No. 703,332. Patented June 24, 1902.

P. C. ARNOLD.

BELL.

(Application filed Apr. 25, 1902.)

(No Model.)

Fig. 1

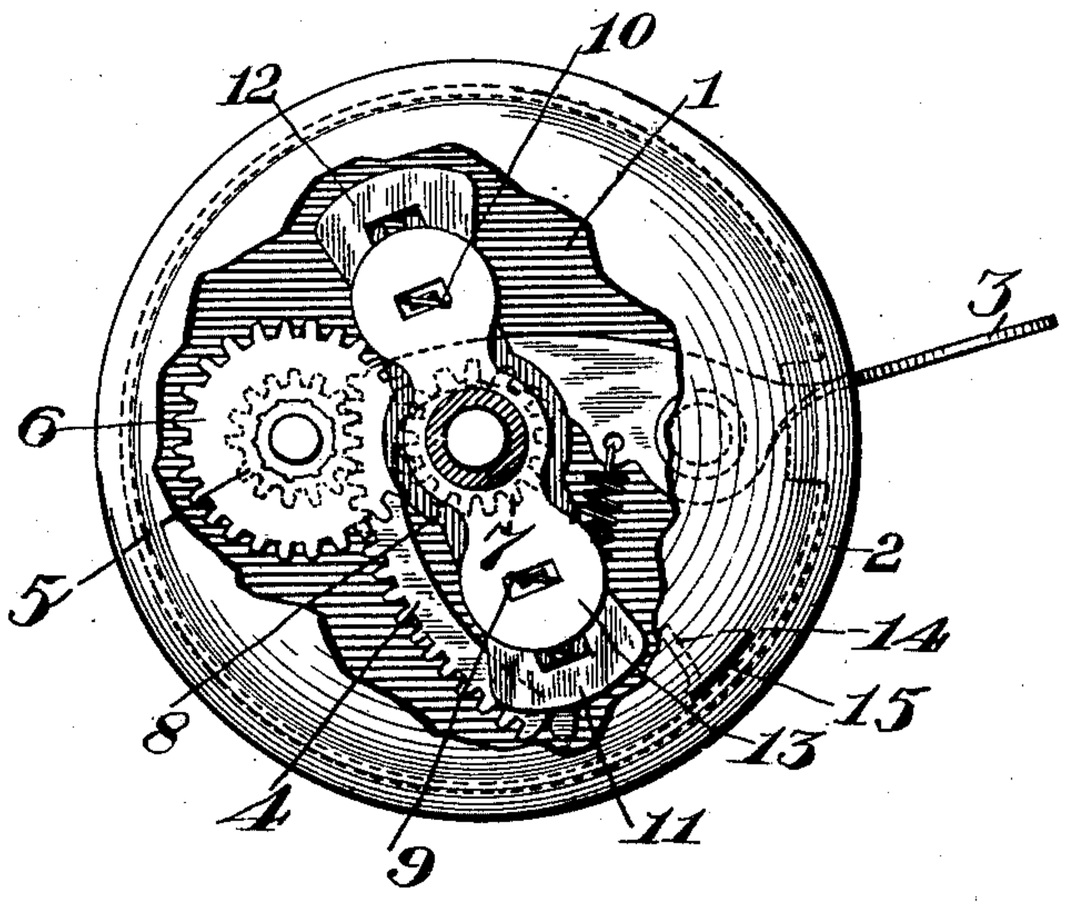

Fig. 2

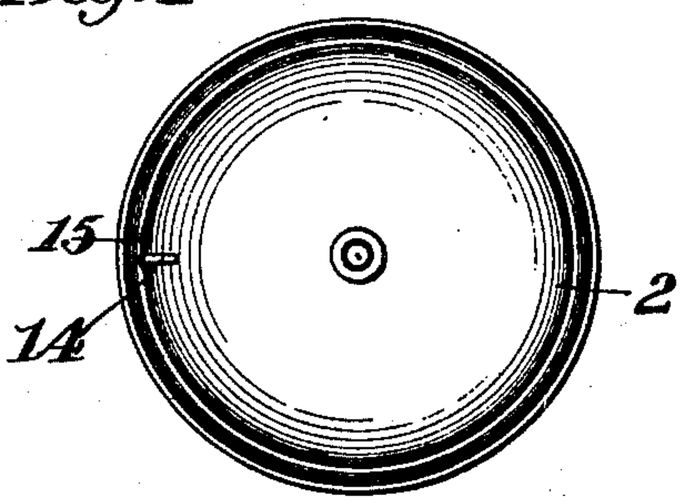

Fig. 3

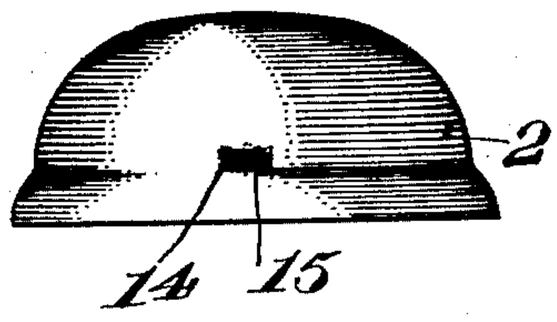

Fig. 4

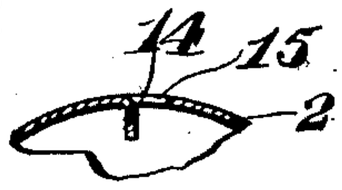

Fig. 5

Witnesses:
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UNITED STATES PATENT OFFICE.

