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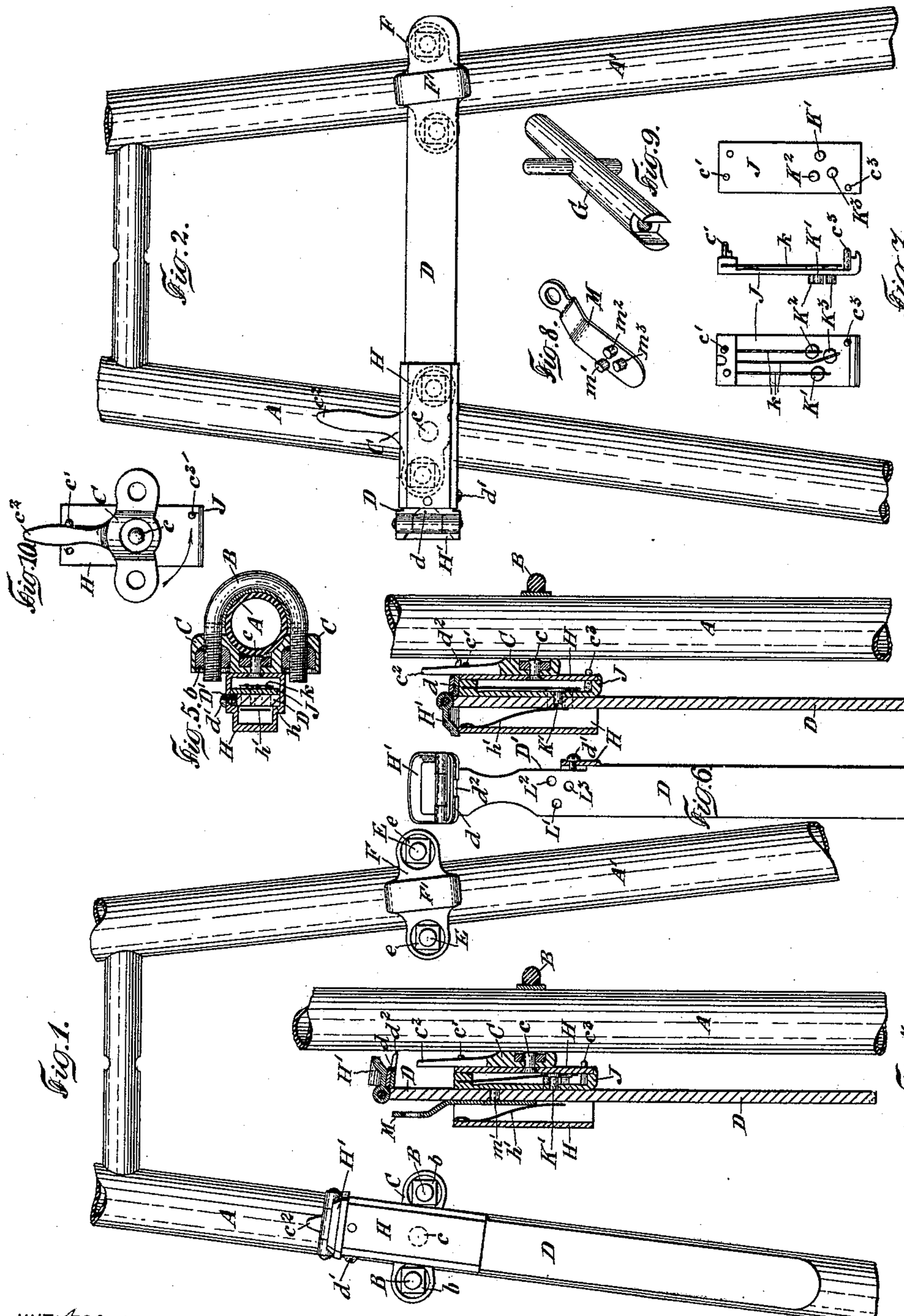
M. BADONI.

LOCK FOR BICYCLES.

(Application filed Aug. 11, 1898.)

(No Model.)



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LOCK FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 616,051, dated December 13, 1898.

Application filed August 11, 1898. Serial No. 688,387. (No model.)

To all whom it may concern:

Be it known that I, MASSIMILIANO BADONI, a citizen of the Kingdom of Italy, residing at Geneva, in the Republic of Switzerland, have invented certain new and useful Improvements in Locks for Bicycles, of which the following is a specification.

The object of the present invention is to prevent the use of cycles by the employment of a lock which after it has been closed cannot be opened except by the possessor of the key for said lock. A safety-lock attaining this object is in accordance with my invention adapted to be applied to the frame of any cycle in such a manner as to have its bolt out of action while the machine is used and so that its bolt may be placed between the spokes of the driving-wheel of the cycle when the latter is to be locked.

