

J. A. DEVORE.
BURGLAR ALARM FOR BICYCLES.

No. 583,223.

Patented May 25, 1897.

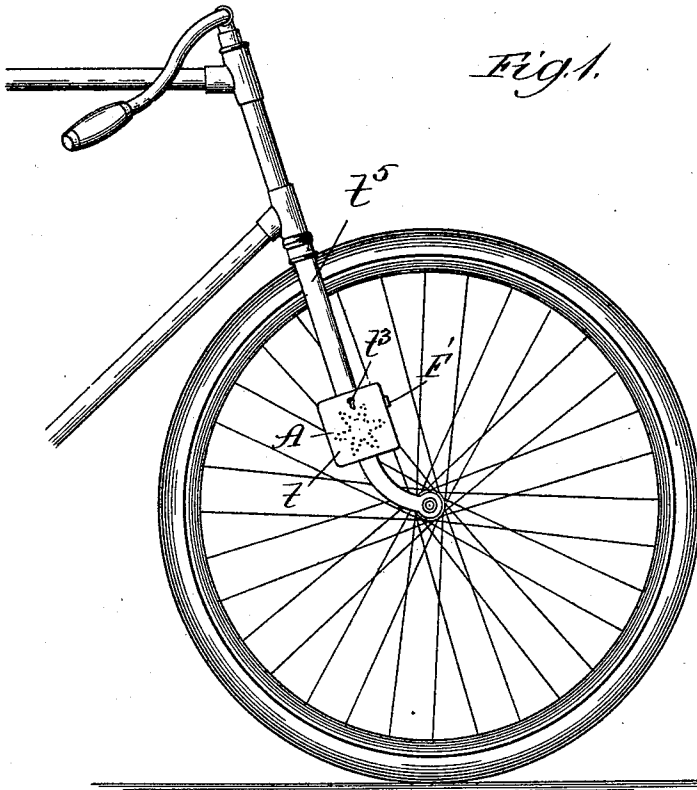


Fig. 1.

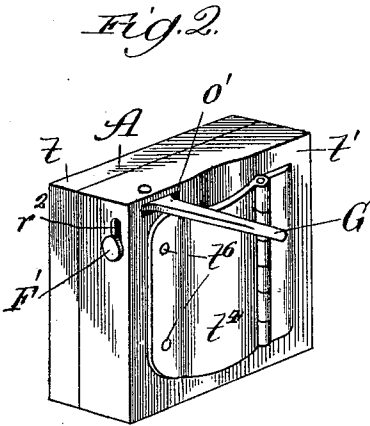
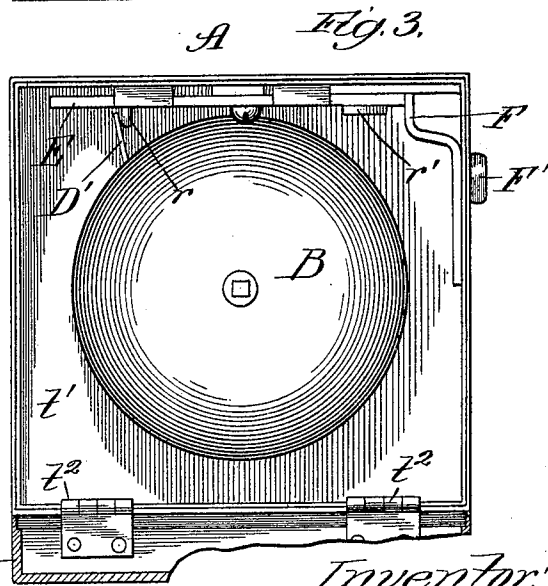


