

H. L. WUERFFEL.
 TELEPHONE SIGNAL BELL.
 APPLICATION FILED MAR. 26, 1909.

955,302.

Patented Apr. 19, 1910.

Fig. 1.

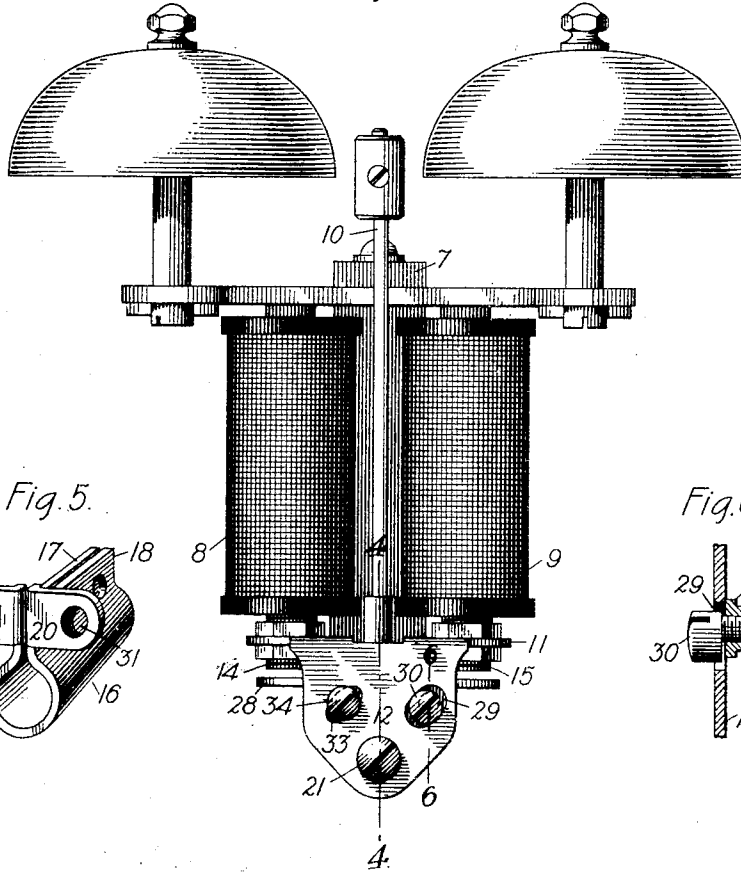


Fig. 5.

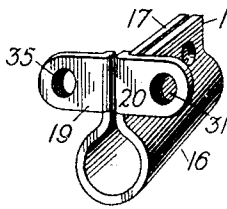


Fig. 6.

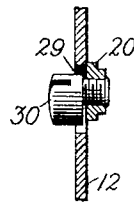


Fig. 2.

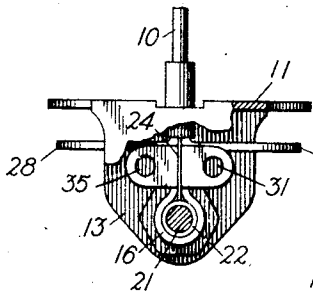


Fig. 3.

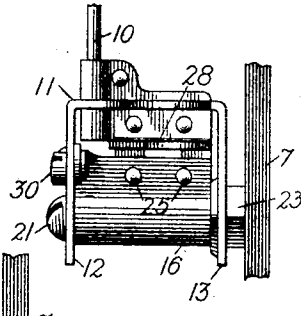
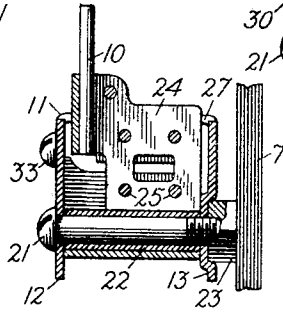


Fig. 4.



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UNITED STATES PATENT OFFICE.

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TELEPHONE SIGNAL-BELL.

955,302.

Specification of Letters Patent.

