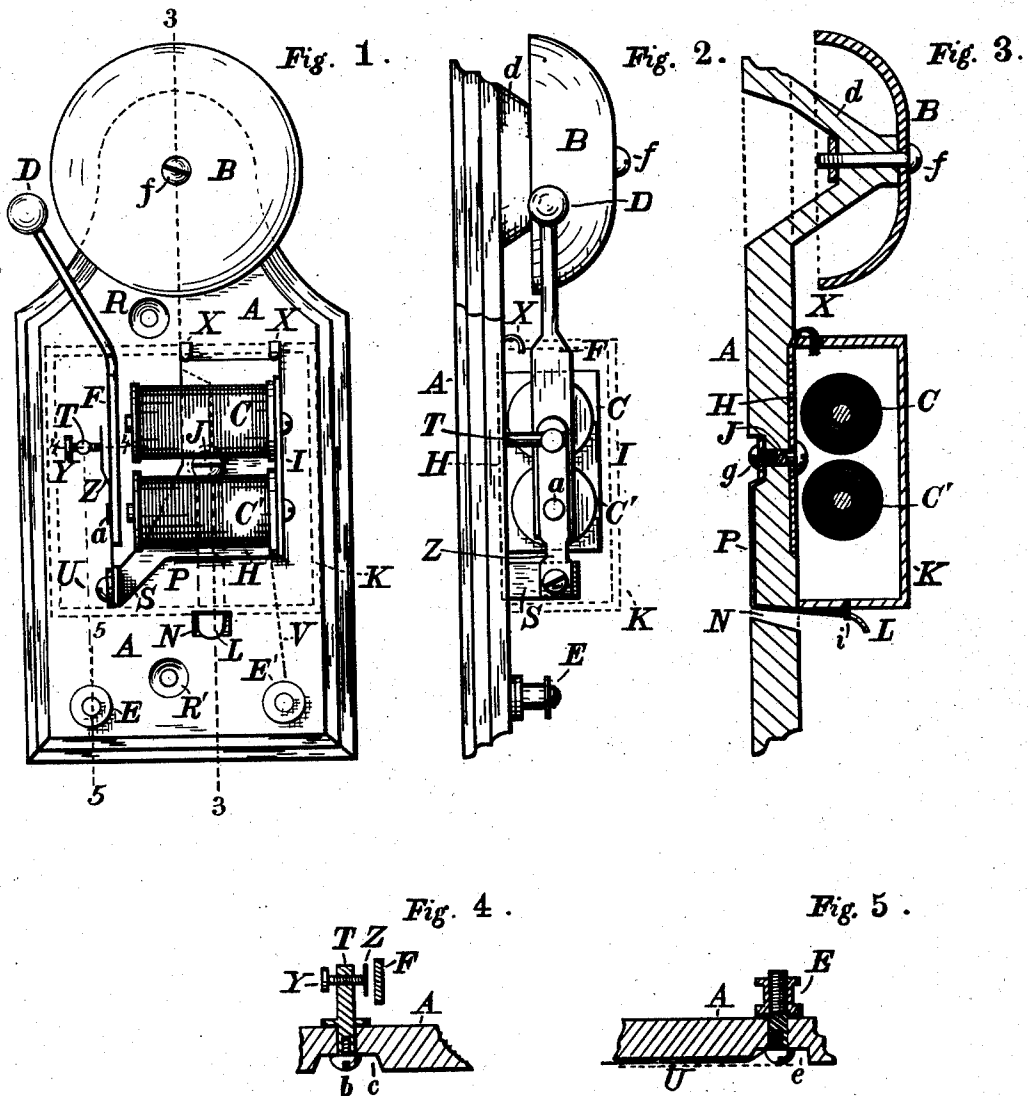


(No Model.)

N. H. RAYMOND.  
ELECTRIC BELL.

No. 483,309.

Patented Sept. 27, 1892.



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# UNITED STATES PATENT OFFICE.

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## ELECTRIC BELL.

SPECIFICATION forming part of Letters Patent No. 483,309, dated September 27, 1892.

Application filed August 29, 1891. Serial No. 404,053. (No model.)

*To all whom it may concern:*

Be it known that I, NELSON H. RAYMOND, a citizen of the United States, residing at Buffalo, in the county of Erie, in the State of New York, have invented certain Improvements in Electric Bells, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to certain improvements in electric bells provided with a porcelain base, whereby their construction is simplified and cheapened and they are rendered more durable in practical use and much less liable to get out of adjustment.

My improvements in electric bells are fully described and illustrated in the following specification and the accompanying drawings, and the novel features thereof specified in the claims annexed to the said specification.

In the accompanying drawings, representing my improved electric bell with porcelain base, Figure 1 is a front elevation. Fig. 2 is a side elevation. Fig. 3 is a longitudinal section on the line 3 3, Fig. 1. Fig. 4 is a transverse section through the armature, contact-screw, and insulated supporting-post on the line 4 4, Fig. 1. Fig. 5 is a section through one of the binding-posts on the line 5 5, Fig. 1.

