No. 799,017. PATENTED SEPT. 5, 1905.

C. J. SCHWARZE.

ELECTRIC BELL.

APPLICATION FILED SEPT. 19, 1904.

2 SHEETS—SHEET 1.

Fig. 2.

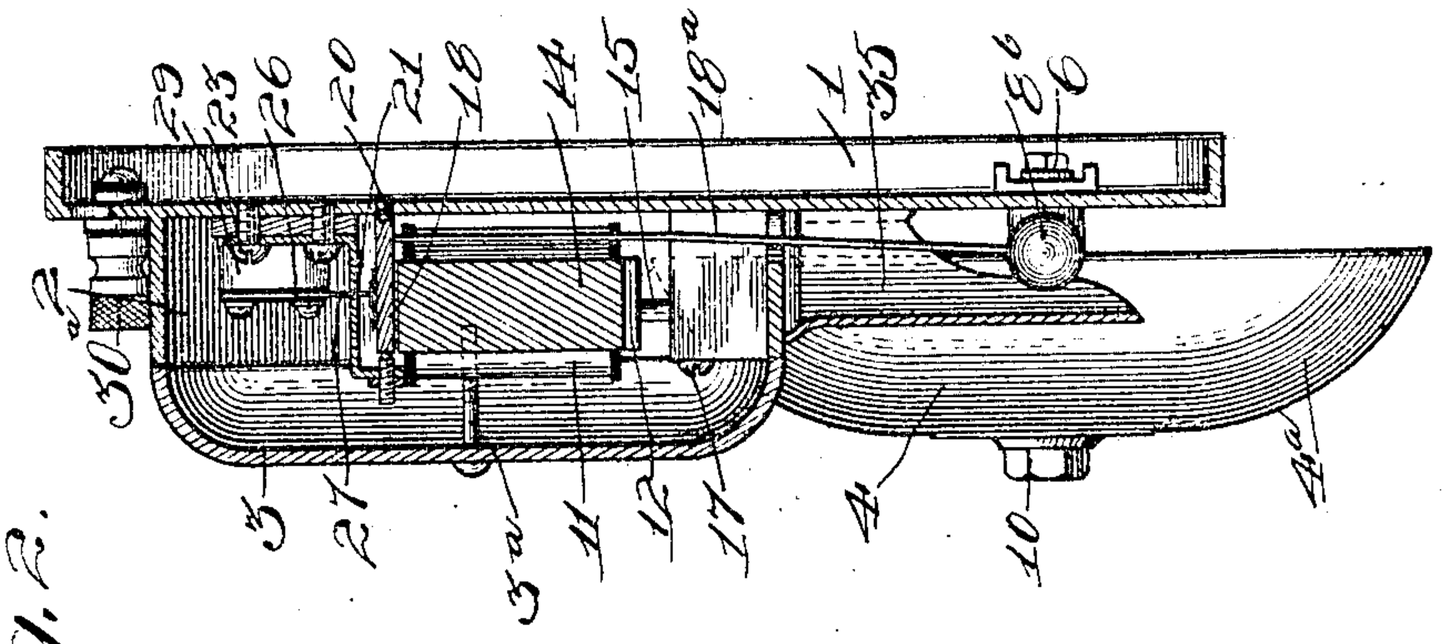
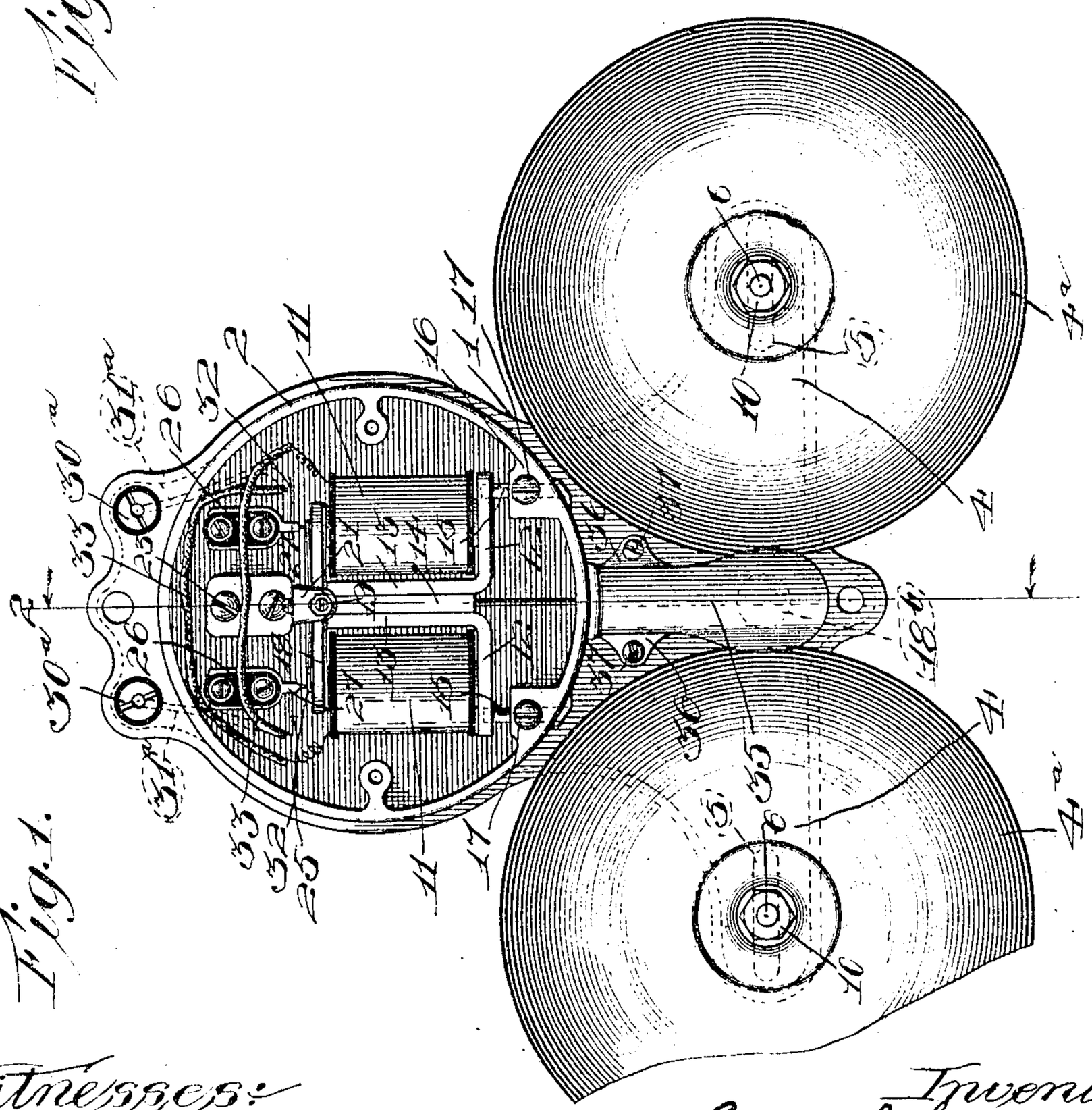


Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 3.

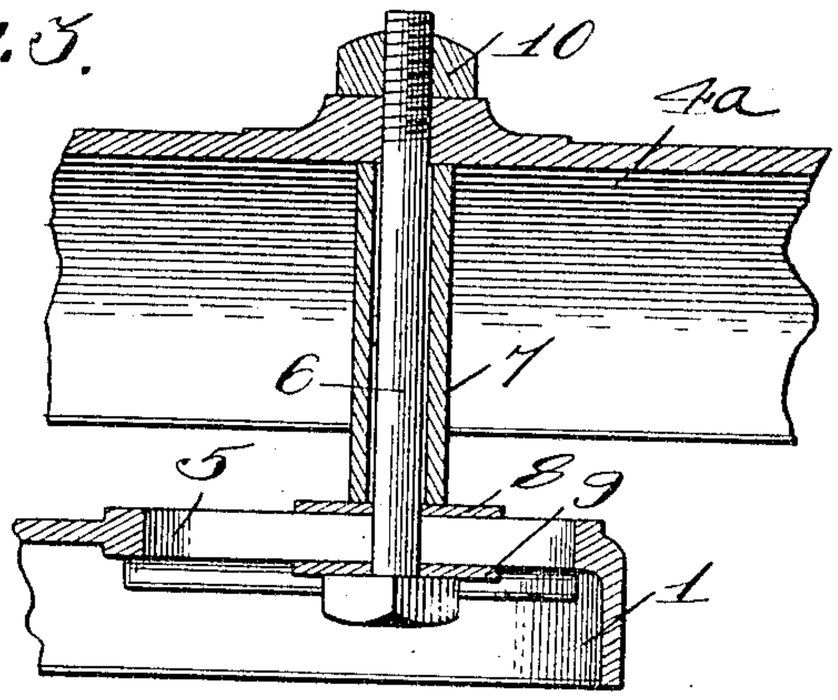


Fig. 4.

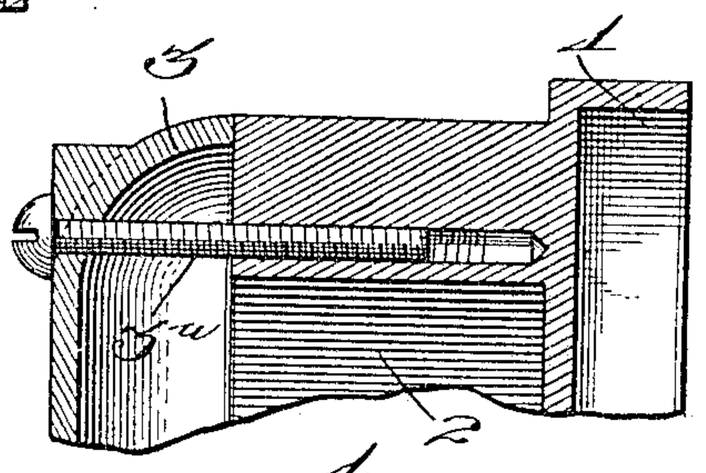


Fig. 5

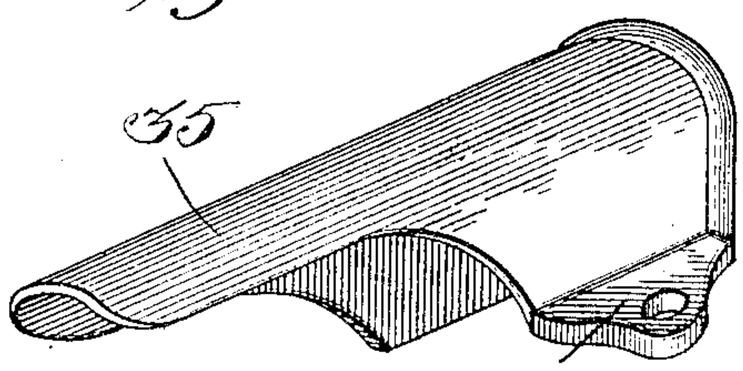
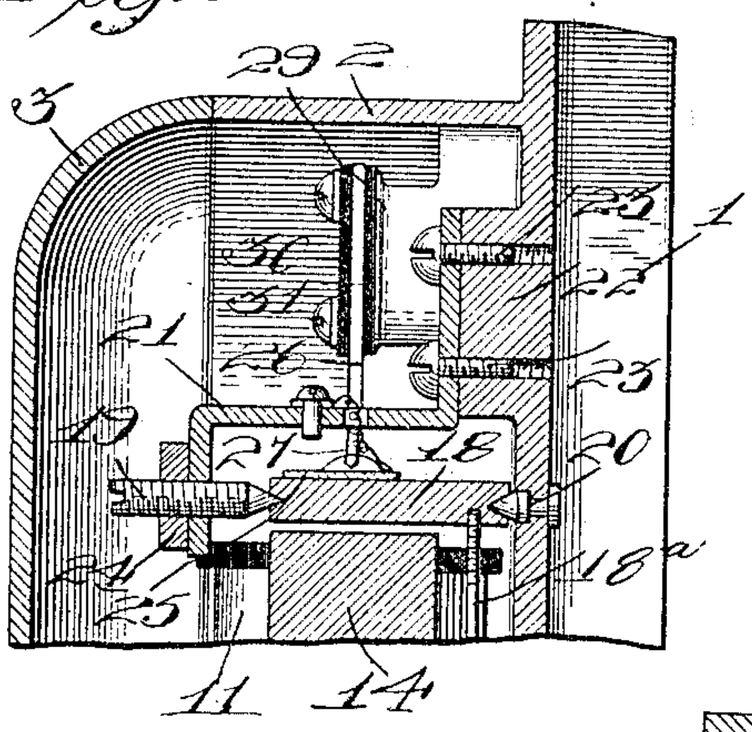


