No. 614,604. Patented Nov. 22, 1898.

F. M. BELL.

BICYCLE LOCK.

(Application filed Oct. 5, 1897.)

(No Model.)

Fig. 1.

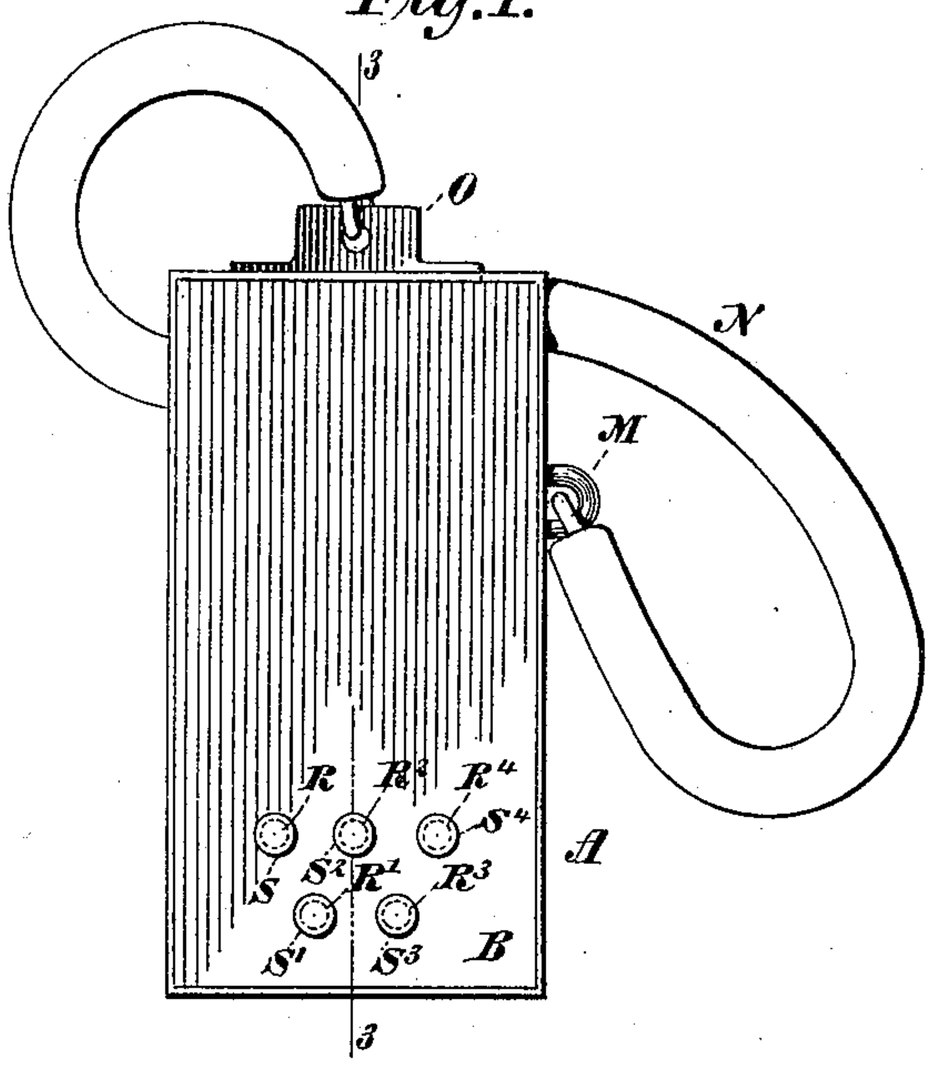


Fig. 2.

