(No Model.) 2 Sheets—Sheet 1.

T. J. SMITH.

ELECTRIC CALL BELL.

No. 408,676. Patented Aug. 6, 1889.

Fig 1

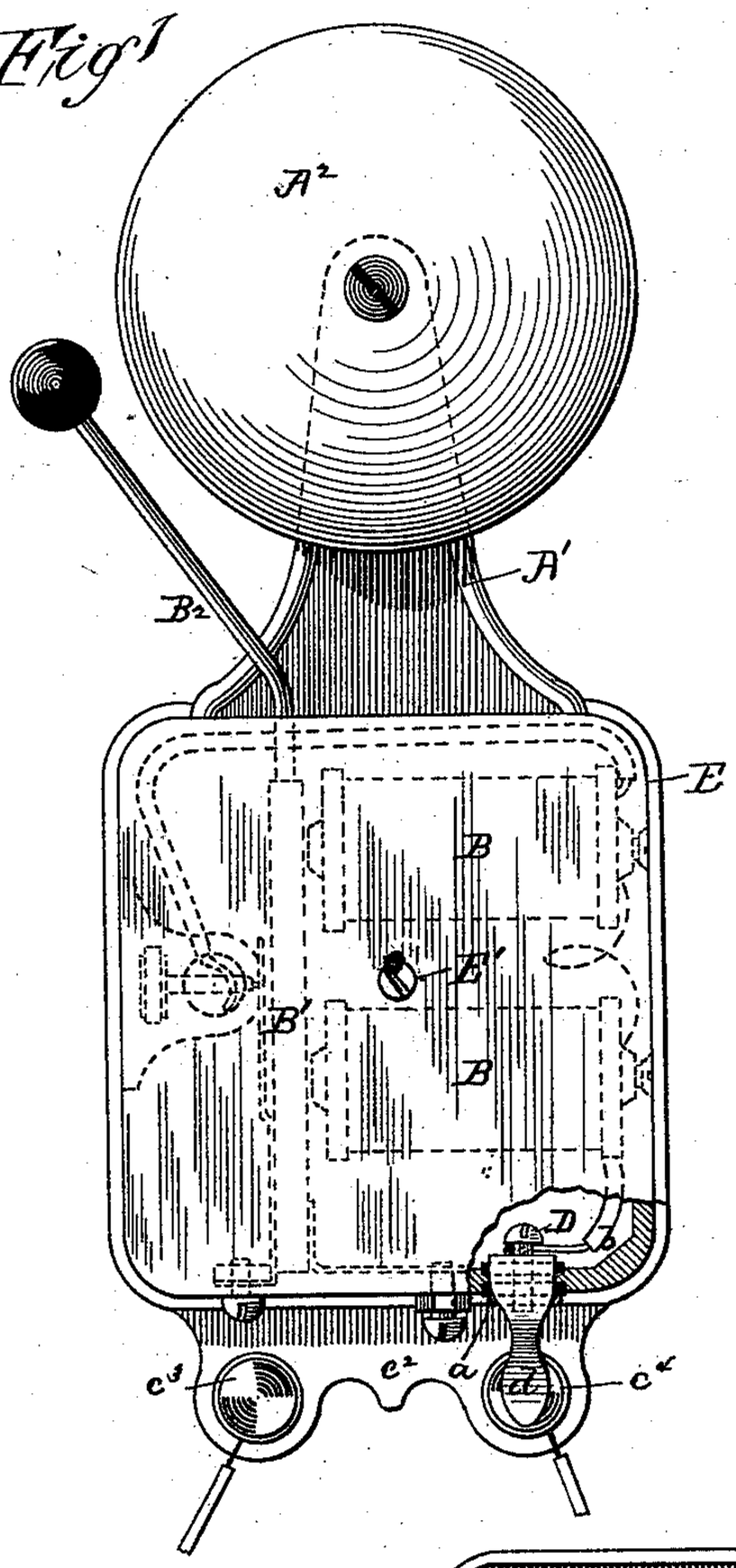

