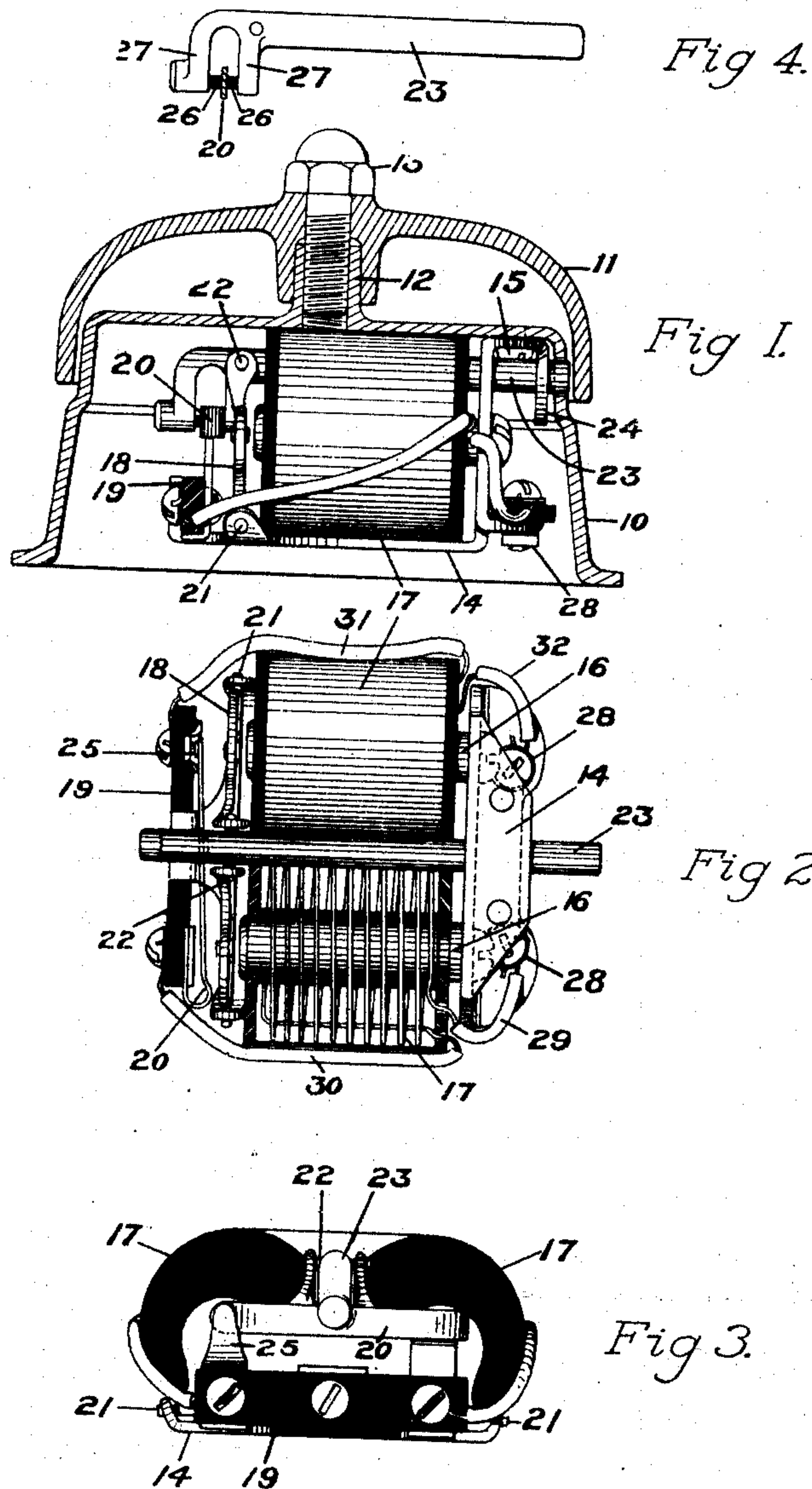


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PATENTED DEC. 17, 1907.

J. F. McELROY.
ELECTRIC BELL.

APPLICATION FILED FEB. 21, 1907



Witnesses.

G. Blake
W. R. Schulz.

Inventor.
James F. McElroy
by Robert M. Pierson

Attorney.

UNITED STATES PATENT OFFICE.

JAMES F. McELROY, OF ALBANY, NEW YORK, ASSIGNOR TO CONSOLIDATED CAR HEATING COMPANY, OF ALBANY, NEW YORK, A CORPORATION OF WEST VIRGINIA.

ELECTRIC BELL.

No. 874,024.

Specification of Letters Patent.

Patented Dec. 17, 1907.

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To all whom it may concern:

Be it known that I, JAMES F. McELROY, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Electric Bells, of which the following is a specification.

This invention relates to electro-magnetic trembler bells, and its object is to provide an improved compact structure in which the electrical conductors are insulated from the frame of the bell, such bells being especially adapted for use on high-voltage circuits such as the power circuits of trolley-cars, the insulated construction preventing the occurrence of injury or shock due to a person's accidentally touching the bell.

Of the accompanying drawings, Figure 1 represents a view in vertical section and elevation showing an electric bell embodying my invention. Fig. 2 represents a plan and section showing the interior parts removed from the frame. Fig. 3 represents an end view of such parts. Fig. 4 represents a detail view of the hammer and vibrator.