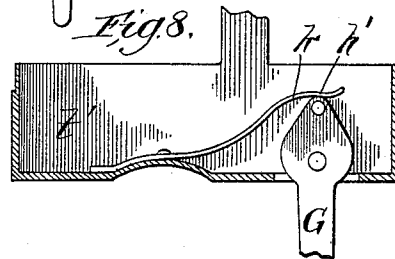
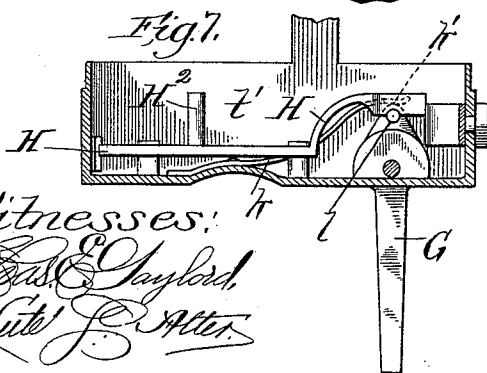
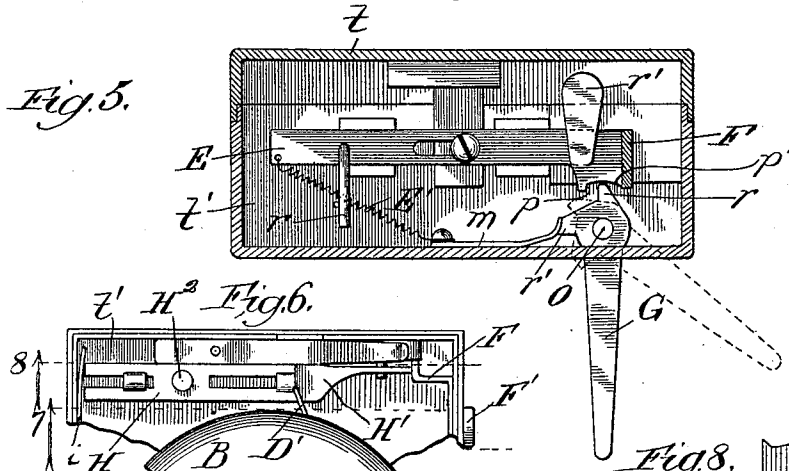
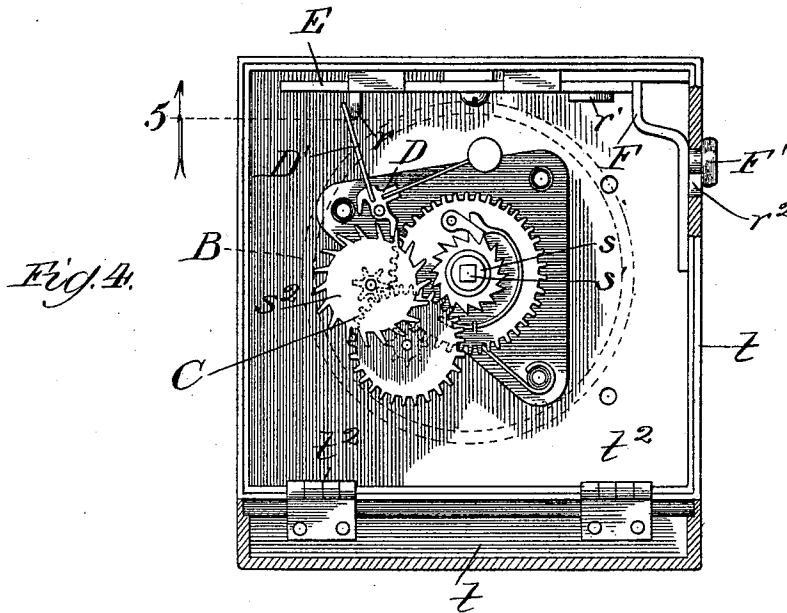
Fig. 2.



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UNITED STATES PATENT OFFICE.

JOHN A. DEVORE, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-FOURTH TO
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BURGLAR-ALARM FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 583,223, dated May 25, 1897.

Application filed October 28, 1895. Serial No. 567,079. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. DEVORE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Automatic Alarms for Bicycles and other Vehicles, of which the following is a specification.

My invention relates to an improved alarm adapted to be attached to vehicles, more particularly to bicycles and the like velocipedes, by the use of which the movement of the vehicle by a person unauthorized to move it may at once be called to the attention of the owner, the primary object of my invention being, as explained, to afford a means for detection in case of attempted theft of the bicycle or other vehicle, while a secondary object is to provide an alarm adapted to this purpose which may readily be attached to the vehicle, may be readily thrown into and out of operative position, and when attached shall not to an undesirable extent increase the weight of the machine.

