pivoted and sliding loop forming the locking-stop, said loop entering the recess in the casing when in locking position, and a locking-dog engaging the loop, all combined substantially as described.

3. In a bicycle-lock, the casing with a notch therein, the pivoted loop having its intumed ends in the casing and its body in position to slide and turn into said notch in the casing, and means for locking said loop, all combined substantially as described.

4. In a bicycle-lock, the sliding and turning loop, the locking-dog engaging a notch in said loop when in locked position, and the tumblers having engagement with said dog to lift the same under the impulse of the key, all combined substantially as described.

5. In a bicycle-lock, the notched casing, the notched sliding and swinging loop engaging the notched casing as described, the locking-dog engaging the lock in the loop, and the pivoted tumblers engaging a projection on the dog to lift the same, all combined substantially as described.

6. In a bicycle-lock, the notched casing, the sliding and swinging loop and a spring for turning said loop to one side, the locking-dog to engage a notch in said loop, and the tumblers engaging said locking-dog, all combined substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HANNIBAL C. FORD.

Witnesses:

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