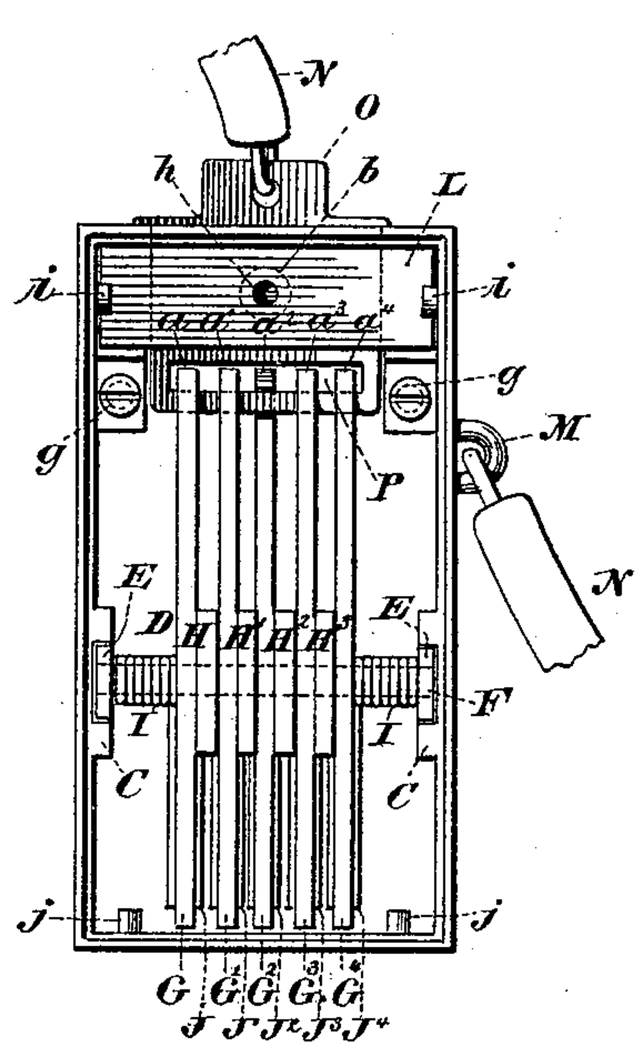


Fig. 3.

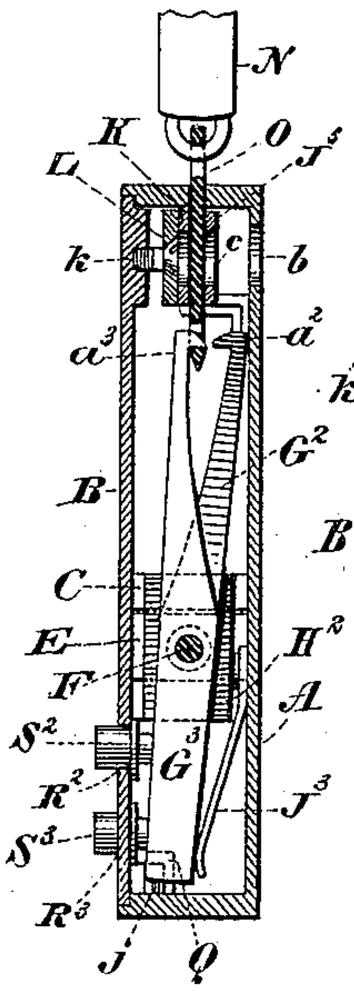


Fig. 5.