Particularly in the case of bicycles the thefts which constantly occur are the cause of serious annoyance, and much loss is thereby incurred. It is found that a thief of ordinary adeptness finds little to contend against in the fastening-chain and padlock more commonly in use, as where the lock is one not readily picked it is found to be a simple matter to sever the chain which usually locks the wheel, after which he can easily mount the machine and ride away. Owing to the great similarity between all bicycles, it is not ordinarily possible for the fact that another than the owner is astride the machine to be ascertained except by the owner, who knows the number, and not always by him; and the present invention has for its primary purpose the provision of means by which an unusual and startling commotion is caused to occur where the rider, not being the owner or authorized by the owner and thus provided with the means for preventing the commotion, undertakes to move the wheel. It is believed that the fact that a bicycle or other vehicle cannot be moved by an unauthorized person without creating a violent commotion will prevent

attempts at theft, and where the attempt is not prevented the readiness of detection thus afforded will at least save loss to the owner.

In the following specification I have more particularly described the device as produced by me in the form now deemed most desirable, and particularly adapted to attachment to a bicycle of the ordinary construction; but I do not limit my invention to the general or specific details hereinafter set forth nor to its use in connection with this particular class of vehicles. In connection with such a vehicle, however, and in its particular form it has advantages hereinafter pointed out.

My invention consists generally in an alarm, such as an alarm-bell or sounder the hammer of which is caused to vibrate by a spring released by a pallet on a clock-gear, said spring being caused to operate by the movement of a trigger adapted to be locked in the line of movement of the movable part of the vehicle.

My invention consists, further, in an alarm mechanism adapted to be set in motion by engagement with a trigger or similar device of the movable part of the vehicle, the alarm being incapable of access except by an authorized person, such as one having the key to the box which contains it.

My invention consists, further, in the general and specific details of construction and arrangement of parts, all as hereinafter more fully set forth.

In the drawings, Figure 1 is a view in side elevation of the forward end of a bicycle having my automatic alarm attached. Fig. 2 is a rear perspective view of the alarm-containing box. Fig. 3 is an interior view in elevation, showing the location of the bell and the relative arrangement of parts in one form of my device. Fig. 4 is a view similar to that of Fig. 3 with the bell removed to show the mechanism beneath it. Fig. 5 is a horizontal sectional view taken on the line 5 of Fig. 4 and showing the trip mechanism operated by the trigger for releasing the bell-sounding spring. Fig. 6 is a sectional elevation of the upper end of the alarm-box, showing the contained mechanism in a modified form. Fig. 7 is a horizontal transverse section on the

line 7 of Fig. 6, and Fig. 8 a similar section on the line 8 of Fig. 6.

All sectional views are to be viewed as indicated by the arrows.

5 In all the figures the actuating-trigger is shown in position for engagement with a movable part of the vehicle, but the trip mechanism is shown in a position wherein it is held to prevent its being actuated. The
10 release of the trip is effected in a manner which will appear from the description which follows.

A represents a box or casing, preferably made in two parts t and t' , hinged together, as indicated at t^2 , and adapted to be closed with a snap-lock of a common sort, which is opened with a key entering the keyhole t^3 . Any form of lock desired may be used, it being preferred that it should be of such a nature as to make it difficult of duplication, although
20 under ordinary circumstances a lock operated by a key will be sufficient. To the outer face of the box A is hinged a plate t^4 , the purpose of which is to embrace the forward fork-arm
25 t^5 of the bicycle, the plate being secured at its free end by screws (not shown) passing through the wall of the section t' and through screw-holes t^6 in the plate, the heads of the screws being within the box, and therefore
30 inaccessible until the box is opened. By this construction the securing of the box to the fork-arm is rendered practically permanent until released by a person able to open the box. The plate and its operating mechanism, including the trip and trigger, are all
35 preferably secured in the part t' of the box A, while the wall of the part t is perforated to permit the sound of the alarm within the box to be more readily heard.