Fig. 7

Fig. 6



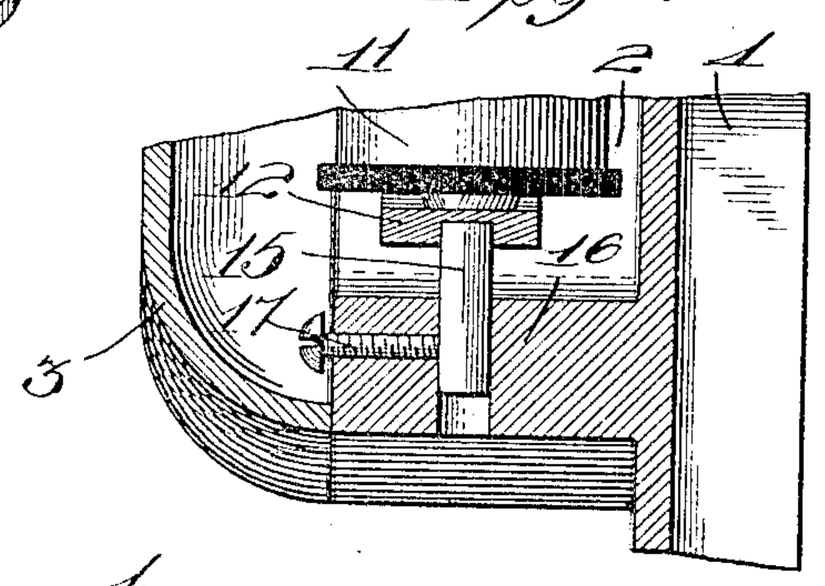
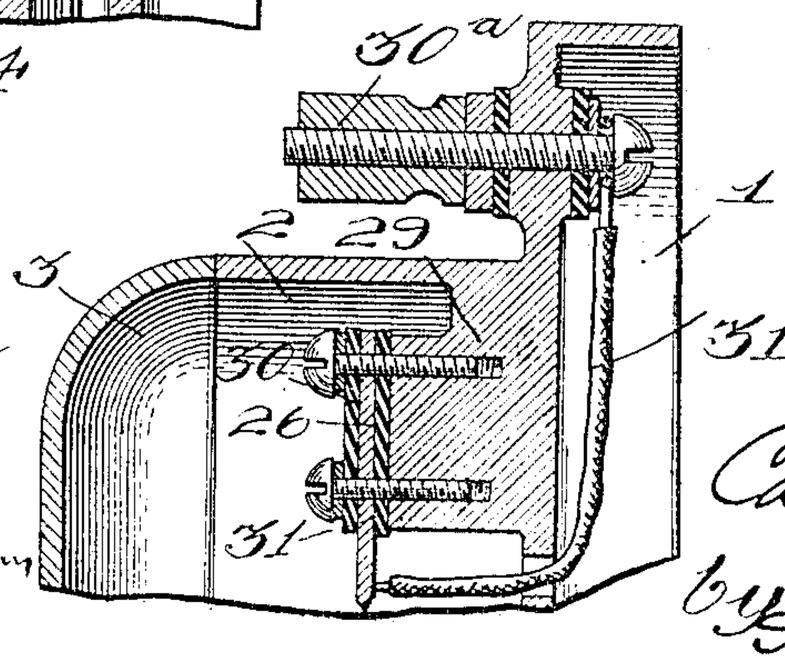


