

(No Model.)

L. A. SANFORD.
BICYCLE BELL.

No. 585,483.

Patented June 29, 1897.

Fig. 1

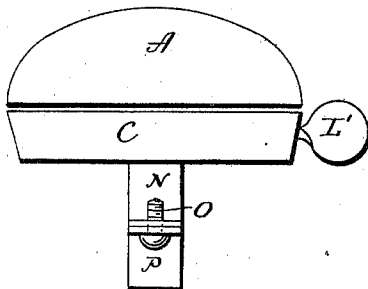


Fig. 2

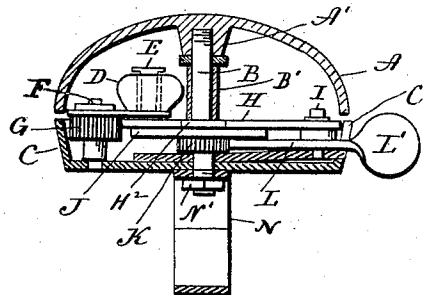


Fig. 3

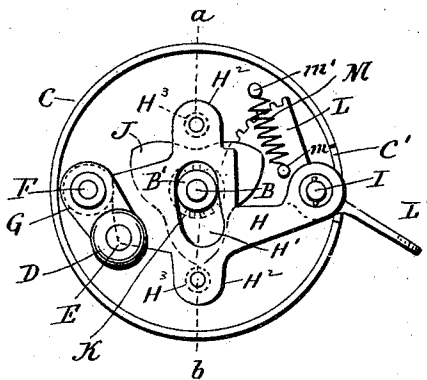


Fig. 4

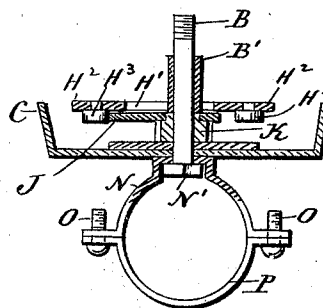


Fig. 5

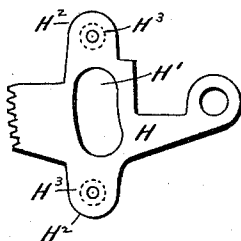


Fig. 6



Witnesses.
J. H. Shumway
Lillian D. Kellogg.

Leverett A. Sanford
Inventor
By Atty. Earle Seymour

UNITED STATES PATENT OFFICE.

LEVERETT ARTHUR SANFORD, OF BRISTOL, CONNECTICUT, ASSIGNOR OF
ONE-HALF TO DUNBAR BROTHERS, OF SAME PLACE.

BICYCLE-BELL.

SPECIFICATION forming part of Letters Patent No. 585,483, dated June 29, 1897.

Application filed August 10, 1896. Serial No. 602,235. (No model.)

To all whom it may concern:

Be it known that I, LEVERETT ARTHUR SANFORD, of Bristol, in the county of Hartford and State of Connecticut, have invented a new Improvement in Bells, (Case C;) and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a view in side elevation of a bell constructed in accordance with my invention; Fig. 2, a view thereof in vertical central section; Fig. 3, a plan view of the bell with the gong removed; Fig. 4, a view of the bell in vertical central section on the line *ab* of Fig. 3, with the gong removed, and designed to show the coaction of the multiplying-cam with the rolls carried by the vibrating plate; Fig. 5, a detached plan view of the vibrating plate; Fig. 6, a similar view of the multiplying-cam.

My invention relates to an improvement in portable bells of the type which are commonly known as "electric-stroke" bells from their fancied resemblance to electric bells in their mode of action, the object being to produce a strong, durable, and effective bell constructed with particular reference to brilliancy and power of tone, convenience of operation, and non-liability of derangement.