40 B represents the alarm-bell, mounted upon a central arbor s , through which arbor passes the square-ended stem s' for winding the clock-train C. The clock-train C is of the usual or any preferred construction and need
45 not be described in detail. The last wheel of the train (lettered s^2) is engaged by a pallet D, the points of which are adapted to be engaged alternately by the teeth of the wheel s^2 in the usual manner. From this pallet projects out, as is usual in alarms of this nature,
50 the hammer-arm s^3 , and in another direction projects the locking-arm D' , the purpose of which is, by its engagement with the trip, to hold the pallet against movement when the
55 alarm is to be thrown out of operation. The clock-train is operated by a spring (not shown) in the usual manner.

The trip mechanism is shown in the drawings as having two forms, but they will be
60 found to present a practical identity of construction, and to the extent that they differ and even to a greater extent the structure may be varied without departing from my invention. Referring particularly to the form
65 shown in Figs. 1 to 5, inclusive, it comprises a bar E, held in guides in the wall of the box

and given a tendency to move forward or from left to right, Fig. 5, by the spring E' . An arm r projects inward from the bar E into the line of the arm D' , and its purpose is to
70 engage this arm when the alarm is to be locked against operation. Upon the bar is a handle r' , through which it may be moved backward and forward by hand. The forward movement of the bar is adapted to be limited by
75 engagement with the sliding dog F, which is bent as shown and slides in contact with the side wall of the box A, being operated by the button F' passing through the elongated slot r^2 in said wall. As the bar E is pressed forward by the spring E' it will be obvious that
80 with the dog F drawn away or downward the engagement between the arms r and D' is released, whereby the pallet D is released and the alarm-operating train permitted to act, and it will also be obvious that when the dog
85 F is advanced or raised to occupy the position shown in the figures, whereby it prevents the forward movement of the bar E, the bar E, being pressed forward by its spring E' , presses
90 against the dog F and prevents the latter from falling. Any other suitable means for holding the dog F in its lifted position may be employed, if desired, that shown being found
95 sufficiently operative for the purpose.

At its forward end the bar E is broadened to an approximate L shape, and the projecting edge is cut away to produce the shallow
stops $p p'$. Supported upon a stud o at its end and projecting outward from the box A
100 through the slot o' is a trigger G. This trigger is made preferably of chilled steel or some other metal difficult to saw, file, or cut. The inner end of the trigger has the projecting spurs $n n'$, the former of which engages the
105 projecting face of the bar E between the points $p p'$, and the latter of which is engaged by the spring m , the purpose of which is to hold it in the position indicated in the drawings; but the engagement of the spring m and the
110 trigger is such that very little power applied to the trigger will cause the latter to turn on the stud o , thereby to release the bar E from engagement with the spur n , whereupon the
115 spring E' , retracting, advances the bar E and releases the pallet D. This movement of the bar E occurs, of course, only if the dog F shall have been withdrawn from the advanced position in which it is shown in the drawings.

The operation will be readily understood. The box A being secured to the fork, as shown
120 in Fig. 1, the button and the dog F, carried thereby, being lifted to the position shown in Figs. 3 and 4, and the trigger G being turned to the position indicated in the dotted lines,
125 Fig. 5, in which it is held by the spring m , the wheel may be rotated without engaging the trigger at all. When it is desired to set the alarm, the trigger is brought to the position indicated in full lines in Fig. 5, whereby
130 the point or some part of it is in the line of movement of the spokes of the wheel, and

the button F' and the dog F , carried thereby, are then pushed down to the position shown in Fig. 2. When this is done, the advancement of the bar E under the action of its spring E' is prevented only by the engagement of the stud n with the face of the bar E , as shown in Fig. 5. Therefore should the wheel be moved the trigger G will at once be thrown forward or back, thereby releasing the bar E , permitting it to advance, disengaging the arm D' , and causing the alarm to sound, the sounding continuing until the spring runs down or until the box is opened and the bar E moved back by hand. It will be observed that the bar E cannot be moved after advancement by any manipulation of the trigger G , so that when it once permits the alarm to be released it cannot again be actuated by any means employed from the outside. It will be observed, also, that after the trigger is set into the position shown in full lines in Fig. 5 and the dog F is withdrawn from the advanced position shown in Fig. 4 the dog cannot be returned to its advanced position, as the spring having drawn forward the bar E slightly the forward point of the bar presents an obstacle to the rise of the dog. The slight play permitted in the bar E is illustrated in the drawings by the distance shown between the point of the spur n and the adjacent point p on the bar E .