Fig. 8.



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UNITED STATES PATENT OFFICE.

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ELECTRIC BELL.

No. 799,017. Specification of Letters Patent. Patented Sept. 5, 1905.

Application filed September 19, 1904. Serial No. 225,042.

To all whom it may concern:

Be it known that I, CARL J. SCHWARZE, a citizen of the United States, residing at Adrian, in the county of Lenawee and State of Michigan, have invented a certain new and useful Improvement in Electric Bells, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to electric bells; and its object is to provide a simple, practical, and inexpensive construction of such bells.

In the accompanying drawings, Figure 1 is a view in elevation of a bell embodying my present invention having the cover of its containing-case removed. Fig. 2 is a section taken on line 2 2 in Fig. 1, with the cover, however, in place. Figs. 3, 4, 5, 6, 7, and 8 are views of details of construction.

The bell which I show herein for carrying out my present invention comprises a base 1, which is conveniently of cast metal. This base is provided with a circular wall 2, desirably cast integral with the base and having a cover 3, adapted to form with the wall 2 a case for containing the operating mechanism of the bell. The cover 3 is secured and held in position by screws 3^a 3^a, Figs. 3 and 4. The base 1 is constructed with lateral projections 4 4, upon which the gongs 4^a 4^a are mounted. The mounting of the gongs is best shown in Fig. 3. The projections 4 4 are provided with slots 5 5, through which bolts 6 6 are passed. Tubes or sleeves 7 7 are placed upon the bolts 6 6, and washers 8 and 9 are arranged on opposite sides of the plate forming the body of the base 1. The heads of the bolts 6 6 engage the lower washers 9 9, and the bolts are provided with nuts 10 10, which engage the gongs 4^a 4^a. Mounted in this way the gongs 4^a 4^a can be secured firmly in position and can be loosened, so as to permit their adjustment relatively to the base 1, as desired.

Within the circular containing-case 2 there is arranged a pair of magnets 11 11, which are provided with magnetic pole-pieces 12 12, the ends of which are bent and extended so as to lie between the two magnets. Between the bent ends 13 13 is arranged a strip of non-magnetic material 14. The magnets 11 11 are conveniently secured and supported in position by pins 15 15, which are fitted into the pole-pieces 12 12 and also into lugs 16 16, cast on the inner side of the annular wall 2, as shown in Figs. 1, 2, and 7. Set-screws 17 17 are provided to engage and lock the pins 15 15. A vibratory armature 18, carrying a hammer 18^a, is arranged adjacent the opposite ends of the magnets 11 11 and pivotally mounted between its ends upon pivots 19 and 20, Figs. 1, 2, and 6. The pivot 20 is set and secured in the plate of the base 1, and the pivot 19 is supported by a post or standard 21, which rises from and is secured to an elevation or projection 22 on said base 1 by screws 23 23. A set-nut 24 is provided on the pivot 19 to secure the same in adjustment.