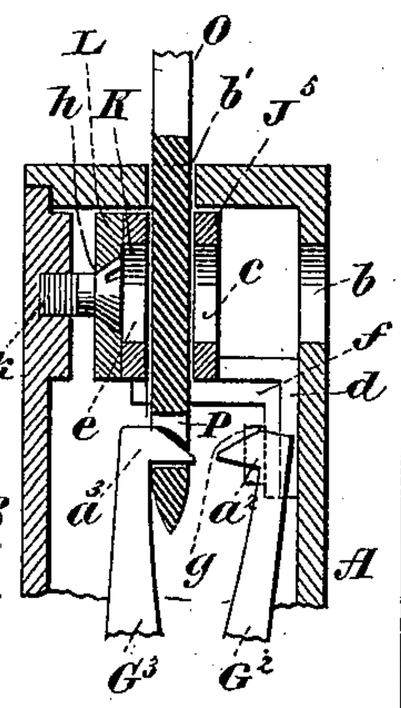
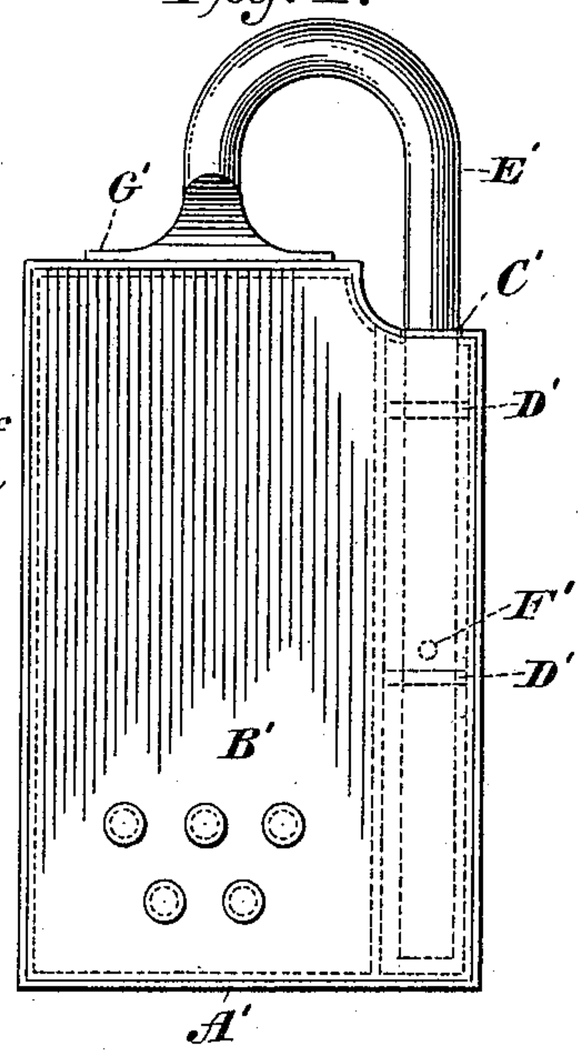


Fig. 4.



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UNITED STATES PATENT OFFICE.

FRANK M. BELL, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO WILLMA POLLACK, OF SAME PLACE.

BICYCLE-LOCK.

SPECIFICATION forming part of Letters Patent No. 614,604, dated November 22, 1898.

Application filed October 5, 1897. Serial No. 654,121. (No model.)

To all whom it may concern:

Be it known that I, FRANK M. BELL, a citizen of the United States, residing at the city of New York, in the county and State of New York, have invented certain new and useful Improvements in Bicycle-Locks, of which the following is a full, clear, and exact specification.

My invention relates to locks, and has for its object to provide a compact, simple, and efficient lock which may be used for divers purposes and more particularly to lock bicycles and other vehicles so that it becomes impossible to operate or use the same while the lock is attached thereto.

The objects above set forth I am enabled to attain by means of my invention, which consists in the novel details of construction and in the combination, connection, and arrangement of parts, as hereinafter more fully described and then pointed out in the claims.

In the accompanying drawings, forming part of this specification, wherein like letters of reference indicate like parts, Figure 1 is a front view of my improved lock. Fig. 2 is a similar view with the cover removed to expose the interior mechanism. Fig. 3 is a section on the line 3 3 of Fig. 1. Fig. 4 is a front view illustrating a modified form of lock, and Fig. 5 is an enlarged detail sectional view on the line 3 3 of Fig. 1.

In said drawings, A designates a rectangular casing having a cover B removably secured thereto.

C C denote guides provided upon the inner surface of the casing A, and D denotes a removable frame supported within the guides C C, comprising the end blocks E E, in which are mounted the ends of a rod F, carrying a series of locking-detents G G′ G^2 G^3 G^4, spacing-blocks H H' H^2 H^3, disposed intermediate the locking-detents to maintain the same properly separated, and springs I I, disposed upon the ends of the rod F intermediate the blocks E E and the sides of the locking-detents G and G^4. The locking-detents G, G′, G^3, and G^4 are arranged with their catches *a*, *a′*, a^3, and a^4 extending downward to engage the tongue O, hereinafter described, from above, and the locking-detent G^2 is arranged with its catch a^2 extending upward and adapted to engage said tongue O from below.

