

(No Model.)

N. T. MILLS.
BICYCLE BELL.

No. 576,137.

Patented Feb. 2, 1897.

Fig. 1.

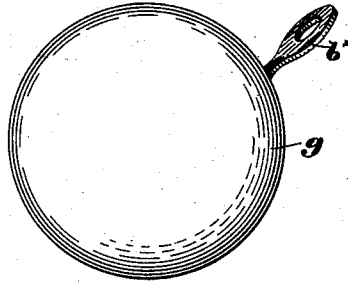


Fig. 2.

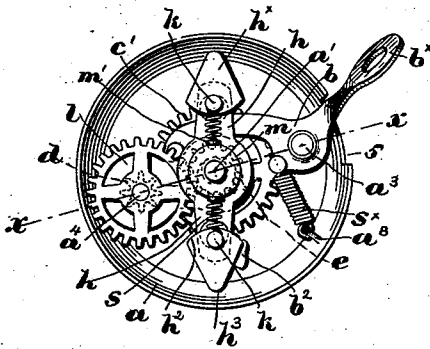


Fig. 3.

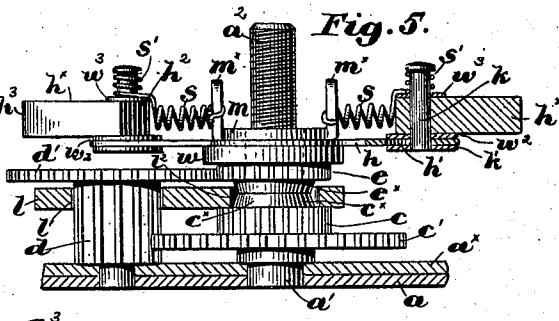
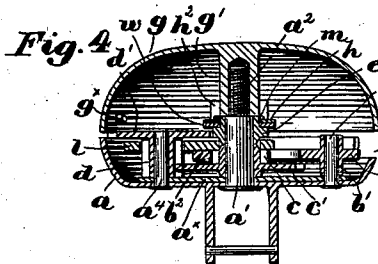
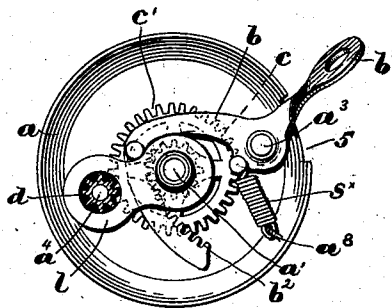
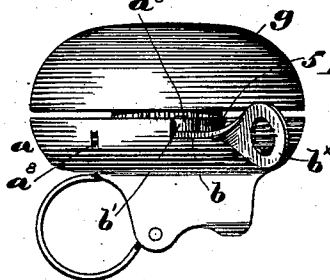
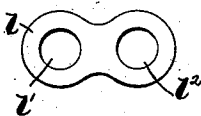


Fig. 7.



Witnesses:

Walter C. Combs
Thomas J. Drummond

Inventor:

Norman T. Mills,
by Crosby & Sugary, Attys.

UNITED STATES PATENT OFFICE.

NORMAN T. MILLS, OF EVERETT, MASSACHUSETTS.

BICYCLE-BELL.

SPECIFICATION forming part of Letters Patent No. 576,137, dated February 2, 1897.

Application filed March 28, 1896. Serial No. 585,200. (No model.)

To all whom it may concern:

Be it known that I, NORMAN T. MILLS, of Everett, county of Middlesex, and State of Massachusetts, have invented an Improvement in Bells, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates particularly to bicycle-bells, and has for its object the production of improved striking and actuating mechanism therefor, means being provided for holding or locking the movable parts of the bell from rattling or jumping about when not in use.

The various novel features embodied in my invention will be hereinafter fully described in the specification and particularly pointed out in the claims.

Figure 1 is a top or plan view of a bell embodying my invention with the gong in place. Fig. 2 is a similar view, the gong being removed. Fig. 3 is a plan view of the base with the hammer-carrier and one of the gears omitted to more clearly show the locking means. Fig. 4 is a diametrical section of the bell with the gong in place, taken on the line xx , Fig. 2. Fig. 5 is an enlarged detail view in elevation of the movable parts of the bell, one of the hammers and a portion of the hammer-carrier being shown in section. Fig. 6 is a side elevation of the bell, and Fig. 7 is a detached plan view of the locking device.

The base a , struck up or stamped from suitable sheet metal and having upon its under side an attaching device whereby the bell is secured in place, has mounted thereon a post a' , threaded at its upper end at a^2 to enter a threaded hub g' of a gong g of suitable construction, provided on its interior with one or more lugs g^x to be struck by the hammer. A bearing-plate a^x is secured to the base interiorly by two studs a^3 a^4 , diametrically located at opposite sides of the post a' , and upon the stud a^3 is mounted the extended hub b' of the actuator, (shown as a lever b , extended at one end through a slot 5 in the wall of the base and provided with a handle or finger-piece b^x .) The inner end of the lever is bent to form an interiorly-toothed segment b^2 , the teeth of which engage a pinion c , forming a part of the hub of a large gear c' , mounted to rotate on the central post

a' . This gear c' engages the teeth of a long pinion d , rotatably mounted on the stud a^4 , said pinion having secured to its upper end a gear d' , which in turn engages a pinion e , also rotatable on the post a' above and resting on the hub of the gear c' .

As best seen in Fig. 5, the hub of gear c' is upwardly and inwardly beveled, as at c^x , and the hub of the pinion e is inwardly and downwardly beveled at e^x , for a purpose to be described.