10 is a cup-shaped hollow base or frame having the sounding bell 11 attached to its upper side by a suitable post 12 and screw 13.

14 is a sub-frame attached by screws 15 to the under side of the top wall of base 10 and supporting the main working parts. This frame forms the yoke for the magnet cores 16 on which the wire spools 17 are mounted, and it is extended out below and in front of said spools to support the pivoted armature 18 and a horizontal cross-bar 19 on which the vibrator 20 is mounted.

21 is a pivot at the lower end of the armature 18, and 22 is a pivot at its upper end connecting it with one end of the horizontal hammer 23. The striking end of the latter is supported in an aperture in a down-turned lip 24 on the sub-frame, and projects through a hole in the base 10 so as to strike the inner side of bell 11.

The vibrator 20 comprises a flat spring fixed by one end to the insulating bar 19 and cooperating with a fixed contact 25 at the opposite end of said bar so as to constitute an interrupter for the circuit of the bell magnet. Its connection with the hammer 23 and the armature 18 is effected by interposing the middle of the vibrator between two short posts 26 of insulating material

mounted in jaws 27 formed on the end of the hammer and the effect of this construction is to completely insulate the vibrator from the hammer, armature, and frame of the bell while also constituting a means for transmitting the motion of the armature to the vibrator.

28, 28 are suitable binding-posts for the leading-in wires of the bell and 29, 30, 31, 32 are wires for connecting in series the binding-posts, the magnet, and the vibrator.

By the above construction all parts are compactly mounted and mainly contained within and protected by the hollow base while the electrical conductors are thoroughly insulated from the frame and all externally exposed metal parts of the bell.

It will be observed that the base 10 is an inverted hollow cup with the bell 11 attached on the outer side of its bottom wall and overlapping the bottom wall portion of said base while the magnet and working parts are attached on the inner side of said bottom wall. Thus the working parts are protected even when the bell 11 is removed and are accessible through the open end of the base by detaching the base from its support, to which latter the base may be secured by suitable fastenings engaging its marginal flange. Also it will be observed that the subframe 14 which may be struck up out of sheet metal is made substantially L-shaped with a portion at right-angles to the bottom wall of the base 10 for affixing the magnet cores and attaching the subframe to the base, and a portion parallel with said bottom wall carrying the pivoted armature and vibrator. The maximum compactness and simplicity are thus attained. The spring vibrator 20 operates both to yieldingly retract the hammer 23 after the circuit is broken at 25 and also to limit this retracting movement through the agency of the insulating blocks 26 embracing the vibrator arm.

I claim:—

1. An electric bell comprising an inverted cup-shaped base with a sounding bell attached to the outer side of its bottom wall and overlapping the outer portion of the base, a magnet attached to the inner side of said bottom wall, a sliding hammer substantially parallel to the bottom wall and projecting through the side wall of the base to engage the inner side of the bell, a pivoted ar-

mature engaging said hammer, and a circuit interrupter operated by the armature.

2. An electric bell comprising a hollow base, a sounding-bell mounted thereon, a two-spool magnet contained within said base, a sliding hammer mounted between the magnet spools and having its striking end slidably supported and projecting through the wall of the base to contact with the inner side of the sounding-bell, an armature pivoted by one end and having its opposite end pivoted to and supporting one end of the hammer, and a circuit interrupter operated by said armature.
3. An electric bell comprising an inverted cup-shaped base with a sounding bell mounted on the outer side thereof, a substantially L-shaped sub-frame attached to the bottom wall of the base on the inner side thereof and having a portion at right-angles to said bottom wall and a portion parallel thereto, a magnet attached to the right-angled portion of the sub-frame between the parallel portion and the bottom wall, a hammer adjacent to and parallel with the bottom wall, an armature at right-angles to the bottom wall pivoted at one end to the sub-frame and at the other end to the hammer, and a circuit-interrupter operated by the armature.
4. An electric bell comprising an electromagnet, an armature therefor, a hammer connected with said armature and having a pair of insulating blocks, and an independently mounted spring vibrator arm interposed between said blocks for interrupting the magnet circuit and for producing and

limiting the retracting movement of the hammer.

5. An electric bell comprising a hollow base, a sounding-bell mounted thereon, a sub-frame mounted within said base and carrying magnet-spools, a hammer mounted between said spools and having a pair of jaws at the end opposite the striking end, a spring vibrator-arm mounted between and insulated from said jaws for interrupting the magnet circuit and also insulated from the sub-frame, and an armature pivotally connected at one end with said sub-frame and pivotally connected at its opposite end with the jaw end of said hammer.

6. An electric bell comprising a hollow structure including a base and an attached sounding bell, a sliding hammer movable diametrically of the bell to strike its inner side, a magnet within said structure having its core parallel with the hammer, an armature pivoted at one end to the base and at the other end pivotally supporting the hammer, and a circuit-interrupting spring arm projecting across the hammer and the armature and having an insulated engagement with the pivotally-supported end of the hammer.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses, the 16th day of February 1907.

JAMES F. McELROY.

Witnesses:

BEULAH CARLE,
ERNEST D. JANSEN.