My improved electric bell consists, essentially, of the base A, made of porcelain, china, or other similar material capable of acting as an insulator, the gong B, the magnet C or magnets C', striker D, armature F, and suitable electrical connections and devices for making and breaking the electric circuit. The base A is preferably made of molded porcelain adapted and arranged to support the various operative parts of the bell in their proper relative positions and to insulate the parts forming the electric circuit from each other. The base is provided with one or more perforations R R', adapted to receive the screws or other devices by which the bell is secured in place for use. At its upper end the porcelain base A is provided with a projecting boss *d*, formed integral therewith, and to which the gong B is secured by the bolt and nut *f* or other suitable device. This arrangement cheapens the construction of the bell by obviating the use of the post ordinarily employed to carry the gong. The boss

*d* is made of any suitable size or height, and to reduce the weight it may be made hollow, as indicated in Fig. 3. The opening for the bolt or screw *f* is formed through the boss at the time the base is molded.

The magnet C is secured to the porcelain base by the frame H, which fits into a suitable recess formed in the front of the base, as indicated in Fig. 3, being held in place by the bolt J, passing through an opening in the porcelain and fastened by a nut or screw in a recess *g* in the back of the base. As the frame H fits the recess in the front of the base, a single screw serves to hold it and the electro-magnet in place. The frame H is provided with a projecting plate I, to which the electro-magnet is secured in any suitable way. The frame H is also provided with one or more projecting hooks X, which engage in suitable openings in the cover K, which is fastened to the base by the pin *i*, Fig. 3, entering a hole in the spring L, which extends through the opening N in the base and along its rear side in a suitable recess, as indicated at P, Fig. 3, being secured in place by the nut or screw on the fastening device J. This construction enables me to attach the electro-magnet and the cover to the base by a single bolt or screw, and also provides for the insulation of the magnet from the posts T and E' and the other parts forming the electric circuit without any of the insulating devices ordinarily employed.

The electric current passes from the binding-post E' through the wire V, Fig. 1, to the electro-magnet and thence through the frame H and arm S to the spring Z, to the contact-screw Y, and thence to the binding-post E through the insulated post T and the wire U. When it is desired to ring the bell, the circuit is closed and, the spring Z being in contact with the screw Y, the electro-magnet attracts the armature F, causing the striker D to strike against the gong and breaking the circuit between the spring and the screw, when the magnet ceases to attract the armature and the spring carries it away from the magnet, thereby again closing the circuit and producing a repetition of the operation as long as the circuit remains closed.

The wires U and V may be located either

in front of or behind the base. I prefer, however, to locate them on the rear side in suitable channels formed for their reception, as indicated in Fig. 5. The lower end of the spring Z is attached to the arm S on the frame H. The spring thence extends upward, being fastened to the armature by one or more screws or rivets *a* and is offset or bent to bring it into suitable relation with the contact-screw Y.

The construction and arrangement of the contact-screw and its supporting-post will be understood from an examination of the sectional view Fig. 4. The contact-screw passes through a threaded hole in the upper end of the post, which is secured in an opening in the base by a nut or screw *b*, located in a recess in the rear side of the base. The porcelain base itself serves as an insulator for the supporting-post, thereby dispensing with the insulating devices necessary at this point in bells of the usual construction.

The heads of the screws by which the binding-posts are secured in place are located in suitable recesses in the rear side of the base, as indicated at *e*, Fig. 5, so that its surface is plane and without any projections, which might interfere with its attachment to a wall or other support. By the use of porcelain all openings for binding or other posts can without extra expense be made square or of such shape as to prevent the posts turning in the base should the screw become set or rusted.

The porcelain base may be ornamented in any preferred manner, and it may be colored to correspond or contrast with any surface to which it may be attached.

By constructing the porcelain base as herein described the cost of manufacturing electric bells is materially reduced, and they are made at the same time more ornamental and more durable and less liable to get out of adjustment. The cover K may also be made of porcelain or other similar material.

I claim—

1. The combination, in an electric bell, of the porcelain base A, having integral projecting boss *d*, the gong C, attached to the boss by screw *f*, and the electro-magnet C, having frame H, seated on the front of the base and secured thereto by a suitable attaching device, substantially as described.

2. The combination, with the porcelain base of an electric bell, of an electro-magnet having a frame seated in a recess in the front of the base and secured thereto by a suitable attaching device, substantially as described.

3. The combination, with the porcelain base of an electric bell, of the electro-magnet C, the frame H, cover K, spring L, passing through an aperture in the base, and bolt or screw J, substantially as described.

NELSON H. RAYMOND.

In presence of—

ALBERT A. HORTZELL,  
STEWART C. NEWTON.