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R. H. MAYLAND.

BELL.

APPLICATION FILED JAN. 30, 1904.

NO MODEL.

Fig. 1.

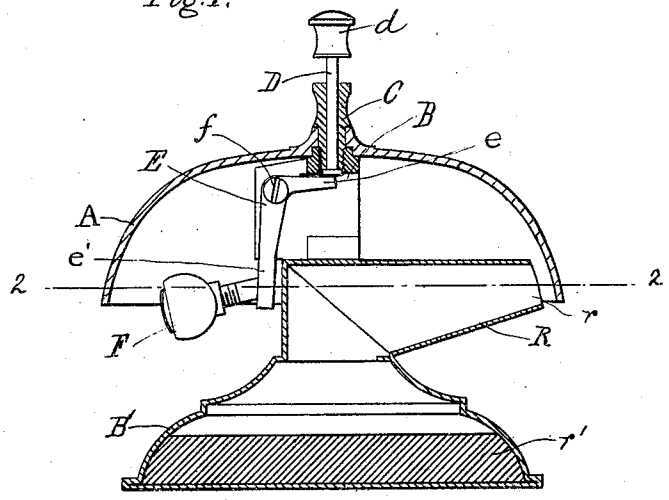
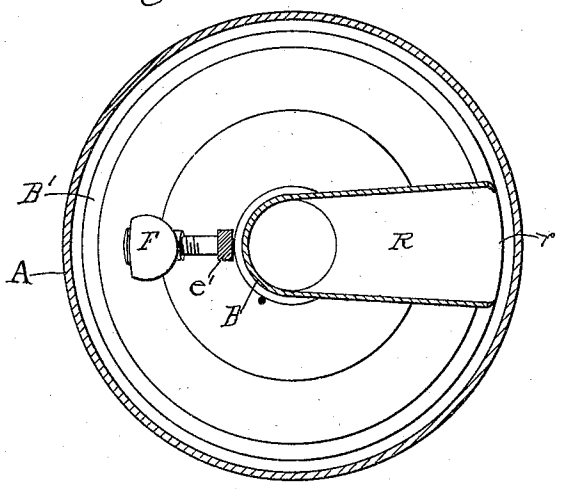


Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

ROWLAND H. MAYLAND, OF FREEPORT, NEW YORK.

BELL.

SPECIFICATION forming part of Letters Patent No. 770,437, dated September 20, 1904.

Application filed January 30, 1904. Serial No. 191,359. (No model.)

To all whom it may concern:

Be it known that I, ROWLAND H. MAYLAND, a citizen of the United States of America, and a resident of Freeport, Nassau county, State of New York, have invented Improvements in Bells, of which the following is a specification.

It is a well-known scientific fact that if the open end of a tube be placed adjacent to the outer rim of a bell the note given out by the latter when set in vibration will be materially reinforced by the action of the column of air in the tube. This action is termed "resonance." According to my invention I avail myself of this scientific principle to so construct hand-bells and other bells for household and other purposes as to improve the quality of the tone or note given out by the bell and to make the sound more pleasant to the ear by reinforcing the fundamental tone or note, and this I accomplish without detracting in any respect from the constructive appearance of the bell itself. This object I attain by constructing the bell with an internal resonator, as hereinafter described.

In the accompanying drawings, Figure 1 is a vertical section of a hand-operated bell constructed in accordance with my invention; and Fig. 2 is a sectional plan of the same on the line 2 2, Fig. 1.

In the construction shown in the drawings, A is the body of the bell in the form of an inverted cup mounted upon a central standard or support B, which, as usual, has an enlarged or widened base B′. The bell is secured on the top of the standard by a tubular screw C, through which passes the plunger D, having at the top the knob *d* to be acted on by the user's hand. The lower end of this plunger rests upon the short horizontal arm *e* of the cranked lever E, which is pivoted at *f* to the upper end of the standard B. The long arm *e′* of this lever E carries the hammer or clapper F to strike the inner surface of the rim of the bell.

In conjunction with the described elements of a bell I provide a resonator within the bell itself and substantially concealed by it. This resonator is shown in the present instance as a tube R, which is mounted on the central standard B and has its open end *r* facing the inner side of the rim of the bell at one side, preferably at a point diametrically opposite that at which the hammer F will strike the bell. In order to get a column of air of the proper proportion to give the full resonance effect, I prefer to avail myself of a portion of the standard B for the purpose by making the lower part of this standard hollow and making this, in effect, a continuation of the tube R. The resonance air-chamber thus produced may be made larger than is likely to be required, so that then the proper length of air-column to give the best resonance effect for any given bell can be experimentally obtained by introducing a filling *r′*, of paraffin or other suitable material, or by pressing inward the sheet-metal bottom of the hollow standard or by diminishing or enlarging the size of the mouth of the tube R. To get the best effect in conjunction with the resonator, it is important that the hammer shall strike the rim of the bell nearly at right angles thereto. For this purpose I make the pivoting-point *f* of the bell as far away from the plunger or center of the bell-cup as the curve of the cup will permit, and for the same purpose and at the same time to prevent the hammer from hanging down below the bell to an unseemly extent I make the arm *e′* of the lever of the cranked or bent form shown in Fig. 1.

It will be understood that my invention can be readily applied to other types of bells than that shown in the drawings and that the resonance-chamber may be variously constructed, provided it is inclosed within and practically concealed by the bell itself.

I claim as my invention—

1. A bell provided with a resonance-chamber within the bell and practically concealed thereby, the open end of said chamber facing the inner face of the rim of the bell at one side, substantially as described.

2. A bell provided with a clapper and an internal resonance-chamber with its open end facing the inner face of the rim at a point diametrically opposite that at which the clapper strikes the bell.

3. A bell having a central supporting-standard, a clapper pivoted thereto, with an internal resonance-tube supported on said standard.

4. A bell having a central hollow supporting-standard, a clapper pivoted thereto, with an internal resonance-tube supported on said hollow standard which forms a continuation of said tube, as and for the purpose described.

5. A bell having a hollow supporting-standard and a pivoted clapper with a resonance-tube having its open end facing the inner face of the rim of the bell at one side, the tube opening into the interior of the standard, which forms a continuation of the resonance-tube.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROWLAND H. MAYLAND.

Witnesses:
MARTIN KRETSCH,
HUBERT HOWSON.