A locking-plate l (shown separately in Fig. 7) has holes l' l^2 to receive loosely the pinion d and the beveled portions c^x e^x , respectively, for a purpose to be described, the locking-plate normally affording but little resistance to the rotation of the parts specified when the bell is rung, said plate resting lightly on the pinion c and the curved end of the lever b .

The hub of pinion e is upwardly extended (see Fig. 4) and receives tightly thereon a washer w and the hammer-carrier h , to be described, the carrier being shown as an elongated plate or bar having holes therein near its ends, as at h' , one of such holes being shown at the right, Fig. 5. A stud k , having a large head k' at its lower end, is extended up through each hole and loosely through a substantially triangular block of metal h^x forming the hammer, the base or inner side of the hammer near the stud being preferably convex, as at h^2 , and rounded or blunted at its apex h^3 , Figs. 2 and 5. Washers w^2 w^3 are preferably interposed between the hammer-carrier h and the hammer, and between one part s' of a spring coiled about the stud k and above the top of the hammer, the upper end of the stud being slightly upset to retain the spring in place. The other portion s of the spring is interposed between the center of the base h^2 of the hammer and an ear m^x , upturned on a ring m , tightly secured to the hub of the pinion e above the hammer-carrier, the end of the spring being secured to the ear, as clearly shown in Fig. 5.

The wall of the base a is struck up, Figs. 2 and 3, into a loop a^8 to hold one end of the spring s^x , which moves the lever b in one direction, the other end of the spring being attached to a lug b^3 on the lever, the loop a^8 being much easier and cheaper to make than a stud or pin secured to the base. A second lug b^4 on the lever b is so located thereon that

when said lever is in normal inoperative position, Figs. 2 and 3, the lug will bear firmly against the edge of the locking-plate l , crowding it against the pinion d and also against the beveled portions $c^x e^x$ of the pinions c and e . The plate thus locks or acts as a brake upon the three pinions, holding them from vibration or partial rotation so long as the spring s^x draws the actuator or lever b against the plate l , which may be of metal or of fibrous material, as desired.

By making the hammer h^x substantially triangular and pivotally mounted near its inner side or base the said hammer will turn easily as it passes the projection g^x on the gong, obviating the pushing in of the hammer radially to pass the projection, and thereby effecting an easier operation of the bell.

The spring $s s'$ acts to control the movement on the hammer-carrier h , and also serves to maintain the hammer yieldingly seated thereupon, and the part s of the spring acting upon the convexed base h^2 to normally position the hammer, as shown in Figs. 2 and 5, ready to strike the gong projection when the hammer-carrier h is rotated.

The movement of the stud k in the enlarged hole h' of the carrier also provides for quite a range of movement of the hammer.

A detailed description of the operation of the actuating mechanism will not be necessary, as the same will be obvious from the specification and an inspection of the drawings.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a bell of the class described, a central post, a hammer-carrier rotatable thereon and having an attached pinion; a locking-plate to at times engage and hold the pinion; a vibratable actuator having a segmental gear, and gearing intermediate it and the pinion, the actuator on returning to normal position engaging and moving the locking-plate into operative position, substantially as described.

2. In a bell of the class described, a central post; a hammer-carrier rotatable thereon and having an attached pinion provided with a beveled hub; a locking device to at times engage and hold the beveled hub; a vibratable actuator, and gearing between it and the pinion, to rotate the latter, the actuator on its return to normal position engaging and moving the locking device into operative position, substantially as described.

3. The base, an upright post erected thereon, a hammer-carrier rotatable thereon and having an attached pinion; a vibratable actuator having a segmental gear; a pinion in engagement therewith and loose on the post; a locking device to engage and lock said pinions when the actuator is at rest, and connecting-gearing between said pinions, substantially as described.

4. The base, an upright post thereon; a hammer-carrier rotatable thereon and having an attached pinion provided with a downwardly-extended hub; a vibratable actuator having a segmental gear; a pinion in mesh therewith, loose on the post and having an upwardly-extended hub; a movable locking-plate to at times engage the hubs of and restrain the pinions from rotation; and gearing intermediate the pinions, said locking-plate being moved into operative position by the actuator when in normal position, substantially as described.

5. In a bell of the class described, a rotatable hammer-carrier, actuating mechanism to rotate it, a locking-plate to normally engage and prevent rattling of said mechanism, and means to release the plate when the bell is rung, substantially as described.

6. A rotatable hammer-carrier having an upturned lug, and a hole at one end, a headed stud extended loosely through said hole and the hammer, a substantially triangular hammer having a convex base, and a spring secured to the lug and interposed between it and the hammer, to bear upon the convex base of and normally press the hammer and stud outwardly and maintain the hammer-apex extended radially, substantially as described.

7. A rotatable hammer-carrier, a pinion having its hub extended therethrough, a retaining-ring on the hub above the carrier and provided with an upturned lug, a hammer pivotally mounted near the end of the hammer-carrier, and a hammer-spring connected at one end to said lug and interposed between it and the hammer, substantially as described.

8. A rotatable hammer-carrier, a hammer having a convexed base and outwardly-converging sides, mounted on said carrier and having a radial and a partially rotative movement thereon, and a controlling-spring held at its inner end on the hammer-carrier and pressing upon but unconnected with the convexed inner side of the hammer, to retain it yieldingly in normal position, substantially as described.

9. A rotatable hammer-carrier, a triangular hammer having a convex base, mounted to move radially and rotatively thereon, a headed stud extended loosely through the hammer-carrier and through the hammer near its convex base, and a controlling-spring for the hammer adapted to bear upon the convex base substantially at its center, to return it to normal position, after rotative movement upon the stud, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

NORMAN T. MILLS.

Witnesses:

JOHN C. EDWARDS,
AUGUSTA E. DEAN.