(No Model.)

# W. B. COMSTOCK & A. P. BUXTON.

## CALL BELL.

No. 365,241. Patented June 21, 1887.

Fig. 1

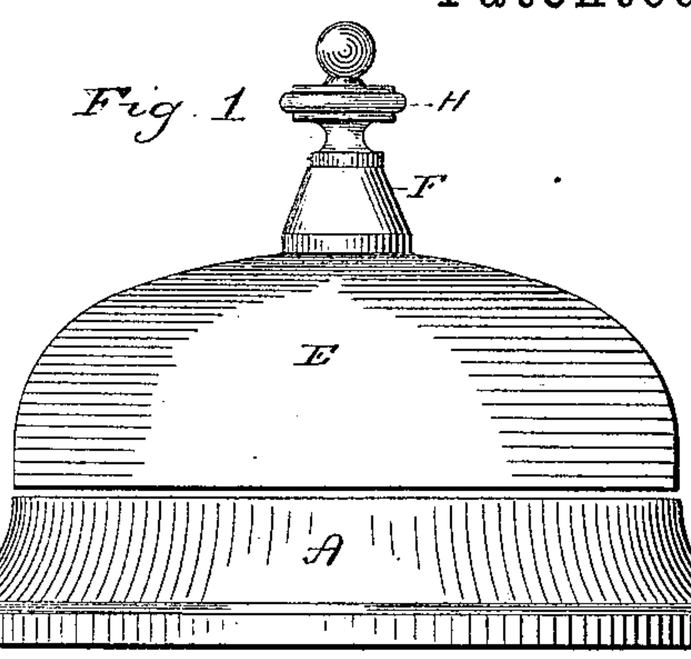



Fig. 8

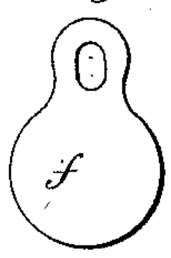



Fig. 2




Fig. 3

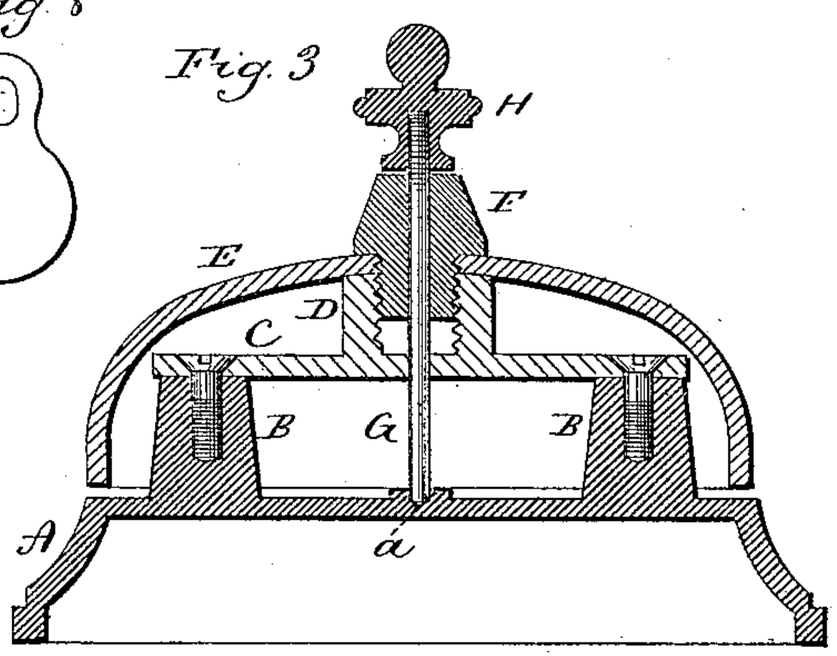



Fig. 4

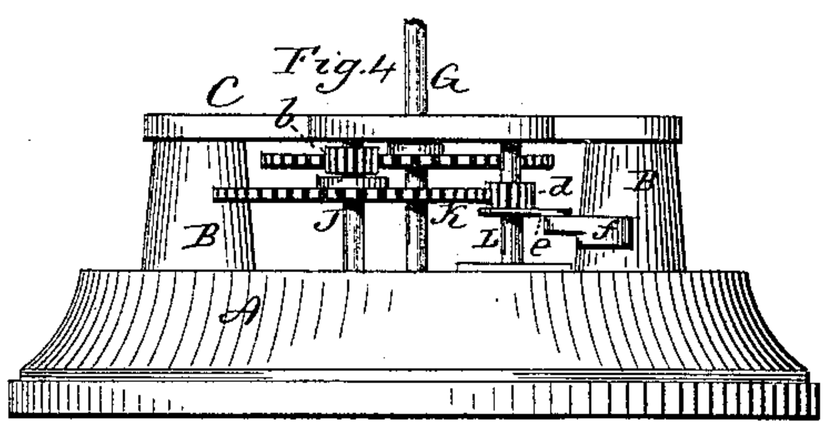



Fig. 6

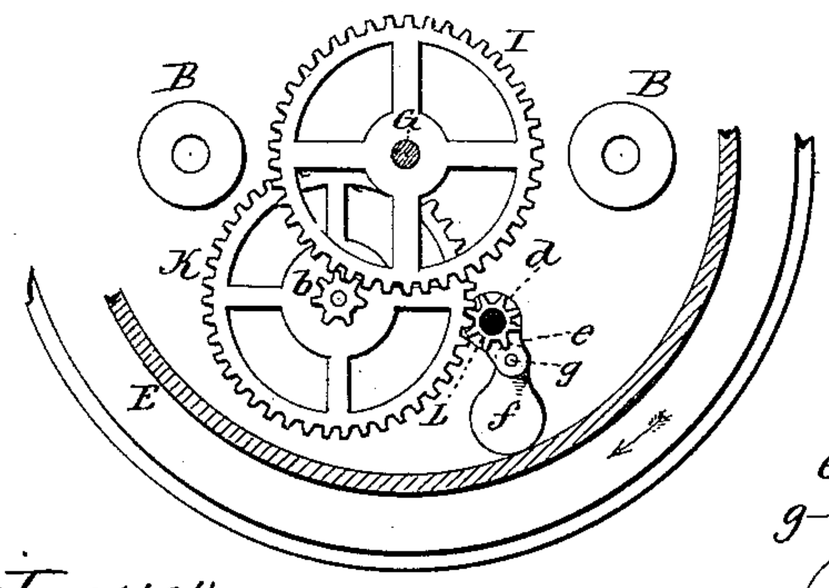



Fig. 5

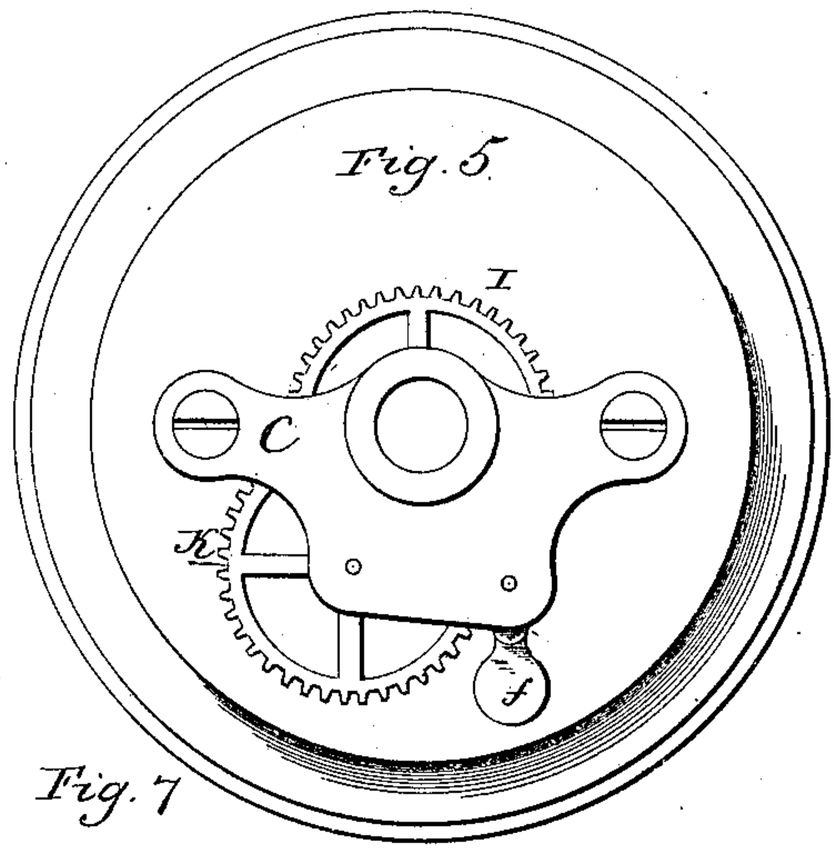
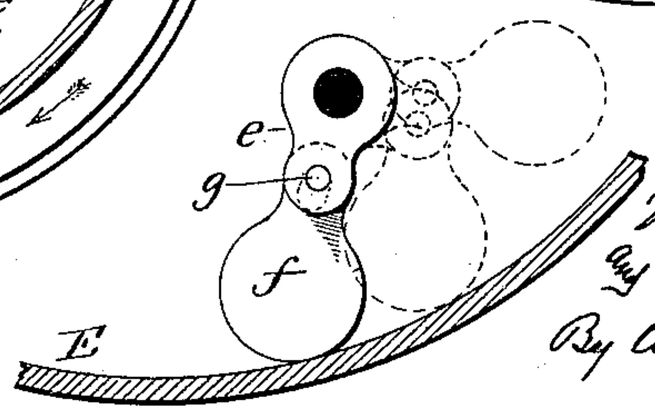



Fig. 7

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# UNITED STATES PATENT OFFICE.

WILLIAM B. COMSTOCK AND ANTHONY P. BUXTON, OF MERIDEN, CONNECTICUT, ASSIGNORS TO THE BRADLEY & HUBBARD MANUFACTURING COMPANY, OF SAME PLACE.

## CALL-BELL.

SPECIFICATION forming part of Letters Patent No. 365,241, dated June 21, 1887.

