

(No Model.)

H. A. DIERKES.

CALL BELL.

No. 353,848.

Patented Dec. 7, 1886.

Fig. 1.

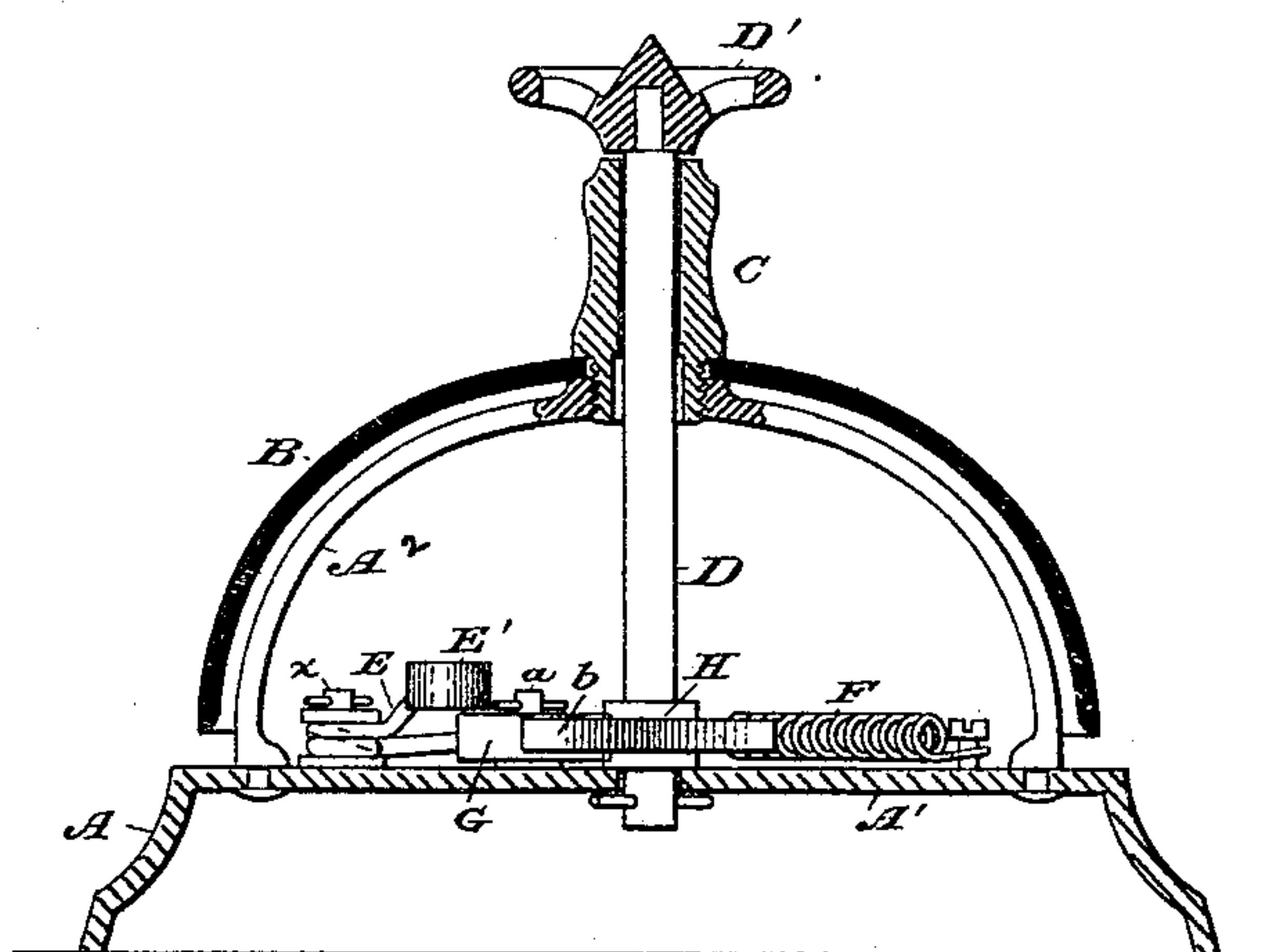
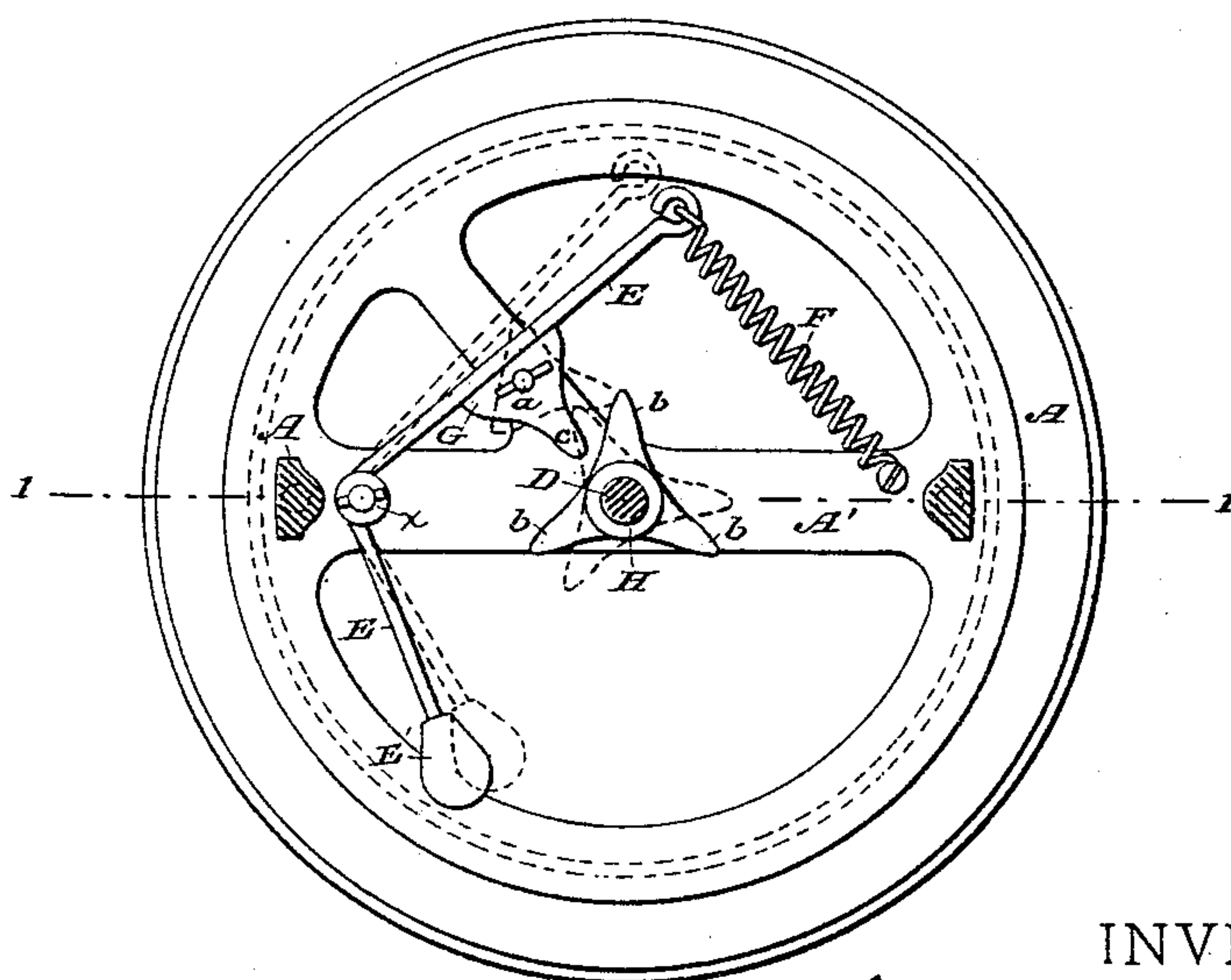