In the alternative or modified construction shown in Figs. 6, 7, and 8 the bar H , corresponding with the bar E , is held to the box with a different species of guide, and instead of having the arm r projecting into the line of movement of the pallet-controlling arm D' the bar is curved, as shown at H' , to present a shoulder which engages the arm D' . Another change is found in the substitution of a stud H^2 for the handle r' , the purpose being the same—namely, to move the bar after the box is opened. Another change is found in the provision of a stud l at the inner end of the trigger G , which stud engages the recessed lower forward face of the bar H in the same manner that the spur r engages the face of the bar E and for the same purpose. Instead of controlling the trigger G by a spring m engaging one of its spurs a curved spring k engages the inner point k' of the trigger for the same purpose. For the retracting-spring E' for operating the bar E is in this modified form substituted a flat spring i , which engages the rear end of the bar H . The operation is in all respects the same as with the construction shown in the other figures.

It will be quite obvious that the trigger G may be actuated by some other of the movable parts of the bicycle than the spokes, necessitating the attachment of the box A to some other part of the bicycle than the front fork. This is entirely within the purview of my invention. It will also be obvious that the particular form of the trigger G may be

changed to suit the particular movable part which is to operate it, and such a change is also within the purview of my invention. So far as I am at present aware, however, the specific construction, mode of support, and operation of the alarm as shown in the drawings and hereinbefore described present the greatest convenience and the greatest certainty of operation, coupled with the least expense in making and attaching; but my invention is by no means limited to the details thus presented.

If, instead of its attachment to a bicycle, the alarm be attached to a four-wheel vehicle, such as a wagon, it will usually be found desirable to change the mode of attaching the alarm and form of trigger to suit the altered use, but in principle of operation and in general construction the apparatus may be the same as that shown.

It will be obvious that instead of securing the casing to a fixed part of the bicycle or other vehicle, such as the fork p' , it may be secured to a movable part, such as the hub of a wheel, and such engagement will be within the spirit of my invention. As the bar E in Figs. 1 to 5 and the bar H in Figs. 6 to 8 are both provided for locking and tripping the sounder-actuating mechanism contained in the bell B , clock-gear C , pallet D , and arm D' , I designate the same a "trip-bar" or "locking-bar" in the claims which follow.

What I claim as new, and desire to secure by Letters Patent, is—

1. In an alarm for vehicles, the combination with a casing adapted to be secured to a relatively-fixed part of the vehicle, a sounder within the casing, spring-actuated mechanism operating the sounder, a projecting arm in the spring-actuated mechanism, a spring-actuated trip-bar engaging said arm, a dog movable from without the casing to engage and release the trip-bar, and a trigger projecting at one end without the casing, and having its inner end presented for engagement with the trip-bar when the latter is released by the dog, substantially as described.

2. In an alarm for vehicles, the combination with a casing provided with means for its attachment to a relatively-fixed part of the vehicle, said means being capable of manipulation only from within the casing which is adapted to be closed and locked as described, a sounder within the casing, spring-actuated mechanism operating the sounder, a projecting arm in the spring-actuated mechanism, a spring-actuated trip-bar engaging said arm, a dog operative from without the casing to engage and release the trip-bar, and a spring-restrained trigger projecting at one end without the casing and having its inner end presented for engagement with the trip-bar when the latter is released by the dog, substantially as set forth.

3. In a vehicle-alarm the combination with

the sounder and its casing, and the trip-bar and its spring, and with the trigger adapted to hold said trip-bar against movement, of a dog F movable in and out of the path of movement of the trip-bar, said trip-bar having a freedom of slight forward movement when held by the trigger, whereby, when the dog

is withdrawn, it cannot be replaced in advance of the trip-bar without moving the trip-bar by hand, substantially as described.

JOHN A. DEVORE.

In presence of—

D. J. HARRISON,
J. H. LEE.