

(No Model.)

F. DAVEY.
ELECTRIC BELL.

No. 568,668.

Patented Sept. 29, 1896.

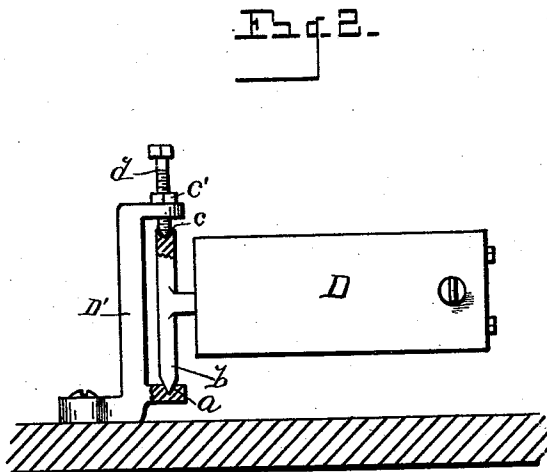
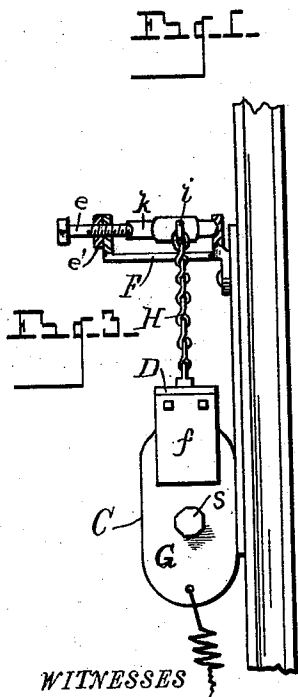
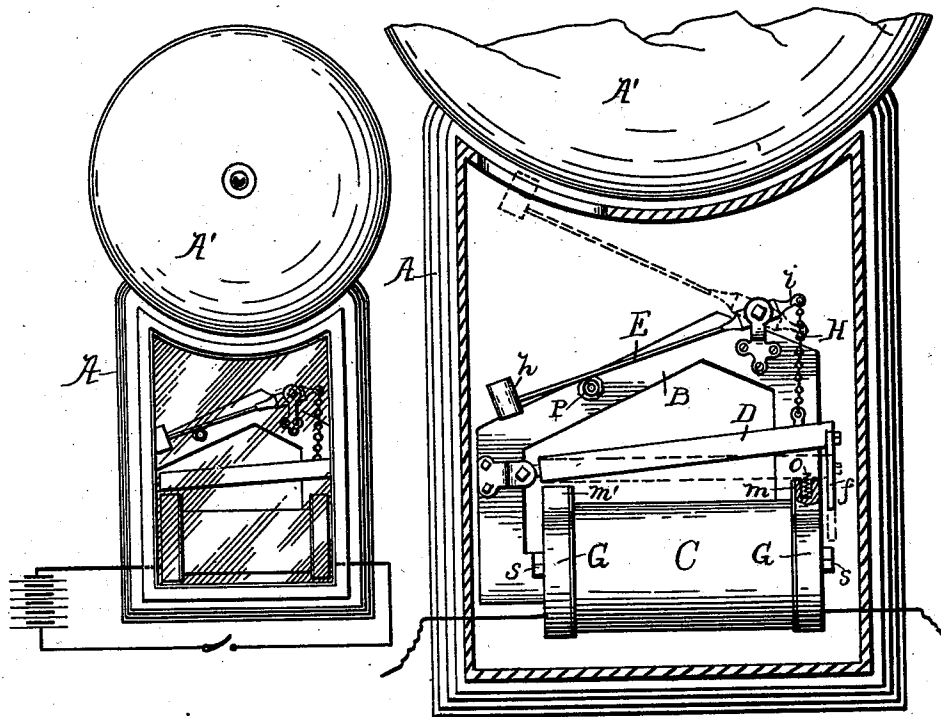


Fig. 4.

WITNESSES
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UNITED STATES PATENT OFFICE.

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ELECTRIC BELL.

SPECIFICATION forming part of Letters Patent No. 568,668, dated September 29, 1896.

Application filed February 17, 1896. Serial No. 579,516. (No model.)

To all whom it may concern:

Be it known that I, FORIEST DAVEY, a citizen of the United States, residing at Detroit, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Electric Bells; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in electric bells; and it consists in the construction and arrangement of parts hereinafter fully set forth, and pointed out particularly in the claims.

