(No Model.)

J. ALLEN & S. GOULDEN.

ALARM BELL.

No. 428,198. Patented May 20, 1890.

Fig. 1.

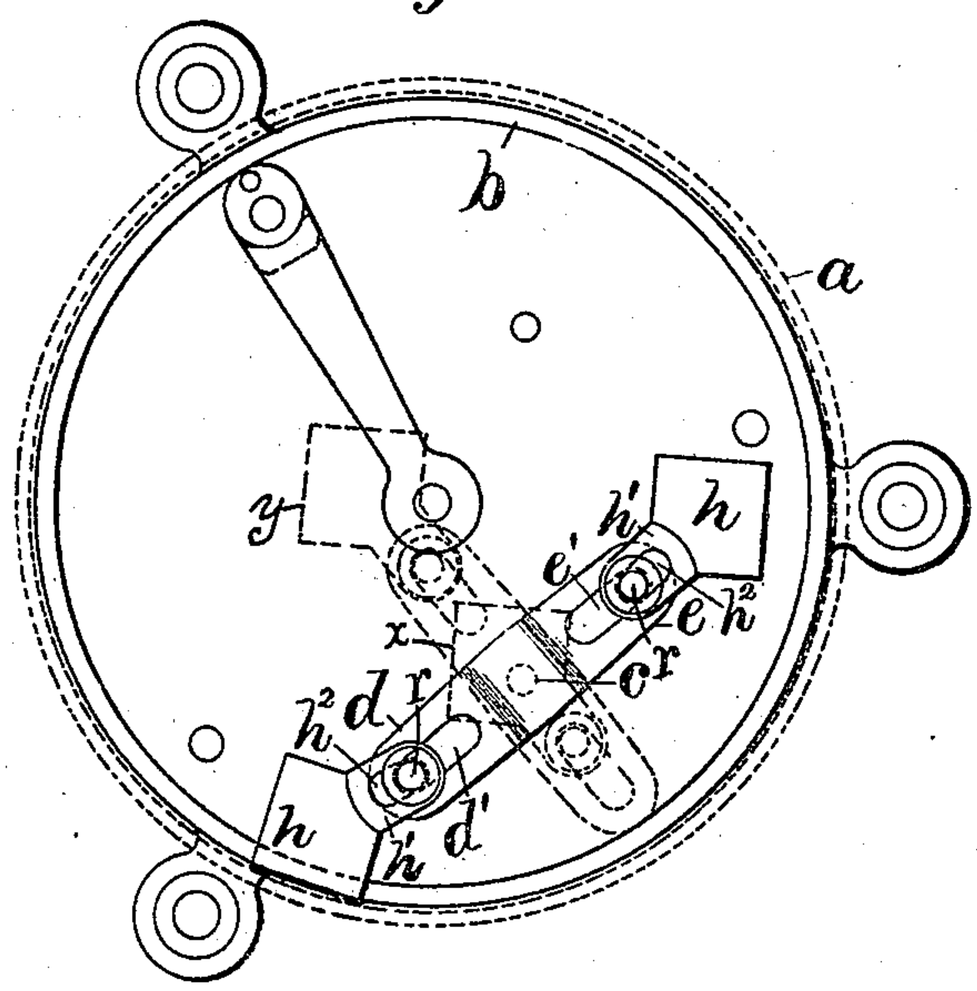

Fig. 3.

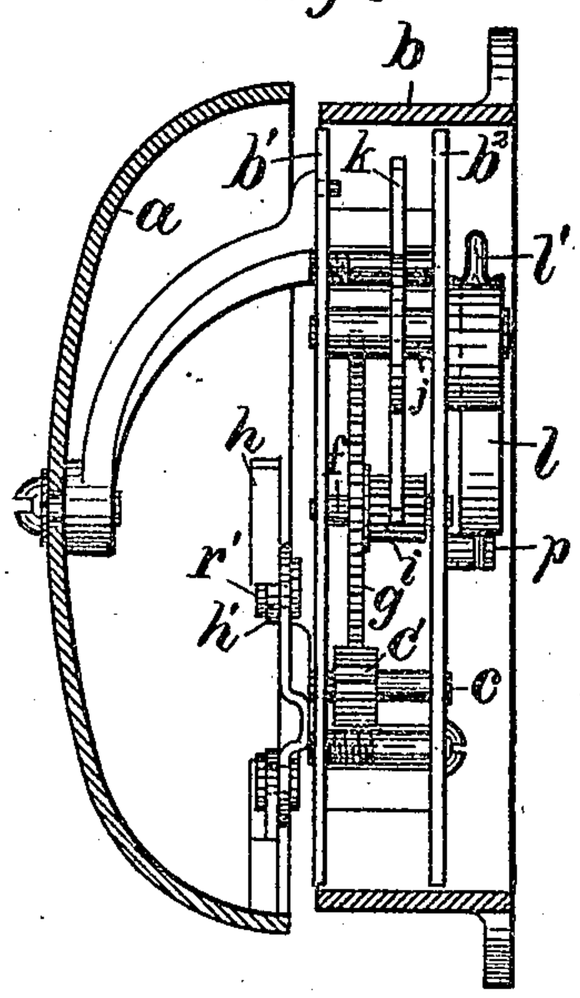

Fig. 2.