Fig. 2.



WITNESSES:

E. B. Bolton
J. S. Brown.

INVENTOR:

Henry A. Dierkes

By his Attorney,

Henry Cornwell

UNITED STATES PATENT OFFICE.

HENRY A. DIERKES, OF NEW YORK, N. Y.

CALL-BELL.

SPECIFICATION forming part of Letters Patent No. 353,848, dated December 7, 1886.

Application filed August 7, 1886. Serial No. 210,352. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. DIERKES, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain Improvements in Call-Bells, of which the following is a specification.

My invention relates to a means of operating the striking mechanism of a call-bell, the object being to provide a convenient means of sounding the bell without the necessity of striking a blow. In the commonest form of call-bell the hammer is actuated by striking a smart blow on the projecting end of a plunger arranged in the top or crown of the gong. My construction avoids the necessity of this blow.

My invention consists in providing the bell with a shaft or rotatively-mounted spindle arranged in the axis of the gong and adapted, by its rotation or partial rotation, to actuate the striking mechanism of the bell, said shaft or spindle being provided with a hand-wheel or other similar device on its exterior end, whereby the operator may conveniently rotate said shaft or spindle, and thus sound the bell.

My invention also includes certain improvements in the striking mechanism of the bell.

I usually mount the gong on a base, with its axis perpendicular to the base, and arrange the striking mechanism inside of the gong. In this case the plane of rotation of the operating spindle or shaft will be horizontal.

In order to avoid confusion I will call the device as a whole a "bell," and the part which is struck by the hammer and produces sound by its vibrations a "gong," although this latter part may have almost any form commonly given to gongs or bells.

My invention will be fully described hereinafter, and its novel features carefully defined in the claims.

In the drawings, which serve to illustrate my invention, Figure 1 is a vertical axial section of a call-bell embodying my invention, the plane of the section being indicated by line 1 1 in Fig. 2. Fig. 2 is a plan view designed to illustrate the striking mechanism, the gong being removed and the operating shaft or spindle being in cross-section.

In Fig. 1 I have shown the striking mechanism of the bell in elevation, and in Fig. 2 I have indicated the position of the rim of the gong by dotted or broken lines.

Let A represent a base or support of the ordinary kind, provided with a bridge, A', to support the striking mechanism, and an arched support, A², for the gong.

