

No. 880,940.

PATENTED MAR. 3, 1908.

C. J. WAGNER.
ELECTRIC BELL.

APPLICATION FILED AUG. 15, 1907.

Fig. 1

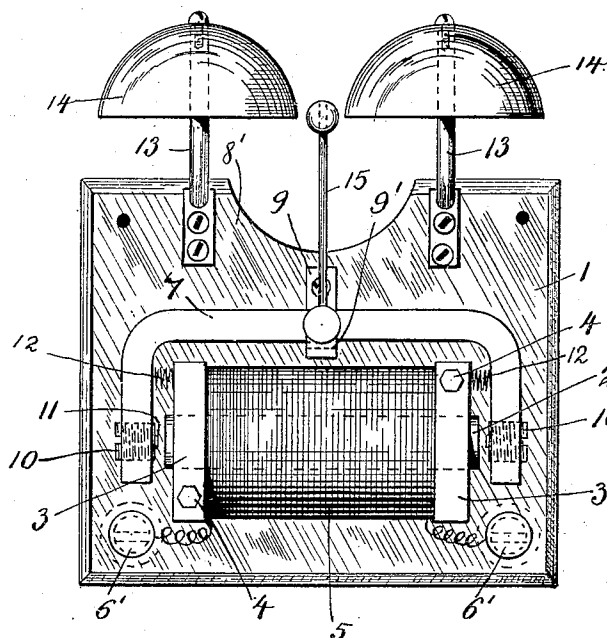
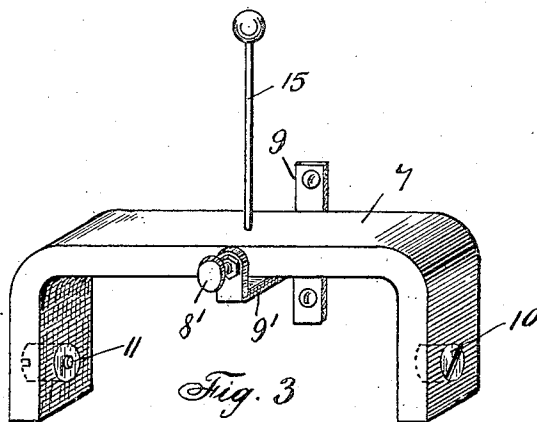
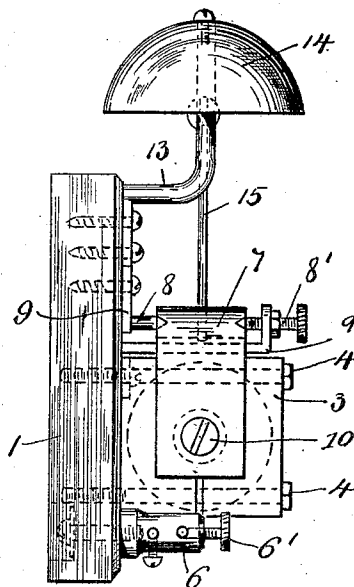


Fig. 2



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UNITED STATES PATENT OFFICE.

CHARLES JULIUS WAGNER, OF CHICAGO, ILLINOIS.

ELECTRIC BELL.

No. 880,940.

Specification of Letters Patent.

Patented March 3, 1908.

Application filed August 15, 1907. Serial No. 388,581.

To all whom it may concern:

Be it known that I, CHARLES JULIUS WAGNER, a subject of the Emperor of Austria-Hungary, and residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Electric Bells, of which the following is a complete specification.

This invention relates to improvements in electric bells, and more particularly to an electric bell adapted for use with alternating currents.

The object of this invention is to provide a very quick acting bell which will readily respond to the pulsations of the currents and produce a loud and clear sound.

It is a further object of the invention to provide an electric bell in which an oscillating permanent magnet controls the hammer and is provided with means which not only gives it a quick action, but also acts to normally center the hammer and hold the poles of the permanent magnet out of contact with the core of the electro-magnet when the current is off.

It is a further object of the invention to provide a very cheap and simple construction in which the permanent magnet is so balanced that it will operate under the influence of weak as well as strong currents.

The invention consists of the matters hereinafter described in the specification and more fully pointed out and defined in the appended claims.

In the drawings: Figure 1 is a top plan view of a device embodying my invention. Fig. 2 is a side elevation thereof. Fig. 3 is a perspective view of the permanent magnet and the pivoted bearing therefor.