Application filed December 13, 1886. Serial No. 221,394. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM B. COMSTOCK and ANTHONY P. BUXTON, of Meriden, in the county of New Haven and State of Connecticut, have invented a new Improvement in Call-Bells; and we do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view of the bell complete; Fig. 2, a vertical central section through the bell, base, and plate, showing the train of gearing; Fig. 3, a central section through the plate and base, cutting through the posts which connect the base and plate; Fig. 4, a side view, the bell removed; Fig. 5, a top view, the bell removed; Fig. 6, a horizontal section showing the train of gearing and the hammer; Fig. 7, a detached view of the hammer-shaft, hammer, and portion of the bell, to illustrate the operation of the hammer; Fig. 8, the hammer detached.

This invention relates to an improvement in that class of call-bells in which the bell is arranged in a horizontal plane upon a central post on a base, and so that the bell will inclose the operative mechanism, and the said mechanism operated through a central spindle extending up through the bell and provided with a handle above the bell. In the more general construction of this class of bells the operating-spindle is arranged to work up and down, and so as to be operated by downward pressure, producing but a single stroke. Devices have, however, been applied whereby a succession of strokes may be given to the bell under a single operation.

The object of our invention is to produce a bell of this class in which a long-continued series of rapid strokes upon the bell may be produced, if desired, and yet make the construction simple and cheap, and without changing the general appearance of the bell as a whole.