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BELL.

SPECIFICATION forming part of Letters Patent No. 703,332, dated June 24, 1902.

Application filed April 25, 1902. Serial No. 104,694. (No model.)

To all whom it may concern:

Be it known that I, PHILIP C. ARNOLD, a citizen of the United States, and a resident of East Hampton, in the county of Middlesex and State of Connecticut, have invented certain new and useful Improvements in Bells, of which the following is a specification.

The invention relates to bells, and more particularly to the class of bells in which a rotary striking mechanism is used, the strikers of which upon rotation are projected against the gong to cause the proper vibration and sounding of the gong.

The object of the invention is to provide a suitable contact member upon the gong to be sounded with which the rotary strikers will come in contact as the striker-plate is rotated and to provide a contact member which will produce a perfect sounding of the gong.

A further object is to make the contact member an integral part of the gong, so that there can be no chance of "flat sound," which is so often present in gong-bells where the contact members or lugs are sweat on or cast in the gongs, and at the same time to produce this contact member by striking it up from the solid stock of the gong without altering the density of the gong at any point.

A further object is to produce a bell simple in construction and one which a gong struck out of sheet metal can be easily and cheaply made.

Referring to the drawings, Figure 1 is a plan view of a bell embodying the improvement with a portion of the gong broken away to show construction. Fig. 2 is a view looking at the inside of the gong. Fig. 3 is a side view of the gong. Fig. 4 is a detail view of a portion of the gong adjacent to the contact member. Fig. 5 is a detail view of a modified form of the device in which the lug is forced from the body of the gong.

In the accompanying drawings, the numeral 1 denotes the base-plate, and 2 the gong, of a bell, the striking mechanism for which is carried upon the base-plate. This striking mechanism comprises a thumb-lever 3, pivoted to the base-plate and having at its outer end a segmental rack 4, engaging a pinion 5, secured to and adapted to drive a gear 6, which latter meshes with a pinion 7, secured to the rotary striker-plate 8. The striker-plate has struck up from it lugs 9 10, which pass through perforated strikers 11 12 and also through a retaining-plate 13. This retaining-plate bears frictionally upon the strikers 11 12 and controls, to a certain degree, their movement. Obviously as the striker-plate is rotated through the intermediate gearing by a movement of the thumb-lever 3 the strikers 11 12, impelled by the centrifugal action, will be thrown outward and caused to engage the contact member 14, which projects from the inner surface of the gong and lies in the path of movement of the strikers. Several revolutions of the striker-plate are effected by a single oscillation of the thumb-lever, and thus the strikers 11 12 are repeatedly and successively brought into engagement with the projecting contact member 14, and the perforations in these strikers permit them to rebound, and thus prevent impeding of the sound of the gong.

The contact member 14 is formed by forcing inward a portion of the stock of the gong by any suitable die, leaving a rectangular opening 15 through said gong. In the case of struck-up gongs there are very material advantages in using a lug or contact member of this description, as it may be formed integral with the gong and being of absolutely the same material and having the same density the blow of the strikers against it will cause a perfectly clear and perfect vibration of the gong. The form of the lug 14 is entirely immaterial, although it is shown in the drawings as substantially rectangular, but obviously any form of die might be used, giving various forms to the lug, and so long as this lug is forced inward to a sufficient degree to lie in the path of movement of and be engaged by the strikers it answers all requirements. In fact the only requirement is that the lug shall be formed of the same material and without increasing the thickness or density of the gong in any particular part.

It is to be observed that in cast bells it has been the practice to cast a lug upon the inside of the gong, and thus at one point, at least, of the gong its thickness is materially

increased, and in fact a mass of metal is interposed which retards the proper and clear sounding of the gong. By striking the contacting lug out of the material a much better action is secured. The gong contains precisely the same amount of material as though no lugs projected from it.

In Fig. 5 of the drawings there is shown a slightly-modified form of the device, and in this case the lug is formed by two parallel cuts in the gong and forcing the material between said cuts inward to a sufficient distance to form the contact member.

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

1. A bell provided with a gong having a contact-lug formed integral with and struck out of the material of the gong.

2. In combination in a bell, a base-plate, striking mechanism, means for actuating said striking mechanism, a gong provided with a contact-lug formed integral with and struck out of the material of the gong and adapted to be engaged by the striking mechanism.

3. In a bell, in combination, a striking mechanism and strikers, a gong operatively arranged with relation to the strikers and provided with a contact-lug pressed out of the material of the gong and lying in the path of movement of the strikers, and means for actuating the strikers.

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