Fig 2

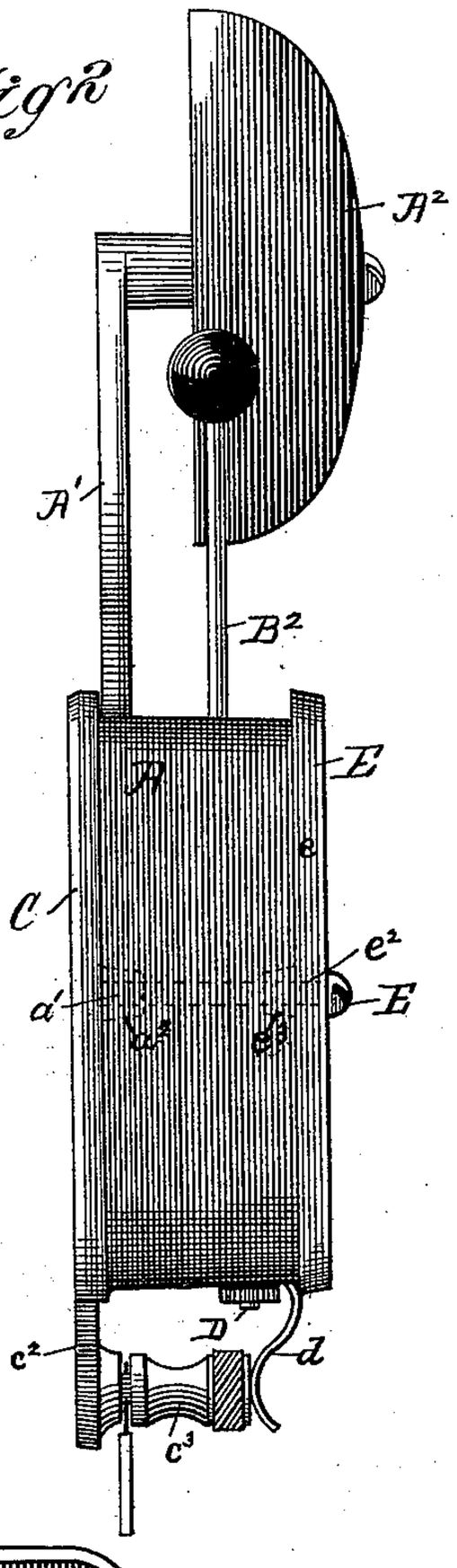

Fig 3

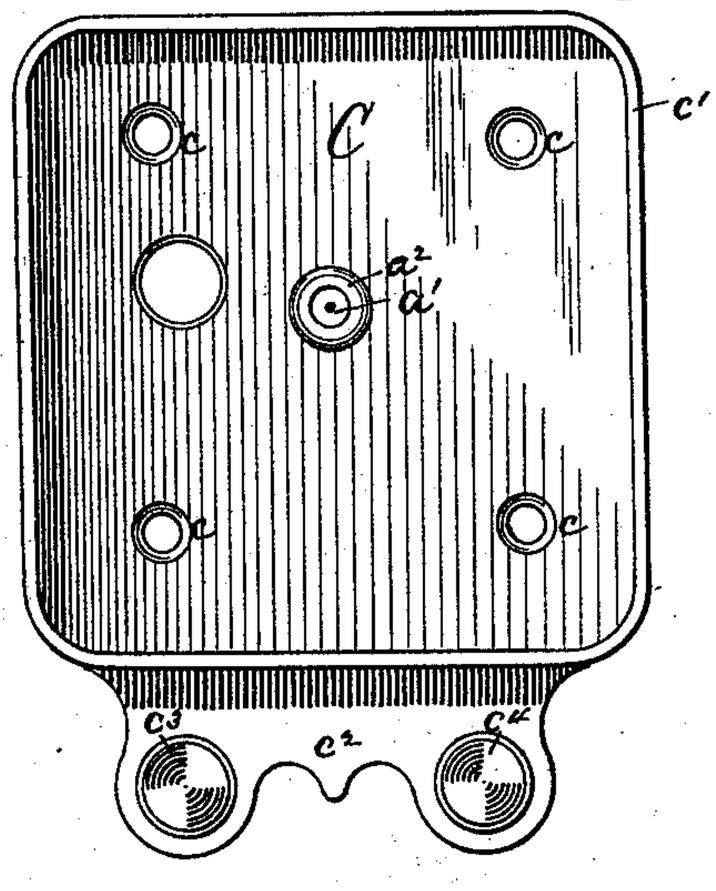