A represents the bell, which is made from metal, and of the usual shape for this class of bells. The base is cast with vertical posts B extending up therefrom. Upon these posts a plate, C, is fixed parallel with the plane of the base, and so as to form a space between the plate C and the base for the operative mechanism. Upon the plate is a central post, D, upon which the bell E is securely fixed parallel with the base. The bell is best fixed by a tubular bolt, F, passed through a central opening in the bell and screwed into the post D, as seen in Fig. 2, and so as to take a bearing upon the outside of the bell and clamp the bell between the head of the bolt and the post D upon the inside of the bell.

The operative mechanism consists of a central shaft, G, which takes a bearing at its lower end in the base, as at *a*, and extends up through the plate C, and thence up through the tubular bolt F, and at its outer end provided with a knob or head, H, by which rotative movement may be imparted to the shaft.

The shaft G carries a spur-gear, I, which works into a pinion, *b*, on a shaft, J, the said shaft being supported in the base A at its lower end and in the plate C above. The shaft J, in its turn, carries a spur-gear, K, which works into a pinion, *d*, on a vertical shaft, L, which takes a bearing at its lower end in the base and at its upper end in the plate C, and so that by revolving the spindle G a very rapid rotation will be imparted to the shaft L.

On an arm, *e*, fixed to and projecting laterally from the shaft L, the hammer *f* is hung—say as by a pivot, *g*—and so that the hammer is free to swing in a horizontal plane independent of the shaft; but the hammer extends from the shaft toward the bell so far that the hammer may strike the bell, as indicated in Fig. 6.

Under the rapid revolution of the shaft L, which carries the hammer, the centrifugal force supports the hammer at its most distant point from the shaft, and the path of the hammer under this centrifugal force is such that in its revolution it must strike the inside of the bell, as indicated in Fig. 6; but because of being pivoted to the arm it offers no resistance other than centrifugal force; consequently,

on striking the bell, it yields to the advance of the shaft which carries it, as indicated in broken lines, Fig. 7, so as to readily pass the bell; but so soon as it passes from the bell it again assumes its extreme outward position, as indicated by the advanced broken lines in Fig. 7, and stands in position to strike the bell in the next revolution of the shaft.

The shaft G is turned by applying the thumb and finger to the head or knob H, and because of the multiplication of the gearing a rapid rotation of the shaft L follows, and consequently a rapid succession of blows of the hammer upon the bell, and this result follows whether the shaft be turned in one direction or the other, the hammer being free to give way in either direction.

The train of gearing may be multiplied to any desirable extent, so that the shaft L will revolve with greater rapidity than the shaft G.

We have shown one shaft with pinion and gear between the main shaft G and the hammer-shaft L; but there may be more or less, accordingly as a greater or less rapidity is required for the hammer.

By constructing the frame to support the train of gearing the base forms one plate and the posts complete. The other plate, C, may also be made from cast metal, and thus produce an extremely cheap construction of clock-work, and the bell complete is brought into a very small compass, and in the most desirable accepted shape for a call-bell.

Were the hammer *f* hung upon the pivot *g* without radial play or freedom, there would be a liability for the hammer to catch on a reverse turn of the knob—as, for illustration, suppose the hammer happens to stand, as in Fig. 6, against the bell. Now, if the rotation of the arm *e* be made in the direction indicated by the arrow in that figure, the hammer would cam against the bell and prevent operation. To avoid this difficulty, we make an elongated hole through the hammer *f* (see Fig. 8) sufficient in length to permit the arm *e* to thus turn in the reverse direction should the hammer happen to stand in the blocking position, the pivot working through the elongated hole in the hammer in such movement. The centrifugal force, however, will always maintain the hammer at its extreme position, and so as to readily strike the bell in the revolution of the arm *e*.

We claim—

In a call-bell, the combination of the base, a bell supported thereon, its axis vertical, a concentric driving-shaft extending outward through said bell and terminating in a suitable head, whereby the said shaft may be rotated, a hammer-shaft, L, in gear connection with said driving-shaft G, the hammer-shaft provided with a radially-projecting arm, *e*, and the hammer *f*, hung by a pivot, *g*, to said arm *e*, the opening for the pivot between the hammer and arm elongated in a radial direction, substantially as described.

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