

(No Model.)

A. F. ROCKWELL.
BICYCLE BELL.

No. 575,069.

Patented Jan. 12, 1897.

Fig. 1.

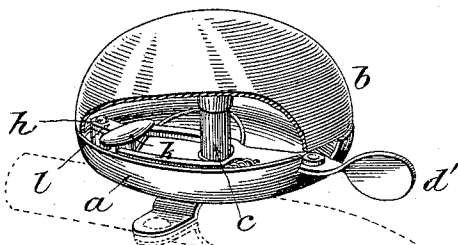


Fig. 2.

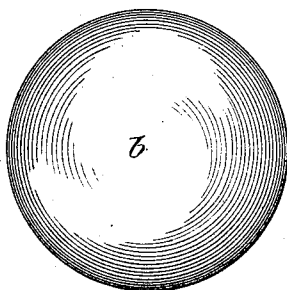


Fig. 3.

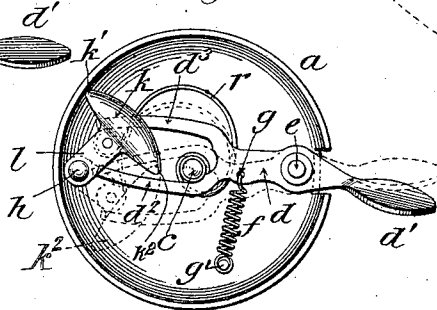
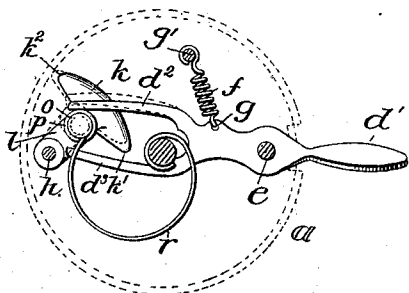


Fig. 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

ALBERT FENIMORE ROCKWELL, OF BRISTOL, CONNECTICUT, ASSIGNOR
TO THE NEW DEPARTURE BELL COMPANY, OF SAME PLACE.

BICYCLE-BELL.

SPECIFICATION forming part of Letters Patent No. 575,069, dated January 12, 1897.

Application filed July 10, 1896. Serial No. 598,721. (No model.)

To all whom it may concern:

Be it known that I, ALBERT FENIMORE ROCKWELL, of Bristol, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Bells; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The primary object of my invention is to provide a gong-bell which comes under the head of what has come to be known as a "double-stroke" bell. Such a bell has been found to be a desirable one in practice and to be popular among users, although my invention is equally applicable to many other forms of bells, as will appear more fully hereinafter.

Without attempting to detail all of the essentials of such a bell, it is evident that those most worthy of consideration are as follows: First, it should be neat and attractive in appearance and capable of manufacture in different sizes; second, simplicity and cheapness in construction are indispensable, and to this end it should consist of as few parts as possible; third, it should be easy of adjustment, both to promote cheapness in manufacture and convenience of manipulation and regulation by the non-expert user; fourth, it should be capable of giving forth two strokes at one manipulation which should be clear and resonant, thus effecting an unmistakable and distinguishable alarm; fifth, it should not rattle when subjected to jars upon a vehicle and should not readily get out of order.

I am aware of many attempts to make a bell possessing these characteristics, some of which have been to a greater or less degree successful. Each, however, has failed in some one or more of these essentials.

To the end of overcoming the difficulties heretofore encountered and of meeting the requirements above set forth my invention consists in the details of the several parts of a bell and their combination in a bell, as is hereinafter more particularly described, and pointed out in the claims.

In the construction of double-stroke bells the following necessities present themselves:

first, the maintenance of the striker normally out of contact with the gong, so as not to check the vibrations thereof except when a blow is struck; second, the impingement of the striker sharply against the gong at one side to sound the same and its immediate recoil; third, the sharp impingement, reciprocally, of the striker against the gong on the other side and its immediate recoil.

Reference is to be had to the annexed drawings, and to the letters marked thereon, forming a part of this specification, the same letters designating the same parts or features wherever they occur.