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Fig. 4

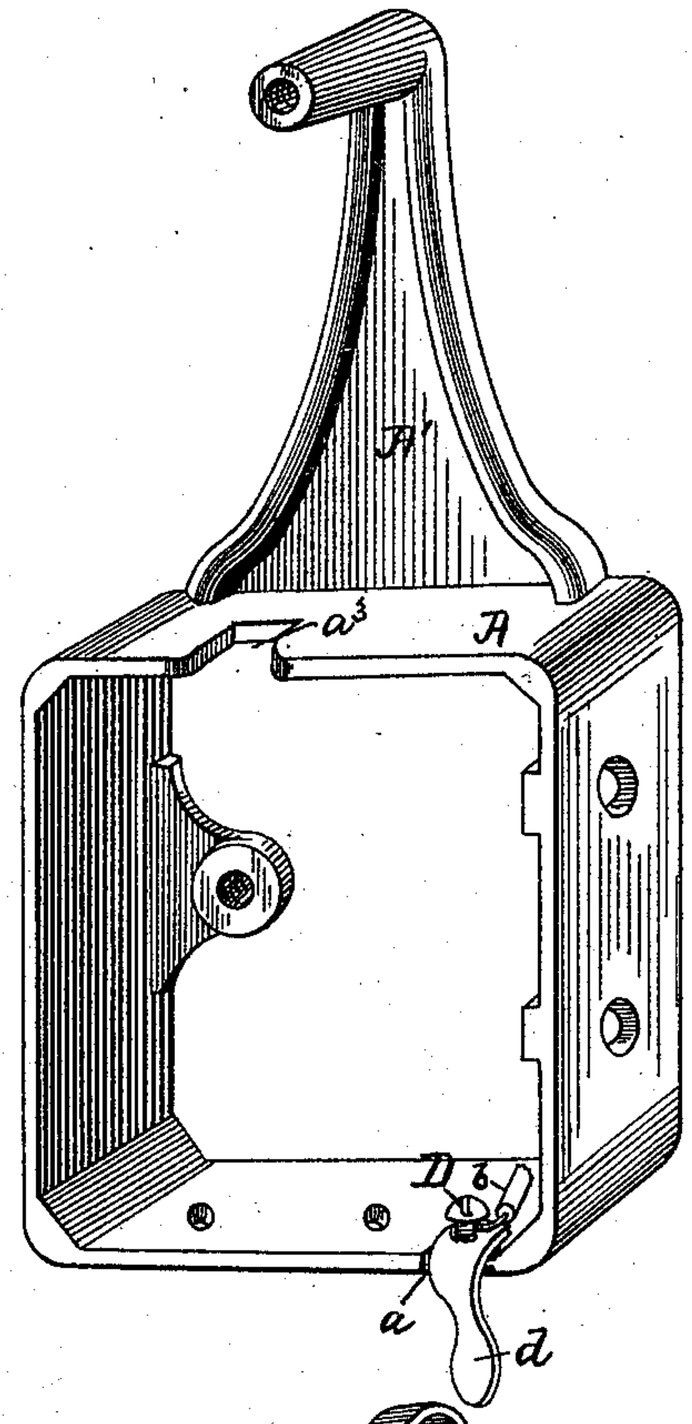
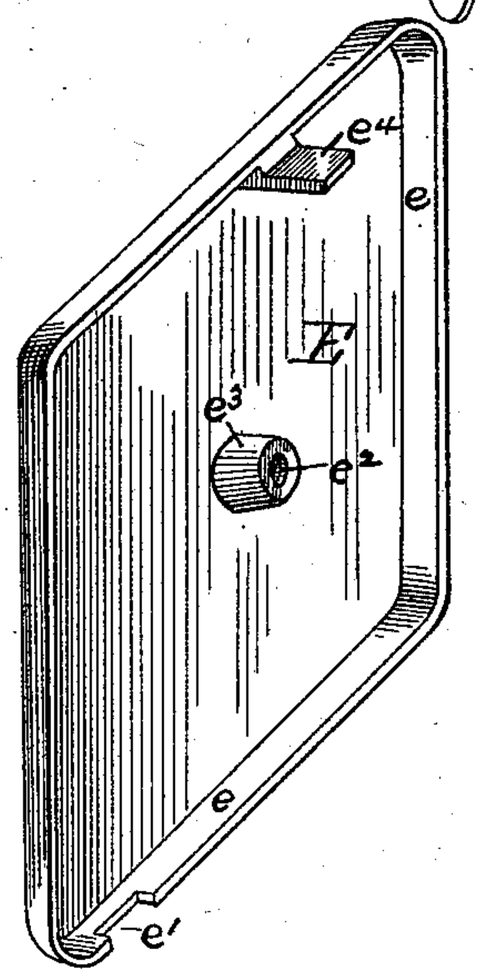