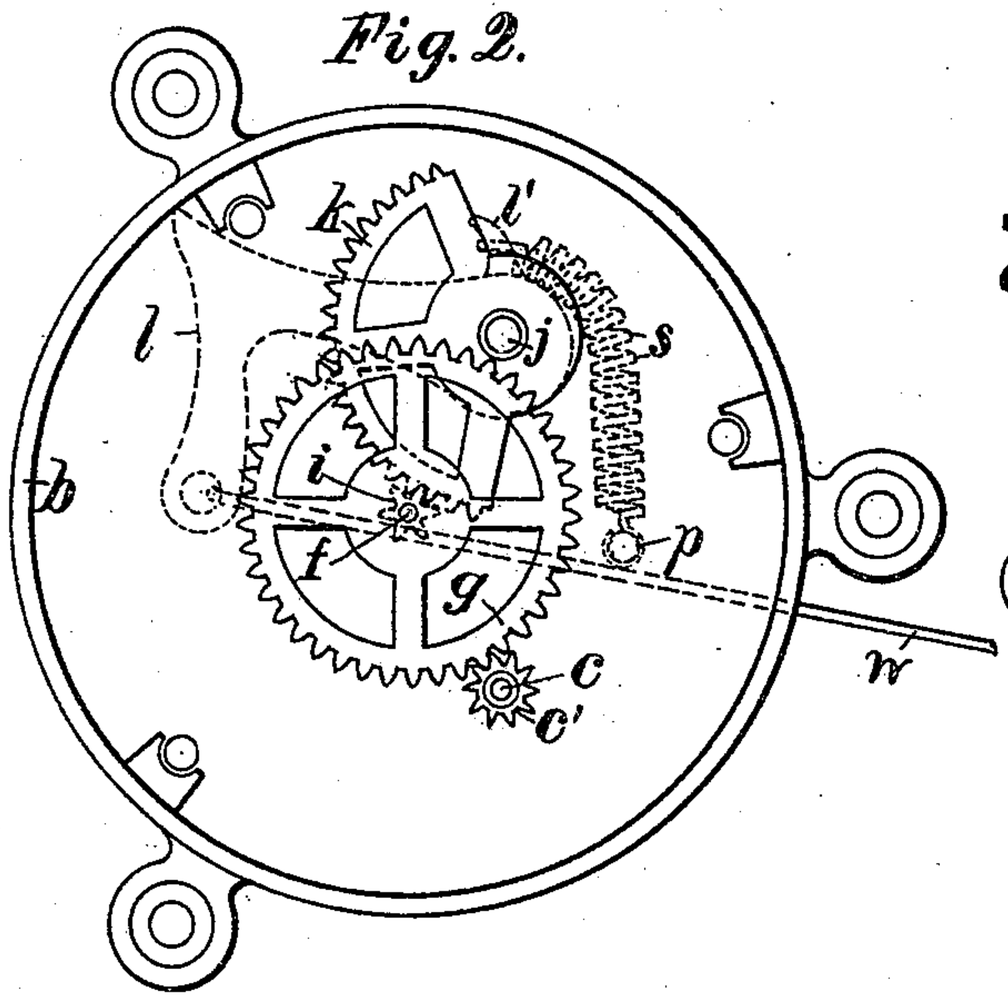

Fig. 4.

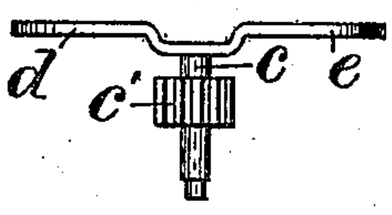

Fig. 6.

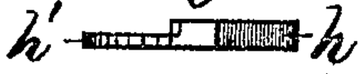

Fig. 5.

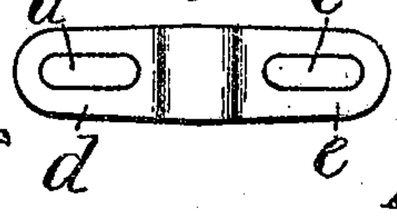

Fig. 7.

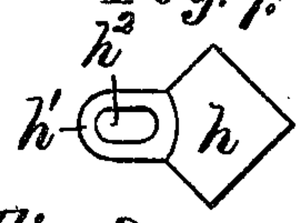

Fig. 8.

Fig. 9.

Attest:
F. C. Fischer.
H. H. Russell

Inventor.
J. Allen and S. Goulden
per Crane & Mullen Attys

UNITED STATES PATENT OFFICE.

JOSEPH ALLEN AND SAMUEL GOULDEN, OF NEWARK, NEW JERSEY, ASSIGNORS OF ONE-THIRD TO CHARLES ALLEN, OF TORONTO, CANADA.