J J′ J^2 J^3 J^4 denote springs secured to the base of the casing A beneath the lower or rear ends of the locking-detents G G′ G^2 G^3 G^4 and bearing against the under sides of the lower or rear ends of said locking-detents to maintain the same normally raised and their forward ends normally depressed.

In the bottom of the casing A, near its upper end, is provided a circular opening *b*, and in the upper end of said casing is a slot *b′*. Below said slot, upon the inner side of the casing, is arranged a guide for the tongue O, said guide consisting of a plate J^5, having a central opening *c* therein and the feet *d d* at its base. Above said plate J^5 is disposed a plate K, likewise provided with a central opening *e* and feet *f f*, extending downward and outward and secured, together with the feet *d d*, to the base of the casing A by screws *g g*.

L denotes a plate provided with a small central aperture *h*, disposed upon the plate K and maintained in position by means of studs *i i*, projecting from the inner side of the casing A.

M denotes a staple secured to the casing upon its outer side, N a covered chain having one end secured to said staple M, and O a tongue provided with a slot P and secured to the other end of the chain N.

Upon the inner surface of the casing, at its lower end, are studs *j j*, which project inwardly, and upon the under side of the cover, at its corresponding end, are projecting tongues Q Q, adapted to engage with the studs *j j*, and *k* denotes a screw extending from below through the aperture *h* in the plate K and into the cover B to hold the latter secured to the casing A.

R R' R^2 R^3 R^4 denote apertures arranged in the cover B near its lower end, into which are fitted a series of pins S S' S^2 S^3 S^4, respectively provided with shoulders, whereby said pins are maintained in position within the cover B with their lower ends bearing upon the lower or rear ends of the locking-detents G G′ G^2 G^3 G^4.

In Fig. 4 I have shown a modification, and in this construction the casing A′ is made a trifle wider, partly cut away at its top, and

provided with an aperture C′. Within the casing A′ are provided bearings D′ D′. E′ denotes a staple, one leg of which extends through the aperture C′ in the casing and works within the bearings D′ D′ and provided with a stop F′, whereby to limit the extent of the withdrawal of said staple from the casing. The other end of said staple E′ is provided with a slotted tongue G′, similar to the tongue O above described. In other respects the apparatus illustrated by the modification is like that of the principal structure above described.

The operation is as follows: If we assume the chain or staple to be embracing a portion of a vehicle and the tongue thereof in position within the casing, as illustrated, it simply becomes necessary in order to release the tongue to depress the pins S, S′, S^3, and S^4, thereby causing the forward ends of the detents G, G′, G^3, and G^4 to be freed from the tongue O and permit the same to be withdrawn from the lock.

It is to be observed that the pin S^2, which operates the detent G^2, does not have to be depressed to release the tongue, and that if the same, either alone or in combination with one or more of the other pins, is depressed it will only serve to more effectually lock the device, and that as long as the tongue is locked in position within the casing it will be impossible to obtain access to the interior of the casing by removing the cover, for the reason that the means whereby the said cover is secured to the casing is covered and protected by the tongue.

It is to be further observed that while I have shown the device constructed with five locking-detents, of which one is not to be operated to release the tongue, any number of locking-detents can be used and one or more permitted to remain idle, and that a large number of combinations may be devised to operate the locking-detents to release the tongue.