Referring to the drawings, Figure 1 is a perspective view of the bell attached to the handle-bar of a bicycle (in outline) with the gong broken away so as to show the arrangement of parts. Fig. 2 is a plan view of the bell in normal position as viewed from above. Fig. 3 is a plan view of the bell in the same position but with the gong removed, showing the position of the parts after pressure upon the thumb-piece. The normal position of parts is shown by dotted lines. Fig. 4 is a detailed perspective view of the striker-mount and spring. Fig. 5 is a plan view of the interior of the bell, looked at from below, with the base-piece removed.

In the accompanying drawings the letter *a* designates the base-piece, which may be provided with any one of the usual means of attachment to the handle-bar of the bicycle or other support.

b is the gong, also of any usual desired material and construction. A post *c*, fixed preferably in the center of the base, supports the gong, which may be secured thereto by a screw-thread thereon, or by any other suitable means.

d is a lever pivoted to the base-piece, as at *e*. This pivot is preferably located as near as possible to the circumference of the gong, both for convenience of manufacture and for obvious advantages in use. A spiral spring *f* holds the lever in position, being attached to the lever inside the pivot at *g* at one end and at the other to a stud fixed to the base-piece at *g'*. The material of the lever must be brass or some metal which will permit the formation of a fork with two resilient prongs

d^2 d^3 extending either side of the central post c , which serves as a means to limit the motion of the lever. This is a convenient construction, although any other limiting means may be used, as, for instance, if the gong were attached to the base-piece by a curved standard, as is sometimes the case. At its outer end the lever is constructed so as to form the familiar finger-piece of a bicycle-bell d' . Means, (not shown,) however, for attaching the end of a rope or wire connecting with a bell-pull or push-button may take the place of this finger-piece, or any means may be used to oscillate the lever so as to cause it to perform its function, that is, to propel and control the movement of the striker-mount.

At a point a little to one side of a line drawn through the pivot e and post c and near the edge of the base-piece is fixed a post h , provided at its upper extremity with a head. This post h serves as a support and pivot for the striker-mount, which is preferably, but not necessarily, cast in one piece and consists of the hub m , from the upper end of which extends the crank or arm l . At the inner end of the arm l is a striker k , having double ends, as k' k^2 .

A small pin n is attached to the striker-arm just back of the striker and projects from its under side. Carried by this pin are two rolls o and p . The smaller roll o is the lower in position on the pin and is grooved around its circumference, or so constructed that the end of a small wire spring may be conveniently coiled around it and engage it securely.

r is a small wire spring bent into a substantially semicircular form and coiled loosely around the central post at one end and securely attached to the small roll o at the other.

The prongs d^2 d^3 bear against the roll p in operating the bell.

The operation of the bell now becomes clear. By pressure upon the finger-piece the prong d^2 , acting upon the roll p , moves the striker-mount against the force of the spring r away from the position shown in dotted lines in Fig. 3. By experiment it will be found that there is a center of equilibrium at which the striker-mount will be substantially or actually stationary, that is, at which the spring r will exert no force in either direction. Having been caused to pass that point by the pressure of the prong, the spring acts upon the striker-mount, forcing it toward the position shown in full lines in Fig. 3 and causing the end k' of the striker-head to impinge sharply against the gong and sound the same. The prongs of the fork of the lever are, as heretofore remarked, made of some metal having resilient qualities, and they are so adjusted as to bear upon the roll p and hold the striker normally out of contact with the gong. As the roll, therefore, strikes the prong d^2 the prong will give and permit the striker to impinge against the

gong, but will immediately spring back, causing the striker to rebound instantly from contact with the gong. Thereupon pressure upon the finger-piece being released, the resilient action of the spring f will cause the prong d^3 to bear against the roll, carrying the striker-mount back past the center, when in the manner already described the spring r will cause the striker-head k^2 to impinge upon the gong, as shown by the dotted lines in Fig. 3, the prong d^3 causing it to immediately rebound.