Fig. 5.



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THOMAS J. SMITH, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE E. S. GREELEY & COMPANY, OF NEW YORK.

ELECTRIC CALL-BELL.

SPECIFICATION forming part of Letters Patent No. 408,676, dated August 6, 1889.

Application filed December 14, 1888. Serial No. 293,604. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. SMITH, of the city of Brooklyn, county of Kings, State of New York, a citizen of the United States, have invented certain new and useful Improvements in Electric Bells, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to an electric call-bell or audible signaling device, and more particularly to the case inclosing the operative parts thereof, and by means of which the device is mounted or secured upon a wall or other object; and my invention consists in said inclosing-case, composed of the parts hereinafter described, constructed and combined as specified, whereby the advantages hereinafter set forth are obtained.

Figure 1 is a front elevation of an electric call-bell, the operative parts being shown in broken lines within the inclosing-case which contains my invention, and a portion of the front of the case being broken away to disclose a feature of the invention. Fig. 2 is a side elevation of the same. Fig. 3 is a plan of the back plate of the inclosing-case detached. Fig. 4 is an elevation in perspective of the skeleton frame of the case, and Fig. 5 is an elevation in perspective of the front plate or cover detached.

In carrying out my invention I cast or otherwise form of metal—such as iron—a skeleton frame A, open on the front and rear, as shown. Upon one of the sides of this frame A, and preferably the upper side or top, I form or place the arm or standard A′, projecting desirably exteriorly of the frame, as shown, said arm or standard being adapted and intended to sustain and carry the bell A^2 or equivalent signal device. The standard A′ is preferably integral with the frame A.

Within the frame A the magnet B is mounted in the usual manner, and also the armature B′, which latter carries the hammer B^2, reaching to and adapted to strike upon the bell. No claim is herein made to any novelty in the construction and arrangement in the frame A of the magnet and armature.

C is a plate intended and adapted to be secured to a wall or other permanent support, and for this purpose said plate may be cast or provided with the screw-holes *c* for fastening-screws. The plate has, preferably, the flange *c′*, corresponding in outline to the rearward rim of the frame A, and hence adapted to permit said rim of the frame to fit within it when the frame is mounted on said plate. Upon an edge of said plate C, and preferably the lower edge, is cast or formed the lug-piece c^2.

A binding-post c^3, in electrical connection with the plate C, is provided in said piece c^2, desirably near one end thereof, and a binding-post c^4, insulated from said plate, is also provided in said piece c^2, desirably near its opposite end, as shown, said posts serving as connections, respectively, for the line-wires of the circuit in which the signal is placed.