Without limiting myself to the details of construction, which may be varied within the scope of the invention, what I claim, and desire to secure by Letters Patent, is—

1. A lock of the character specified comprising a casing having a slot in the end thereof, a slotted tongue adapted to enter said casing through the slot therein, a frame removably supported within said casing having a series of locking-detents removably mounted therein, a part of said detents being adapted to engage the tongue from above, and another part thereof adapted to engage said tongue from below, combined with a series of pins arranged partly within and partly without the casing adapted to operate said locking-detents, and when operated cause the part of said detents engaging the tongue from above to be freed therefrom, and the part adapted to engage the tongue from below to engage the same, substantially as specified.

2. A lock of the character specified comprising a casing, a cover for said casing, a slot in the end of said casing, an embracing device having one end attached to the casing and its other end free, a slotted tongue secured to the free end of said embracing device adapted to enter the casing through the slot in the end thereof, recesses provided upon the inner sides of the casing, a frame removably supported within said recesses, carrying a series of removable, spring-actuated locking-detents, means for maintaining said detents in position within the frame, and separated from each other, one set of said detents being adapted to engage the slotted tongue from above, and another detent or set of said detents adapted to engage said tongue from below, combined with a series of pins arranged partly within and partly without the casing and in contact with the lower or rear ends of the detents, a part of said pins, when depressed, being adapted to free the detents engaging the tongue from above, and another part of said pins adapted, when depressed, to cause the other detent or set of said detents adapted to engage the tongue from below to engage the same, substantially as specified.

3. In a lock of the character specified, the combination of a suitable casing, a detachable cover therefor, and means for securing said cover to the casing arranged within said casing, with an embracing device having one end secured to said casing and its other end free, a tongue secured to the free end of said embracing device adapted to enter the casing to lock the embracing device, and cover the means for securing the cover to the casing, substantially as specified.

4. In a lock of the character specified, the casing provided with a detachable cover, a slot in the end of said casing, a circular opening *b* in the base of said casing, plates J^5, K, L arranged within said casing and provided with circular openings *c*, *e*, *h* respectively, registering with the opening *b* in the base of the casing, a screw *k* extending through the plate L and into the cover to secure the cover to the casing, combined with an embracing device having one end attached to the casing, and its other end free, a slotted tongue secured to the free end of said embracing device adapted to enter the casing through the slot *b′*, and to be locked in position therein between the base of the casing and the plate J^5 and screw *k* therein, substantially as specified.

5. In a lock of the character specified, a removable frame comprising ends, a rod mounted therein, a series of removable detents carried by said rod, spacing-blocks likewise mounted upon said rod intermediate the detents, and springs disposed upon the ends of said rod intermediate the detents and ends, substantially as specified.

6. In a lock of the character specified, a removable frame comprising the end blocks E E, rod F supported at its ends within the blocks E E, removable detents G G′ G^2 G^3 G^4 carried by said rod F, spacing-blocks H H′ H^2

H^3 disposed upon the rod F intermediate the detents G G' G^2 G^3 G^4, and springs I I disposed upon the ends of the rod F intermediate the sides of the detents G and G^4 and the end blocks E E, substantially as specified.

7. A lock of the character specified comprising a casing having recesses provided upon the inner sides thereof, a slot in its upper end, guides arranged within said casing adjacent to its slotted end, a plate secured within said casing above said guides, studs projecting inwardly from lower end of said casing, a removable frame supported within said guides having a series of locking-detents pivotally supported therein, springs disposed between the lower or rear ends of said detents and the bottom of the casing to hold their forward ends normally depressed, a cover having tongues at its lower end adapted to engage with the inwardly-projecting studs at the lower end of the casing, a series of apertures in said cover above the lower or rear ends of the detents, pins supported within said apertures and in contact with the lower or rear ends of said detents, a screw extending through the plate disposed above the guides, and into the cover to hold the cover secured to the casing combined with an embracing device having one end attached to the casing and its other end free, a slotted tongue secured to the free end of said embracing device adapted to enter the casing through the slot in the end thereof, and be engaged by the ends of the detents aforesaid, substantially as specified.

Signed at the city of New York, in the county and State of New York, this 4th day of October, 1897.

FRANK M. BELL.

Witnesses:

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WILLIAM L. POLLACK.