B is the gong, and C is a sleeve which passes through an aperture in the center or axis of the crown of the gong and screws into the boss at the crown of the arched support A², thus securing the gong firmly thereto. The sleeve C might be formed integrally with the gong, but it is usually made separate therefrom, as herein shown. So far as described there is nothing new in the construction.

D is a shaft or spindle, the upper end of which has a bearing in the sleeve C, and the lower end of which has a bearing in the bridge A'. The shaft is thus rotatively mounted, and it is provided on its upper end exterior to the gong with an operating hand-wheel, D', to serve as a crank device, whereby the shaft may be conveniently rotated.

Referring now particularly to Fig. 2, I will describe the striking mechanism I prefer to employ, premising that I do not limit myself to its use in this bell.

E is the hammer-arm, fulcrumed or pivoted at *a* to the bridge A', and provided with a head, E', at one end and coupled at its other end to a spring, F.

G is an escapement in the nature of a block of somewhat triangular form, which is pivoted on a stud, *a*, as clearly shown. The base of this escapement-block rests against the hammer-arm E and forms a stop to limit the movement of said arm, the spring F holding the arm up to the said escapement-block.

Fixed on the shaft or spindle D is a "star-wheel," H, in this case shown as provided with three points or radial branches, *b b*. When the shaft and star-wheel are rotated, the points *b* of the wheel successively come in contact with the longer angle or branch, *c*, of the escapement-block G, which is in their path, and this oscillates said escapement-block on its pivoted stud *a*. The position of the parts under these conditions is indicated by dotted lines in Fig. 2. Thus one of the angles of the escapement-block is caused to bear on and move the hammer-arm, drawing back the hammer-head and distending the spring F. When the point *b* passes the angle or branch *c*, the spring F acts suddenly, rights the escapement-

block, and causes the hammer-head to strike the gong a smart blow. As constructed, one revolution of the shaft D will sound the gong three times, and by reason of the triangular construction of the escapement-block the operation will be the same in whichever direction the shaft D is rotated.

It will be seen that the "star-wheel" H, so called, may have one or more points or radial arms. A single laterally-projecting arm carried by shaft D would serve. I prefer a three-armed device, however.

As before stated, I do not limit myself to this particular construction of the striking mechanism, as other constructions or devices may be employed as well so long as the rotation of the shaft D serves to operate said striking mechanism and sound the gong. Nor do I wish to limit myself to the particular form of wheel D' shown. A suitable milled-edged button, or even a crank, will serve. Whatever form of device is used, it should be of such a nature that it may be conveniently grasped between the thumb and finger and rotated.

The spring F should only be strong enough to effect a smart blow of the hammer. If too strong, the effort required to rotate the shaft will be too great. A slight downward pressure on the wheel D' while turning it serves to steady the bell by holding the base A down firmly on the table or other support.

I usually arrange the striking mechanism and the star-wheel H within the hollow of the gong in this class of bells; but this is not essential. They may be arranged below the gong or in the hollow base; but the hammer-head must stand in position to strike the gong.

It is not essential that the hammer-head shall be fixed on the arm E. It might be carried by a swinging arm and be struck by the arm E and driven against the gong. Such a loosely-suspended hammer is shown in my Patent No. 174,210, of February 29, 1876.

The shaft D, unlike the plunger in a common form of call-bell, does not have or need not have end-play, and any laterally-projecting arm or part on it may be made to actuate the striking mechanism when the shaft is rotated.

By the words "call-bell," as herein employed, I mean a small portable bell with a

base, such as is commonly used on a table or desk, and which is a complete and portable article of itself, as distinguished from a "door-bell," which is not portable nor complete of itself, but is mounted on and fixed to a door or the like and combined therewith when in use. My invention relates solely to the former class of bells.

Having thus described my invention, I claim—

1. In a portable call-bell, the combination, with a base, of a gong mounted on said base and provided with a bearing for an operating-shaft, the said operating-shaft, rotatively mounted in said bearing in the gong, projecting through the crown of the gong, and provided with means for rotating it fixed on its outer end, a striking mechanism, and means carried by said shaft for actuating said striking mechanism, whereby the bell is sounded by the rotation of said shaft.

2. In a portable call-bell, the combination, with the base, of the gong mounted thereon and provided with an axial bearing for the operating-shaft, the said operating-shaft rotatively mounted in said bearing in the gong and provided with a hand-wheel on its exterior extremity, a striking mechanism comprising the hammer, its spring, and the escapement-block, and means borne by the said operating-shaft for effecting the proper oscillation of said escapement-block.

3. In a call-bell, the combination, with the base A, provided with a bridge, A', and arched support A² for the gong, of the gong B, mounted on said base and provided with a bearing in its crown for an operating-shaft, the said operating-shaft D rotatively mounted in the said bearing and in said bridge A', and provided exteriorly with a hand-wheel, D', a star-wheel, H, fixed on said shaft D, under the gong, and a striking mechanism mounted on said base, comprising a vibrating escapement-block, G, and a hammer arm and spring, substantially as set forth.

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

HENRY A. DIERKES.

Witnesses:

HENRY CONNETT,
ELBERT B BOLTON.