At D is shown an insulated binding-post fixed on the frame A, to which the wire *b* from the magnet-coil is connected, and which post also holds a leaf-spring *d*, clamped thereon in electrical contact with said wire. The tongue of said spring reaches through a slot *a* in said frame, and is adapted to bear in electrical contact upon the post c^4, to which one pole of the line-wire is secured, as described. Electrical connection is established between the other pole of the circuit attached to the post c^3 and the armature B′ through the material of the iron frame A.

E is a front plate or cover, preferably flanged at *e*, and adapted to fit over and close the frontward rim of the frame A, as shown. The flange *e* may be cut away, as at *e′*, to permit the play of the spring *d* when the cover is in place.

E′ is a screw passing through an aperture e^2 in the front plate E and transversely through the frame A and into the back plate C, where it is seated in a threaded aperture *a′*. The apertures e^2 and *a′* are desirably provided with the bosses e^3 and a^2, respectively, to augment the bearings for the screw E′.

It is evident that the plate C may be secured upon a wall or other support, and that the skeleton frame A, carrying all the operative parts of the apparatus, may then be mounted

upon the plate, and the front plate C be attached in position by means of the single screw E′. The screw E′ may of course be duplicated, if desired; but I find one screw, arranged as shown and described, to answer every purpose for uniting the frame and front plate and mounting them upon the plate C. The leaf-spring *d* being arranged as shown and described, when the frame is thus mounted upon the plate C, electrical connection is thereby automatically established between the magnet-wire and the post c^4.

When it is desired for any cause to inspect or repair the mechanism of the apparatus, the frame A carrying all the said mechanism may be detached from the place of support without disturbing the back plate C, which is intended to remain permanently secured to the wall or other object. Mutilation of the wall, as well as insecurity of attachment of the apparatus to the wall, as ensues when the screws securing the box or frame to the wall are withdrawn and replaced when detaching and remounting a signal-bell case as heretofore constructed, are thus wholly avoided, and the frame A carrying the operative parts may be readily detached and replaced without disturbing the essential attachment of the device to its permanent support.

It will be found desirable to form a wide notch a^3 in the front edge of the frame to permit the bell-hammer to extend through the frame to the bell, and then to provide a tongue-piece or lug e^4 on the inner face of the front plate E, to close the said notch at the edge of the frame, leaving only the space needed for the play of the hammer.

I am aware that call-bells have been heretofore constructed, the cases of which have included a skeleton frame containing the magnets and armature, and that such frame has been provided with a detachable front plate or cover. I am also aware that such skeleton frame has been detachably mounted upon a back plate adapted to be permanently secured upon a support. I do not therefore claim, broadly, herein a case in which a skeleton frame having a detachable cover is detachably mounted upon a back plate; but in bell-cases thus constructed heretofore the binding-posts for the circuit-wires have been heretofore carried by such skeleton frame, whereby in testing, as above stated, and also in removing the frame from the back plate, said binding-posts have to be manipulated and the circuit-connection severed or restored, as the case may be.

By means of the construction herein shown and described the bell is carried by the frame containing the operative parts, and the apparatus, when the frame is dismounted, can be tested without remounting, while the circuit-wires binding-posts may always remain undisturbed when the frame is dismounted and remounted.

What I claim as my invention, and desire to secure by Letters Patent, is—

In an electric call-bell, the inclosing-case thereof composed of the back plate C, adapted to be permanently secured to the place of support and carrying the described binding-posts c^3 and c^4, the skeleton frame A, containing the magnet, armature, and its bell-striker, and provided with the standard A′, supporting the bell A^2, the post D and its spring *d*, adapted to engage said post c^4, and the front plate or cover E, said frame and cover being detachably mounted upon said back plate, substantially as and for the purpose specified.

THOMAS J. SMITH.

Witnesses:
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A. T. FALES.