As shown in said drawings: 1 indicates a base plate of marble, porcelain or any other preferred insulating material, upon which the operating parts of the bell are mounted. The core 2 of the electro-magnet is rigidly engaged near its ends in suitable supports 3 of wood or other non-conducting material, and which, as shown more clearly in Fig. 2, are slotted so that when they are engaged to the base plate by means of the bolts 4, which extend therethrough, they firmly grip the core in place. Upon said core is wound the coil 5 and the ends thereof are engaged in the binding posts 6 by means of the binding screws 6'.

A U shaped permanent magnet 7 is pivotally supported at its center to said base

plate at a point thereon equally distant from the supports 3. Said magnet may be supported in any preferred manner capable of permitting it to oscillate freely, but, as shown, two pointed trunnions, 8 and 8' are carried on suitable brackets 9 and 9' which are rigidly engaged to the base plate 1 in any suitable manner and engage in suitable sockets in the side of the magnet. The trunnion 8' has threaded engagement in the bracket 9' thereby enabling it to be adjusted with respect to the trunnion 8, and permitting the magnet to be removed when desired. The arms of said permanent magnet project past the ends of the core 2 and are provided, in alinement with said core, with screws 10 each of which has a point 11 of brass or other non-conducting material adapted to engage the core and prevent the magnet 7 from clinging thereto. Coiled springs 12 are engaged between the supports 3 and the arms of the permanent magnet and act normally to center the magnet 7 with respect to the core 2.

Rigidly engaged on the base plate by means of the stems 13 are the bells 14 which are spaced a distance apart, and a hammer 15 is engaged to the magnet 7, adjacent its pivotal point, and projects between said bells in position to alternately strike the same when said magnet is oscillated.

The operation is as follows: When an alternating current is sent through the electro-magnet the arms or poles of the permanent magnet are alternately attracted and repelled by the core 2, thereby causing said permanent magnet to oscillate on its pivot and cause the hammer to alternately strike said bells.

Obviously a bell constructed in accordance with my invention is adapted to strike in very rapid succession with a minimum amount of current and is not liable to get out of repair. Obviously also many details of construction may be varied without departing from the principles of my invention.

I claim as my invention:

1. In a device of the class described the combination with an electro-magnet, of a U shaped permanent magnet pivoted adjacent thereto, springs between the arms of the permanent magnet and the electro-magnet, a centrally disposed hammer on said permanent magnet and bells adapted to be engaged by said hammer.

2. In a device of the class described the combination with an electro-magnet of a U

shaped permanent magnet having its poles projecting into close proximity to the poles of the electro-magnet, adjustable contact pieces on the poles of the permanent magnet, 5 a spring between each pole of the permanent magnet and the electro-magnet, an adjustable pivot for said permanent magnet and a pair of bells adjacent said hammer.

3. In a device of the class described the 10 combination with a base plate of a bracket thereon, oppositely directed trunnions on said plate, a U shaped permanent magnet pivoted at its center on said trunnions, an electro-magnet rigidly engaged on the plate 15 between the poles of said permanent magnet, springs normally holding the poles of said magnets out of contact, a hammer on said permanent magnet and bells adjacent thereto adapted to be struck by said hammer.

20 4. In a device of the class described the combination with a base plate of a pair of oppositely directed trunnions thereon, one of which is adjustable with respect to the other, a U shaped permanent magnet pivoted at its 25 center on said trunnions, an electro-magnet rigidly engaged on said plate intermediate the poles of the permanent magnet, means acting

normally to hold the poles of the permanent magnet out of contact with the core of the electro-magnet, adjustable contacts on the 30 poles of the permanent magnet, a hammer engaged on said permanent magnet at its pivoted point and extending outwardly therefrom and a pair of bells on said plate adapted to be engaged by the hammer. 35

5. In a device of the class described the combination with a base plate of a bracket thereon, a pair of trunnions on said bracket, one of which is adjustable with respect to the 40 other, a U shaped permanent magnet pivoted on said trunnions, an electro-magnet rigidly engaged on said plate, a spring between each end thereof and the permanent magnet, a pair of stems on said plate, a bell 45 on each stem and a hammer on said permanent magnet projecting between said bells.

In witness whereof I have hereunto subscribed my name in the presence of two witnesses.

CHARLES JULIUS WAGNER.

Witnesses:

AUG. STINE,

JOHAN PFEIFER.