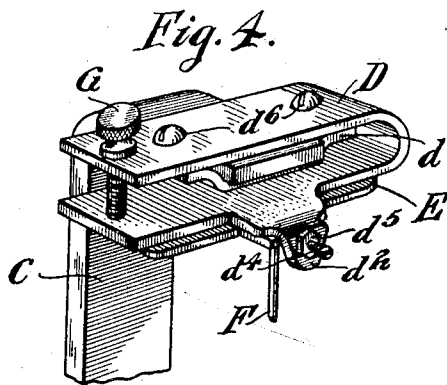
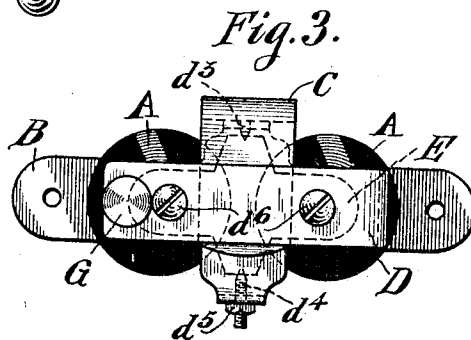
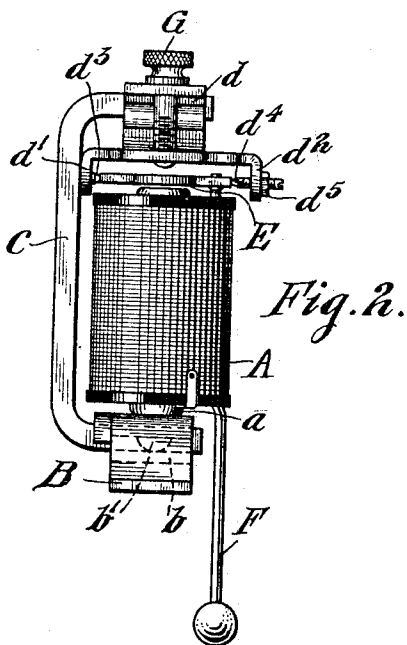
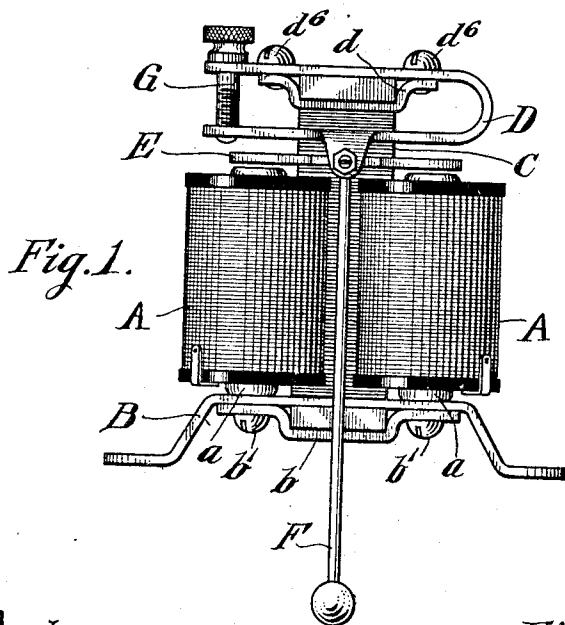


No. 819,049.

PATENTED MAY 1, 1906.

J. ERICKSON.
ELECTRIC BELL.

APPLICATION FILED OCT. 31, 1904.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN ERICKSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO AUTOMATIC
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ELECTRIC BELL.

No. 819,049.

Specification of Letters Patent.

Patented May 1, 1906.

Application filed October 31, 1904. Serial No. 230,756.

To all whom it may concern:

Be it known that I, JOHN ERICKSON, a citizen of the United States of America, and a resident of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Electric Bells, of which the following is a specification.

My invention relates to electric bells in general, but more particularly to bells of that type which are generally known as "polarized" bells, and especially to bells in which some provision is made for adjusting or varying the distance between the armature and the cores of the electromagnets.

Generally stated, the object of my invention is to provide an improved and highly-efficient electric bell; and a special object is to provide an improved construction and arrangement for adjusting the armature toward and away from the cores of the electromagnets; and another object is to obtain this relative adjustment between the electromagnet and its armature by adjustably mounting the armature upon the adjacent pole of the permanent magnet; and a further special object is to provide an improved construction and arrangement whereby the said adjustment may be obtained through the medium of a spring upon which the armature is mounted and which is adapted to be flexed toward and away from the electromagnet by means of an adjusting-screw; and it is also an object, of course, to provide certain details and features of improvement tending to increase the general efficiency and serviceability of an electric bell of this particular character, as will hereinafter more fully appear.

In the accompanying drawings, Figure 1 is a front elevation of an electric bell embodying the principles of my invention, the gong or resonating portion of the device being omitted for convenience of illustration. Fig. 2 is a side elevation of the device shown in Fig. 1. Fig. 3 is a top view of the device shown in Fig. 1. Fig. 4 is a perspective of the armature, the armature-mounting, and the portion of the permanent magnet to which the said mounting is secured.