In the accompanying drawings, Figure 1 is a front elevation of a portion of the frame of a cycle provided with my invention, the lock being opened. Fig. 2 is a similar elevation, the lock being closed. Fig. 3 is a longitudinal section of one portion of the lock in which the bolt is open. Fig. 4 is a longitudinal section of one portion of the lock in which the bolt is closed. Fig. 5 is a transverse section of the lock. Fig. 6 illustrates separately the bolt of the lock. Fig. 7 illustrates the plate in the guide-box of the lock, shown from the top, in side elevation, and from below. Fig. 8 is a perspective view of the key for opening the lock, and Fig. 9 is a perspective view of the tool for turning the screws which fasten the lock to the frame of the machine.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A A′ is a forked portion of that part of the frame of the machine in which the wheel is arranged, the rotation of which wheel is to be prevented. To one of the forks or branches A of the said forked portion of the frame there is fixed, by means of a bridle B, a member C, said bridle and member C forming a clip, and to the other fork or branch A′ of the forked portion there is fixed, by means of a bridle E, a member F, carrying a staple F′, said bridle E and member F also forming a clip.

The bridles B and E are fixed by means of screw-nuts *b* and *e*, which are sunk in depressions of the members C and F, and said screw-nuts can only be acted upon by means of the key G, Fig. 9, when the lock is opened, as shown in Fig. 1—that is to say, when the bolt of the same is not in its closed but in its opened position, as is more clearly shown in Fig. 3. When the bolt is closed, as in Fig. 2, the said screw-nuts *b* and *e* are covered over by the bolt D. To the clip member C there is fixed, by means of a pivot *c*, a guide-box H, in which the bolt D is arranged so as to slide longitudinally. If the guide-box H is swung on its pivot *c*, fixed on the fork A of the frame, and if the bolt D is at the same time slid into this guide-box, the said bolt can be brought from the position shown in Fig. 1, in which it does not prevent the rotation of the wheel, to the position indicated in Fig. 2, in which it does prevent the rotation of the wheel by extending between the spokes and engaging into the staple F′, fixed to the fork A′ of the frame.

The oscillation of the box H on its pivot *c* is limited by abutment-screws *c′* c^3, which project from its back and are adapted to engage a projection c^2 on the clip member C, Fig. 10, and the sliding of the bolt D in the box H is limited on the one hand by the hooked end *d*, which is intended to engage the projection *c′* of the clip member C, and on the other hand by a screw *d′*, fixed to said box H and engaging an out-cut D′ of the bolt D, Fig. 6. The hook *d* has a notch d^2, which receives the projection c^2 of the clip member C when the bolt is placed into non-operative position, as shown in Fig. 1.

In the guide-box H is arranged a plate J, Fig. 7, having a certain number of pins K′ K^2 K^3, each acted upon by a spring *k*, said springs tending to normally project the pins beyond the surface of the said plate J, along which the bolt D slides. The latter is provided with a certain number of holes L′ L^2 L^3, the relative position of which corresponds with the relative position of the pins K′ K^2 K^3, and into which holes the latter engage when the bolt D is slid into its locking position, as in Figs. 4 and 5.

M, Fig. 8, indicates a key for opening the lock by disengaging the pins K′ K^2 K^3 from

the bolt D and is provided with screws or pins $m' m^2 m^3$, the relative position of which exactly corresponds with that of the holes L and pins $K' K^2 K^3$. The key M is smaller than the bolt D in order to pass into that portion of the box H above the shoulder *h*, Fig. 5, which positively guides the bolt and prevents lateral movement of the same. A spring *h'*, arranged in the smaller or key-receiving portion of the box H and which is stronger than all the springs *k* combined, presses the key M against the bolt D, as shown in Fig. 3, and consequently when the key M arrives into such position as that its screws or pins are placed in register with the movable pins $K' K^2 K^3$ the said spring *h'* causes the pins or screws of said key to press the pins $K' K^2 K^3$ out of the holes $L' L^2 L^3$ of the bolt D. The bolt D may now again be moved longitudinally into the box H, as seen in Fig. 3, the key M moving with the said bolt D. A cover H', hinged to the bolt D, is arranged to close over the box H, so as to shut the bolt in when it is out of use.

This form of safety-lock offers the great advantage that it can be changed in various forms as to its key without permitting one key to be used in place of another, even if the actuating pins or screws on said key be moved only a short distance apart from those of any other similar keys.

Having thus fully described my invention, I claim—

1. In a lock for cycles, the combination with a part of the frame, within which the driving-wheel turns, of a clip secured to the frame at one side of the driving-wheel, a guide-box pivoted to the clip, a longitudinally-movable bolt in said box, locking devices in said box for engaging said bolt, and means at the other side of the frame wherewith the outer end of said bolt is adapted to coöperate for preventing the turning of the driving-wheel, substantially as set forth.

2. In a lock for cycles, the combination with a clip adapted to be secured to the frame of the cycle, of a guide-box pivoted to the said clip, a sliding bolt in said box and locking devices in said box for engaging said bolt for locking the same in operative position, substantially as set forth.

3. In a lock for cycles, the combination with a clip adapted to be secured to the frame of the cycle, of a guide-box pivoted to said clip, said guide-box being provided with a laterally-extending projection and abutments on said box adapted to strike said projection, a sliding bolt guided in said box and locking devices in said box for engaging said bolt and for locking the same in transverse position, substantially as set forth.

4. In locks for cycles, the combination with a clip adapted to be secured to the frame of the cycle, of a guide-box pivoted to said clip, a plate in said box provided with a series of holes, spring-actuated pins guided in said holes, and a sliding bolt in said box provided with holes also engaged by said pins for locking the said bolt in transverse position, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

MASSIMILIANO BADONI.

Witnesses:
E. IMER SCHNEIDER,
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