The object of the invention is to produce an electric bell of simple and inexpensive construction in which the arrangement is such as to provide for but a single stroke of the bell upon each closing of the circuit, producing a powerful, efficient, and reliable single-stroke bell, which object is attained by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of my improved bell, showing its connection with an electric circuit. Fig. 2 is an enlarged elevation, the case containing the mechanism being in vertical section and the bell being partially broken away, showing more clearly the construction and arrangement of parts. Fig. 3 is a side elevation, some of the parts being partially broken away, showing the pivoting of the hammer and the chain connection between the hammer and the armature; and Fig. 4 is an enlarged plan of the armature, and showing by detail section the manner of pivoting the armature and manner of mounting it upon the base.

Referring to the letters of reference, A designates a suitable base, preferably of wood, upon which the mechanism is mounted, said mechanism being secured to a suitable metal frame B, which is in turn secured to said base. The actuating mechanism consists of the electromagnet C, of suitable construction, the poles of which stand in a vertical posi-

tion. The armature D of said magnet, which extends horizontally across the poles thereof, is pivotally mounted at one end by means of a shaft *b*, which stands transversely of the armature and is attached thereto, said shaft being pivoted in a suitable hanger D', one end of said shaft having a conical point *a*, which is received in a corresponding bearing of said hanger, and the opposite end having a recess *c*, which receives the conical end of a set-screw *d*, which passes through said hanger and engages the end of said shaft, being secured in place by a set-screw *a'*. Depending from the outer or free end of the armature is a right-angle plate *f*, which at all times stands adjacent to the end of the magnet and within the field thereof, thereby assisting to more quickly start the armature when the magnet is energized.

E designates the arm of the hammer, carrying upon its outer end the mallet *h*, said arm being pivotally mounted in a hanger F through the medium of the cross-shaft *k* carried thereon, the ends of which are provided with conical bearings, which are adjusted through the medium of the set-screw *e*, which may be secured, when adjusted, by a set-nut *e'*. The hammer is located directly over the armature and is connected thereto by means of a small chain or other suitable flexible connection H, one end of which is attached to the movable end of the armature and the opposite end to the outer end *i* of the arm of the hammer, which extends beyond its point of pivot. With this arrangement, upon the energizing of the electromagnet by the closing of the circuit the armature is quickly attracted and drawn down into contact with the pole of the magnet, thereby swinging the mallet of the hammer against the bell, as shown by dotted lines in Fig. 2.

The length of the chain H is such that when the armature is in contact with the pole of the magnet the mallet of the hammer will stand free from the bell when the parts are in repose; but the quick action of the armature, through the energizing of the magnet, imparts such impetus to the hammer as to throw it against the bell with great force, causing the chain H to slacken as the hammer swings beyond the point where it is car-

ried by said chain, so that after striking the bell the hammer drops back free therefrom, making but one stroke, and remaining in this position until the circuit is opened, when the armature is raised by the weight of the hammer, which drops back against the stop-pin *p*, as shown in Figs. 1 and 2, when by again closing the circuit the hammer is again thrown against the bell, and so on, the bell making but a single stroke upon each closing of the circuit, which is accomplished through the flexibility of the connection between the arm of the hammer and the armature, rendering the bell peculiarly adaptable for signaling on shipboard, where a reliable gong is indispensable, and for other purposes.

Located in one of the poles of the armature is a small coiled spring *o*, which stands slightly above the face thereof and which serves to release the armature upon the breaking or opening of the circuit.

Having thus fully set forth my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a single-stroke electric bell, the combination of the electromagnet, the pivoted armature, the pivoted hammer and the gong adjacent thereto, and the flexible line or strand connecting the movable end of the armature with the end of said pivoted hammer.

2. In a single-stroke electric bell, the combination with the electromagnet located with a source of electricity in a normally open circuit, the pivoted armature, the pivoted hammer adjacent to the bell located above the armature and the chain connecting the movable end of the armature with the pivoted arm of the hammer.

3. In a single-stroke electric bell, the combination with the electromagnet, the pivoted armature having a right-angle end piece which stands at all times within the field of the magnet, the bell, the pivoted gravity-hammer and the flexible connection between said hammer and armature.

4. In an electric bell, the combination with the electromagnet the armature pivoted above said magnet and having a right-angle end piece which stands at all times within the field of said magnet, the hammer pivoted above said armature, the bell adjacent to said hammer and the chain connecting the outer end of the pivoted hammer with the movable end of said armature.

In testimony whereof I affix my signature in presence of two witnesses.

FORREST DAVEY.

Witnesses:

ADDY A. BOSS,
MARTIN J. BOSS.