The prongs must not only be made of metal having resilient qualities, but must be adapted in size to permit them to perform the desired function, to wit, to hold the striker normally out of contact with the gong when at rest, as illustrated by striker-mount k^2 in dotted lines in Fig. 3, and to give sufficiently to permit the striker to impinge against the gong when the striker-mount is forced against the prong, as shown at k' , Fig. 3. This is further illustrated by Fig. 5. Pressure upon the lever at d' has forced the striker-mount away from its normal position as held by the spring f , the pressure has been released, and the spring f has actuated the lever and prong d^3 to propel the striker-mount up to and past the center of equilibrium. Here the spring r comes into play and drives the striker-mount into the position shown in Fig. 5. If the prong d^2 is rigid, the striker will stop at the position shown in full lines and the striker-point k' will fail to impinge against the gong. The prong d^2 , however, is resilient, and the roller p striking it causes it to give and momentarily to be forced into the position shown in dotted lines, Fig. 5, at k^2 , when the resiliency of the prong causes it to spring back and draw the striker-point k^2 away from the gong.

It will be observed that very few parts are required in this construction and that the action of the working parts is capable of easy adjustment by the non-expert user by springing the resilient prongs one way or the other and by increasing or diminishing the power of the two springs.

I have called this bell a "double-stroke" bell because by a single pressure upon the finger-piece two separate blows are struck upon the gong and two sharp resonant tones are produced in quick succession. I wish to point out the fact, however, that by a reasonably quick manipulation of the thumb-piece a substantially continuous or electric ringing may be secured. By removing or omitting the spring f or by holding firmly the thumb-piece after pressure in one direction a single stroke is made. Thus while primarily designed as a double-stroke bell this is a combination of single-stroke, double-stroke, and continuous or electric stroke bell.

I have chosen to describe somewhat minutely one form of embodiment of my invention, but I wish it to be understood that I do not limit myself to the exact construction set forth, which it is plain may be varied in many

of its details without departing from the spirit of my invention. I have, for example, used for illustration the bell as attached to a bicycle or handle-bar. By varying the form of mode of attachment by well-known ordinary means it is equally effective for use in or on other vehicles and for door or call bells or for practically any use to which a bell can be put.

The essence of my invention is in the method of effectuating the alarm through the lever with its resilient prongs, the striker-mount, and its actuating-spring.

I claim as my invention the following-described novel features, substantially as hereinbefore specified, namely:

1. A gong-bell, comprising in its construction a base-piece and gong, a spring-actuated striker-mount provided with a striker, and a lever provided with resilient prongs for propelling, and controlling the movement of, the striker-mount.

2. A gong-bell comprising in its construction a base-piece and gong, a spring-actuated striker-mount provided with a striker, and a lever, spring-actuated in one direction and provided with resilient prongs for propelling and controlling the movement of the striker-mount.

3. A gong-bell, comprising in its construction a base-piece and gong, a striker-mount provided with a striker, a spring for actuating the same in either direction from a center, and a lever provided with resilient prongs for propelling, and controlling the movement of, the striker-mount.

4. In a gong-bell mechanism a lever pivoted

to the base-piece provided with resilient prongs for propelling, and controlling the movement of, the striking mechanism.

5. In gong-bell mechanism a striker-mount comprising in its construction a hub, a crank or arm on the hub, a striker on the crank or arm provided with a pin carrying a roll, and a spring coiled loosely around a support at one end and secured to the roll of the striker-mount at the other for actuating the striker-mount in either direction from a center of equilibrium.

6. A gong-bell, comprising in its construction a base-piece and gong; a striker-mount constructed of a hub, a crank or arm on the hub, a striker on the end of the crank or arm, a pin carrying two rolls; a spring coiled loosely about a support at one end and attached to the lower of said rolls at the other for actuating the striker-mount in either direction from a center; and a lever, spring-actuated in one direction, constructed with means of manipulation and having resilient prongs, and limited in movement so as to propel the striker-mount, by bearing against the upper of said rolls past the center in either direction, but maintaining the same normally out of contact with the gong except at the instant of impingement.

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

ALBERT FENIMORE ROCKWELL.

Witnesses:

MOSES WILCOX BARTLETT, Jr.,
JOHN J. JENNINGS.