As thus illustrated, my invention comprises a pair of electromagnets A, having the lower ends of their cores *a* suitably secured to a bracket-plate B. The lower pole-piece of

the permanent magnet C is secured to the middle portion of said bracket-plate by means of a strap or clamping-piece *b*. A U-shaped spring D has one of its parallel portions secured in a horizontal position to the upper pole or end portion of the said permanent magnet. This is preferably accomplished by means of a strap or clamping-plate *d*. The said U-shaped spring has its other parallel portion provided with a couple of ears *d'* and *d''*. Between these two ears the armature E is pivotally mounted upon cone-shaped portions *d'''* and *d''''*, secured, respectively, to the said ears. It will be observed that the cone-shaped portion *d'''* is provided by the tapered end of a screw held in its desired position by a lock-nut *d''''*. The striker F is secured to the armature in a suitable manner. With the arrangement shown the two end portions of the said U-shaped spring are connected by an adjusting-screw G. With this provision it is evident that the lower horizontal portion of the said U-shaped spring can be flexed toward and away from the electromagnet. In this way the armature, which is carried by the said spring, can be adjusted toward and away from the cores of the electromagnet. In other words, and broadly considered, the armature is adjustably mounted on the adjacent pole of the permanent magnet. More specifically considered, a flexible armature-mounting is employed as the medium of connection between the armature and the permanent magnet. As shown, the said spring and its strap or clamping-piece *d* are secured together by screws *d''*. In a similar way the bracket-plate B and its strap or clamping-plate *b* are secured together by screws *b'*, extending through the same and into the cores of the electromagnet.

It is obvious that the spring D can be so tensioned or sprung as to keep the head or shoulder of the adjusting-screw G constantly in contact with the upper end portion of said spring. In this way the screw can be tightened for the purpose of moving the armature away from the electromagnet-cores and can be simply loosened in order to effect an adjustment of the armature toward the electromagnet. In such case the tension of the spring is exerted to move the armature toward the electromagnets, while the normal tension of the spring is opposed in the ad-

justment of the armature in the opposite direction,

What I claim as my invention is—

1. An electric bell comprising an electro-
5 magnet, a flexible spring, an armature pivotally mounted upon said spring, and means for flexing said spring and thereby moving the armature toward and away from said
10 electromagnet, the armature being disposed between the spring and magnet.
2. An electric bell comprising a pair of
15 electromagnets, a bracket to which the cores of said magnets are rigidly secured, a permanent magnet having one pole rigidly secured to said bracket, and an armature for
20 said electromagnets, said armature being adjustably mounted upon the other pole of said permanent magnet, together with means
25 also carried by the permanent magnet for adjusting the armature toward and away
30 from the electromagnet, the armature being disposed between the said armature-adjusting means and magnet.
3. An electric bell comprising an electro-
35 magnet, a permanent magnet, an armature for said electromagnet, a flexible armature-mounting carried by the permanent magnet and to which the said armature is pivotally
40 secured, and an adjusting-screw for flexing said mounting and thereby moving the armature toward and away from the electromagnet, the armature being disposed between the
45 said mounting and magnet.
4. An electric bell comprising a permanent
50 magnet, a pair of electromagnets having their cores rigidly secured to one pole of said permanent magnet, a U-shaped spring secured to the other pole of said permanent magnet, one side portion of said U-shaped spring being
55 left free and positioned between the electromagnet-cores and the adjacent pole of the permanent magnet, an armature for said electro-
60 magnets, said armature being pivotally mounted upon the free portion of said spring, and a screw connecting the end portions of
65 said spring, whereby the said armature may be moved toward and away from the cores of the electromagnets.
5. The combination of a permanent mag-
70 net, a pair of electromagnets having their cores rigidly secured to one pole of said permanent magnet, an armature for said electro-
75 magnets, spring means tensioned to move

the armature toward the cores of the electro-
magnets, and screw-threaded means for op- 55
posing the tension of said spring means and moving the armature away from the cores of the electromagnets.

6. The combination of a pair of electro-
magnets having their cores rigidly connected 60
at one end, an armature for the other ends of said cores, a U-shaped spring upon which the said armature is pivoted, means for moving
65 the end portions of said spring toward and away from each other, and thereby moving the armature toward and away from the said
70 cores, a permanent magnet constituting a medium of rigid connection between one side of said spring and the rigidly-connected end portions of the said cores.

7. The combination of an electromagnet, a
spring held normally under tension, an arma-
ture for said magnet, the said armature being
mounted upon a movable portion of said
75 spring, and means for releasing said spring and allowing it to utilize its tension in moving the armature toward the electromagnet.

8. The combination of a bracket-plate, a
pair of electromagnets, a permanent magnet, 80
a strap or clamping-piece for securing together the said permanent magnet and bracket-plate, screws extending through both the bracket-plate and the said strap or
85 clamping-piece and into the cores of said electromagnets, a U-shaped spring turned on its side and straddling the other pole of said per-
90 manent magnet, another strap or clamping-piece for securing said spring and permanent magnet together, screws extending through the said spring and said last-mentioned strap
95 or clamping-piece, the free portion of said spring being provided with ears, an armature for said electromagnets, means for pivotally mounting said armature upon said
100 ears, a thumb-screw connecting the end portions of said spring, and whereby the said armature may be moved toward and away from the cores of said electromagnets, together with a striker secured to the said armature.

Signed by me at Chicago, Cook county,
Illinois, this 25th day of October, 1904.

JOHN ERICKSON.

Witnesses:

A. E. KEITH,
R. C. GIFFORD.