ALARM-BELL.

SPECIFICATION forming part of Letters Patent No. 428,198, dated May 20, 1890.

Application filed August 22, 1889. Serial No. 321,634. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH ALLEN and SAMUEL GOULDEN, subjects of the Queen of Great Britain, residing at Newark, Essex county, New Jersey, have invented certain new and useful Improvements in Alarm-Bells, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention consists in the special construction herein set forth for an alarm-bell.

In the annexed drawings, Figure 1 is a plan of the bell with the gong removed, but its periphery indicated in dotted lines. Fig. 2 is a similar view of the same with the disk b' and the parts in front thereof removed. Fig. 3 is an edge view of the entire bell with the gong and casing in section; Figs. 4 and 5, an elevation and plan, respectively, of the hammer-spindle and the hammer-arms. Figs. 6 and 7 are similar views of one of the hammers, and Figs. 8 and 9 are similar views of one of the rivets for pivoting the hammers h to the arms d and e.

a is the gong, and b the casing inclosing the mechanism for operating the hammers.

b' and b^2 are disks fitted within the casing and perforated to form bearings for the spindles of the several cog-wheels inclosed by the casing.

c is the hammer-spindle, provided with arms d and e, projecting laterally from its outer end, and with the cog-wheel c' on that portion between the disks b' and b^2. The arms d and e have slots d' and e', respectively, near their outer ends.

The hammers h are each provided with ears h', having slots h^2, and to secure them to the arms d and e rivets r, having heads or washers r' secured to their ends, are inserted through the slots in the ears h' and arms d and e. The slots d', e', and h^2 are each fitted loosely to the rivets r to allow perfect freedom of movement of the hammers on striking the edge of the gong, as shown in Fig. 1.

f is a spindle having a cog-wheel g, meshing with the cog-wheel c', and cog-wheel i secured thereon, and serves merely to transmit the motion of the driving-spindle j, having the toothed sector k secured thereon, to the hammer-spindle c. The sector k meshes with the cog-wheel i, as shown in Figs. 2 and 3. The cog-wheels c' and i are of much smaller diameter than the cog-wheel g and toothed sector k, and consequently a slight movement of the spindle j would operate to give the hammer-spindle several rotations.

A lever l is applied to the inner end of the driving-spindle j, and is shown herein having a wire w secured to its free end to draw it forward to operate the several spindles. To hold the lever in its normal position, a lug l' is formed on the end attached to the spindle j, to which is attached one end of a spring s, having its opposite end fastened upon a pin p, projecting from the inner face of the disk b^2. The spring s and wire w are omitted from Fig. 3 to avoid obscuring the remaining parts of the driving mechanism.

To operate the device, the wire w, which is intended to be connected with a suitable bell-pull, is drawn forward, causing a corresponding movement of the lever l and the spindle to which the latter is secured. This action causes a similar movement of the toothed sector k, and thus the rapid rotation of the hammer-spindle c and arms d and e mounted thereon. Each hammer on striking the gong, as at the left side of Fig. 1, is allowed to recoil, as shown in dotted lines x, while that upon the opposite arm is thrown outward by the centrifugal force produced by the rapid rotation of the spindle, as indicated in full lines at the right of Fig. 1 and in dotted lines y in the same figure. When the wire is released by the operator, the spring checks the movement of the mechanism and operates to drive it in the opposite direction. Thus a single actuation by the operator serves to impart a double operation to the driving mechanism.

Although in the arms d and e and the ears h' the slots might be omitted without wholly preventing the practical working of the hammers mounted upon such rotary spindles, it is evident that the slot in one or both of such elements gives a much freer movement to the hammers, and they are thus much more liable to assume their extended positions in readiness for each stroke, if slotted as described.

It is immaterial how the handle or lever l

be actuated, as it might readily be moved by a suitable lever or handle engaging with its free end, as we have sometimes constructed it, or by any other suitable means.

We are aware that it is not new to provide a call-bell or alarm with a rotary spindle actuated by a series of cog-wheels, and that a toothed segment has been employed to operate in resistance to a spring in driving the mechanism for actuating such rotating hammer-spindle; but we are not aware that the driving-spindle in such class of alarm-bells has ever been provided with a lever fixed thereon and adapted to be moved either by the tension of a cord attached to a bell-pull or by means of an auxiliary lever, as above described.

We hereby disclaim all former constructions, limiting ourselves to that specifically claimed herein.

Having thus set forth our invention, what we claim herein, and desire to secure by Letters Patent, is—

The combination, with the gong and the rotary hammer-spindle provided with a head having hammers pivoted thereon, a driving-spindle, an intermediate spindle, and cog-wheels upon the several spindles to transmit the motion of the driving-spindle to the hammer-spindle, of a lever fixed upon the driving-spindle, a spring applied to the lever to hold it in its normal position, and means for operating the lever, substantially as shown and described.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

JOSEPH ALLEN.
SAMUEL GOULDEN

Witnesses:
THOS. S. CRANE,
F. C. FISCHER.