Patented Apr. 19, 1910.

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To all whom it may concern:

Be it known that I, HERMAN L. WUERFFEL, citizen of the United States, residing at Maywood, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Telephone Signal-Bells, of which the following is a full, clear, concise and exact description.

My invention relates to armature mountings for magnets—more particularly to mountings for the armatures of telephone ringers of the reed or harmonic type.

The object of my invention is to provide improved means for adjustably mounting the armature support of a telephone ringer and for securing it in its adjusted position.

In my invention a mounting plate is secured adjacent the electromagnet, preferably adjustably secured upon the poles of said magnet, and the armature support is pivotally mounted between front and rear brackets depending from said plate by means of a screw passing through said brackets and armature support and adapted to clamp the support. By means of this construction the armature support may be rocked or tilted through the desired range of movement when the screw is loosened, and may be clamped or locked in any desired position by merely tightening said screw.

Although the structure just described provides a simple and practicable armature mounting suitable for many purposes, I prefer, where a refined adjustment is required, to secure it by the use of a further feature of my invention, consisting of means for tilting or adjusting the armature support in either direction with respect to the plate whereon it is carried, and locking it in its adjusted position by means of a special device.

My invention may be more readily understood by reference to the accompanying drawing in which—

Figure 1 is a front elevation of a harmonic telephone ringer equipped with the armature mounting of my invention. Fig. 2 is a front elevation, partly in section, of the armature mounting; Fig. 3 is a side elevation of the

armature mounting; Fig. 4 is a vertical central sectional view on the line 4—4 of Fig. 1; Fig. 5 is a perspective view of the armature support; and Fig. 6 is a partial vertical sectional view on the line 6—6 of Fig. 1, showing means for tilting the armature support.

Like characters of reference are used to designate like parts throughout the various figures.

Referring to the drawings, 7 is a permanent magnet, 8 and 9 are electromagnets, and 10 is a bell tapper arm, the general structure and arrangement of which parts are too well understood by those skilled in the art to require detailed description.

Referring to Figs. 1, 2, 3, 4 and 6, a plate 11 having depending brackets 12 and 13 is mounted adjacent the poles 14 and 15 of the electromagnets 8 and 9. Preferably the plate is adjustably mounted upon said poles, as, for example, by providing apertures in the plate corresponding in size and position with the core extensions, and clamping said plate between nuts carried upon threaded parts of said extensions. Referring particularly to Fig. 5, showing the armature support isolated from its associated parts, said support may conveniently be a single piece of stamped metal comprising the cylindrical body portion 16 having longitudinal extensions 17 and 18 and lateral extensions 19 and 20. The armature support, as a whole, is adapted to fit between the depending brackets 12 and 13 of the plate 11 and is carried upon a screw 21 passing through a sleeve 22, which in turn is carried within the cylindrical portion 16, the head of the screw engaging the front bracket 12, and the threaded end of said screw engaging a nut 23 lying in a recess formed in the rear bracket 13, whereby the nut is prevented from turning. The permanent magnet 7 adjacent the nut prevents its dislodgment when the screw is withdrawn. Between the vertical longitudinal extensions 17 and 18 of the armature support, a flexible part 24 may be secured by rivets 25, said part extending freely through an aperture 27 in the plate

11, and having secured thereto the armature 28 and the bell tapper arm 10.