The armature 18 is provided with a flat contact-strip 25, and contact-strips 26 26, having contact-points 27 27, are arranged above the armature 18, so that the contact-points 27 27 coöperate with the ends of the contact-strip 25. The contact-strips 26 26 are conveniently mounted on pedestals or standards 29 29, conveniently cast integral with the base 1, Fig. 6, the strips 26 26 being insulated from the base 1 by strips 30 31 of insulating material. A pair of binding-posts 30^a 30^a is mounted at the upper end of the base 1, and from these are extended conductors 31^a 31^a, which are connected with the contact-points 27 27 by short connecting-strips 32 32. From the conductors 32 32 are extended other conductors 33 33, each of which connects one of said conductors 27 27 to one end of the opposite electromagnets 11 11. The other ends of these magnets are connected with the frame of the bell. Thus the electromagnets 11 11 are connected in shunt, so that vibration of the armature 18 is accomplished by short-circuiting across the terminals of first one and then the other of said magnets. This form of connection for the electromagnets is more particularly described and claimed in an application filed by me July 25, 1902, Serial No. 117,032, and hence is not described at length herein.

The hammer 18^a of the armature 18 is extended down between the electromagnets 11 11 and out of the case 2, so that the clapper or ball 18^b on its end can strike the gongs 4^a 4^a. A shield or protector 35 is arranged to shield or protect the portion of the hammer outside of the case 2 from being struck or otherwise injured. This shield is much in the form of a badger's tail, covering the exposed portion of the hammer and open at the sides to permit the same to strike the bell. It is

conveniently provided with lateral projections or clips 36 36, having screw-holes to permit the use of screws 37 37 to secure it to the base 1.

The particular form of connections for the electromagnetic member which actuates the striking-hammer are, as previously stated, shown and described in my said other application, No. 117,032, and inasmuch as they are claimed therein also they will not be claimed alone in this application.

The arrangement of the pole-pieces 12 12 with their bent ends 13 13 and the interposed non-magnetic material 14 is set forth, described, and claimed in another application of mine filed May 31, 1904, Serial No. 210,475, and hence such features alone will not be claimed in this application.

It will be understood that changes and modifications can be made in the structure herein set forth without departing from the spirit of my invention.

What I claim is—

1. In an electric bell, the combination of a base having an annular wall formed integrally therewith, a circular cover for said wall, screws for securing the cover to the base, lateral projections on the base provided with slots, a pair of gongs, and bolts for attaching said gongs to said projections to permit adjustment in the slots thereof, substantially as described.

2. In an electric bell, the combination of an electromagnet, a base having a lug 16, a pin 15 extended from said lug 16 in contact with the pole-piece of said magnet, and a set-screw 17 for locking said pin in position, substantially as described.

3. In an electric bell, the combination with a pair of electromagnets, of pole-pieces 12, 12 therefor, a base having elevations or projections 16, 16 arranged opposite said pole-pieces 12, 12, pins 15, 15 extended between the pole-pieces 12, 12 and the lugs 16, 16, and inserted in the same, and set-screws 17, 17 for holding the pins 15, 15 in position, substantially as described.

4. In an electric bell, the combination of a vibratory armature 18 pivoted between its ends, and having contacts for making electrical connection on opposite sides of its pivot, contact-strips 26, 26 provided with contact-points 27, 27, arranged adjacent the opposite ends of the armature, and standards 29, 29 carrying said contact-strips 26, 26, substantially as described.

5. An electric bell, comprising a base provided with a circular closed case, an electromagnet having two cores arranged side by side, said magnet being confined within said case, means for securing the magnet to the base, a vibratory armature supported upon the base and provided with a hammer extending between said cores and out of the case, a pair of gongs secured to the base on opposite sides of the hammer, and a shield for protecting the exposed portion of the hammer, substantially as described.

6. In combination with two bells, a vibratory hammer, and a shield therefor provided with a tail portion extending over the hammer and transversely to the direction of its vibration.

In witness whereof I hereunto subscribe my name this 14th day of September, A. D. 1904.

CARL J. SCHWARZE.

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