With these ends in view my invention consists in a bell having certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In carrying out my invention I employ a gong A, which may be of any approved construction and which is formed with a centrally-arranged inwardly-projecting hub A', having an internally-threaded socket to permit the gong to be applied to the threaded outer end of the centrally-arranged gong-post B, which is rigidly connected with the base C of the bell, the said base being also of any approved construction. The gong is struck a direct blow by means of a thick disk-shaped rebounding striker D, having an enlarged central aperture, which receives a stud E,

upon which it is retained by riveting down the upper end thereof or in any other approved manner, the said stud being mounted in the inner end of an oscillating or vibrating striker-arm, the outer end of which is pivotally connected with a striker-arm pivot or stud F, mounted in the base C, near the edge thereof, as shown in Fig. 2. The outer end of the said vibrating striker-arm is rigidly connected with a pinion G, extending below it and meshed into by means of a few teeth formed upon a vibrating horizontally-arranged plate H, having a segmental central opening H' for the clearance of the gong-post B and a rubber buffer B', encircling the same, and pivotally hung upon a stud I, mounted in the base at a point opposite the striker-arm stud F before mentioned. The said oscillating plate H is formed with two oppositely-projecting arms H² H², each of which is provided upon its lower face with an antifriction-roller H³, the said rollers being engaged for the oscillation of the plate by a three-armed multiplying-cam J, located between them and rotating upon the gong-post as upon a center. As shown, the cam has three equidistant corresponding arms, but I do not limit myself to a cam of the particular form shown, as the number of its arms and their form may be varied as desired. The said cam is actuated in rotation by its provision with a pinion K, located below it, and meshed into by a rack formed upon the inner end of an operating-lever L, swung upon the stud I and having its outer end formed with a finger-piece L', which projects through a lateral opening C', formed in the base of the bell.

A spiral spring M, attached to the operating-lever by means of a pin *m* and connected with the base by means of a pin *m'*, is provided for returning the parts to their normal positions after the lever has been swung in one direction against the tension of the spring by the rider, who places one of his fingers against the finger-piece and pushes the same against the tension of the spring.

Any form of clip may be used with my improved bell, the form shown consisting of two corresponding parts N N, secured at their

outer ends by means of a nut N' to the threaded projecting lower end of the gong-post B and having their lower ends connected by means of screws O O to the semicircular clip member P, the ends of which are turned outward to form perforated fingers, through which the said screws pass.

It will be readily understood that by the use of the multiplying-cam the motion derived from the oscillation of the operating-lever is multiplied in the vibration of the oscillating plate, and therefore in the vibration of the striker-arm. I am thus enabled by my construction to vibrate the oscillating arm very rapidly with the minimum operation of the operating-lever.

It is apparent that in carrying out my invention some changes from the construction herein shown and described may be made, and I would therefore have it understood that I do not limit myself to such construction, but hold myself at liberty to make such changes therefrom as fairly fall within the spirit and scope of my invention.

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

1. In a bell, the combination with an oscillating striker-arm furnished with a pinion, an oscillating plate meshing into the said pinion, a multiplying-cam coacting with the said plate and oscillating it, and means for rotating the said cam.

2. In a bell, the combination with a gong and a base, of a striker, a vibrating striker-arm furnished with a pinion, an oscillating plate engaged with the said pinion, a multiplying-cam coacting with the said plate to oscillate it, and provided with a pinion, and an operating-lever engaged with the pinion of the cam for actuating the same, whereby

the motion of the operating-lever is multiplied by the cam in the motion of the oscillating plate and striker-arm.

3. In a bell, the combination with an oscillating striker-arm, an oscillating plate coacting with the said arm to oscillate it, a multiplying-cam coacting with the said plate to oscillate it, and an operating-lever coacting with the cam to rotate it and hung upon the same center as the oscillating plate.

4. In a bell, the combination with a base, of a gong-post fixed therein, a gong applied to the said post, an oscillating striker-arm carrying a striker which engages with the gong to sound the alarm, an oscillating plate coacting with the striker-arm to oscillate it, a rotatable multiplying-cam rotating concentric with the said stud or post, and an operating-lever coacting with the said cam to rotate it.

5. In a bell, the combination with a base, of a gong-post located in the center thereof, a gong adapted to be applied to the said post, a striker-arm swiveled upon a stud located in the said base and provided with a pinion, an oscillating plate having teeth meshing into the said pinion and adapted to clear the said post, a rotatable multiplying-cam located beneath the said plate, coacting therewith to vibrate it, rotating concentric with the post and provided with a pinion, and an operating-lever hung upon the same center as the oscillating plate and furnished with a rack which coacts with the pinion of the multiplying-cam.

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

LEVERETT ARTHUR SANFORD.

Witnesses:

E. S. FISH,

R. A. SANFORD.