It will be readily understood that the structure as thus far described, provides a simple and practicable means for adjustably mounting the armature of a ringer, since, when the screw 21 is loosened, the armature 28, together with its support, may be tilted into any desired position with respect to the poles, and, by merely tightening said screw, may be securely held in said position. A more refined adjustment may, however, be attained by the use of a further feature of my invention, which consists in providing a slotted aperture 29 in the front bracket 12 of the plate 11, in which aperture a cam 30 may lie, said cam being rotatably carried in the opening 31 of the lateral extension 20 of the armature support, whereby, when the cam is rotated, the armature support is tilted with respect to the bracket 12 into any desired position and with extreme precision. A simple cam structure suitable for the purpose consists of a screw carrying an eccentric head, as shown in Figs. 1 and 6. As a further means of securing the armature mounting in its adjusted position, a slotted aperture 33 may be provided in the front bracket 12, through which a screw 34 may pass loosely and engage with the threaded opening 35 in bracket 19 of the armature support, said screw being adapted, when tightened, to secure the support in its adjusted position with respect to the bracket 12. It will be readily understood that although the clamping action of the screw 21 may be utilized as a locking means, the armature might be freely mounted upon a pin or pivot, and the screw 34 be solely relied upon to hold the armature support in its adjusted position. Also that, although in illustrating my invention the cam is shown as carried upon the movable part and acting upon the fixed part, this relationship might readily be reversed. It will likewise be obvious that my invention, although illustrated by embodiment in a telephone ringer, is not limited to such use, but is capable of general application to electromagnets wherein armature adjustment is desirable.

Having described my invention, I claim:

1. The combination with an electromagnet, of an armature for said electromagnet, a mounting plate secured adjacent said electromagnet, a support for said armature rotatably carried by said plate, a cam for adjusting said support with respect to said plate, and a locking device for holding said support in its adjusted position.

2. The combination with an electromagnet, of an armature for said electromagnet, a mounting plate secured adjacent said electromagnet, a support for said armature rotatably

carried by said plate, a cam rotatably mounted upon said plate and adapted to tilt said support with respect to said plate, and a locking device for securing said support in its adjusted position.

3. The combination with an electromagnet, of an armature for said electromagnet, a mounting plate secured adjacent said electromagnet, brackets depending from said plate, one of said brackets having an aperture, a support for said armature rotatably carried between said brackets, a cam carried by said support and lying within said aperture for adjusting said support with respect to said plate, and a clamping device for securing said support in its adjusted position.

4. The combination with an electromagnet, of an armature for said electromagnet, a mounting plate secured adjacent said electromagnet, two brackets depending from said plate, a rotatable support for said armature between said brackets, one of said brackets having a recess therein, a nut seated in said recess, and a screw passing through said support and brackets and engaging with said nut.

5. The combination with an electromagnet, of a mounting plate secured adjacent said electromagnet, brackets depending from opposite sides of said plate, a slotted aperture being provided in one of said brackets, an armature for said electromagnet, a support for said armature rotatably mounted between said brackets, a lateral extension from said support adjacent said aperture, a cam rotatably carried on said lateral extension and lying within said slotted aperture, said cam being adapted to tilt or adjust said support with respect to said depending brackets, and a screw for securing said armature support and said depending brackets in fixed relative position when the desired adjustment is secured.

6. The combination with an electromagnet, of a mounting plate secured adjacent said electromagnet, front and rear brackets depending from said plate, a slotted aperture being provided in the front bracket, a support rotatably mounted between said brackets, said support comprising a cylindrical body portion having lateral and vertical extensions, a flexible reed secured to the vertical extensions, an armature carried by said reed, a cam carried by said lateral extension and lying within said aperture, said cam being adapted to adjust said support with respect to said depending brackets, and a screw for securing said support in its adjusted position.

7. The combination with an electromagnet, of an armature therefor, a pin 21 mounted in fixed relation to the poles of said magnet, and an armature-support having a sleeve portion rotatably adjustable upon said pin.

8. The combination with an electromagnet
and its armature, of a supporting plate fixed
upon the pole pieces of said magnet and hav-
ing front and rear brackets, a pin mounted
5 in said brackets and extending across the
space between them, a collar surrounding
said pin and rotatably adjustable thereon,
means for holding said collar in its adjusted

position, and a vibratory reed fixed to said
collar and carrying said armature.

In witness whereof, I hereunto subscribe
my name this 20th day of March A. D., 1909.

HERMAN L. WUERFFEL.

Witnesses:

GEORGE E. FOLK,
GEORGE P. BARTON.