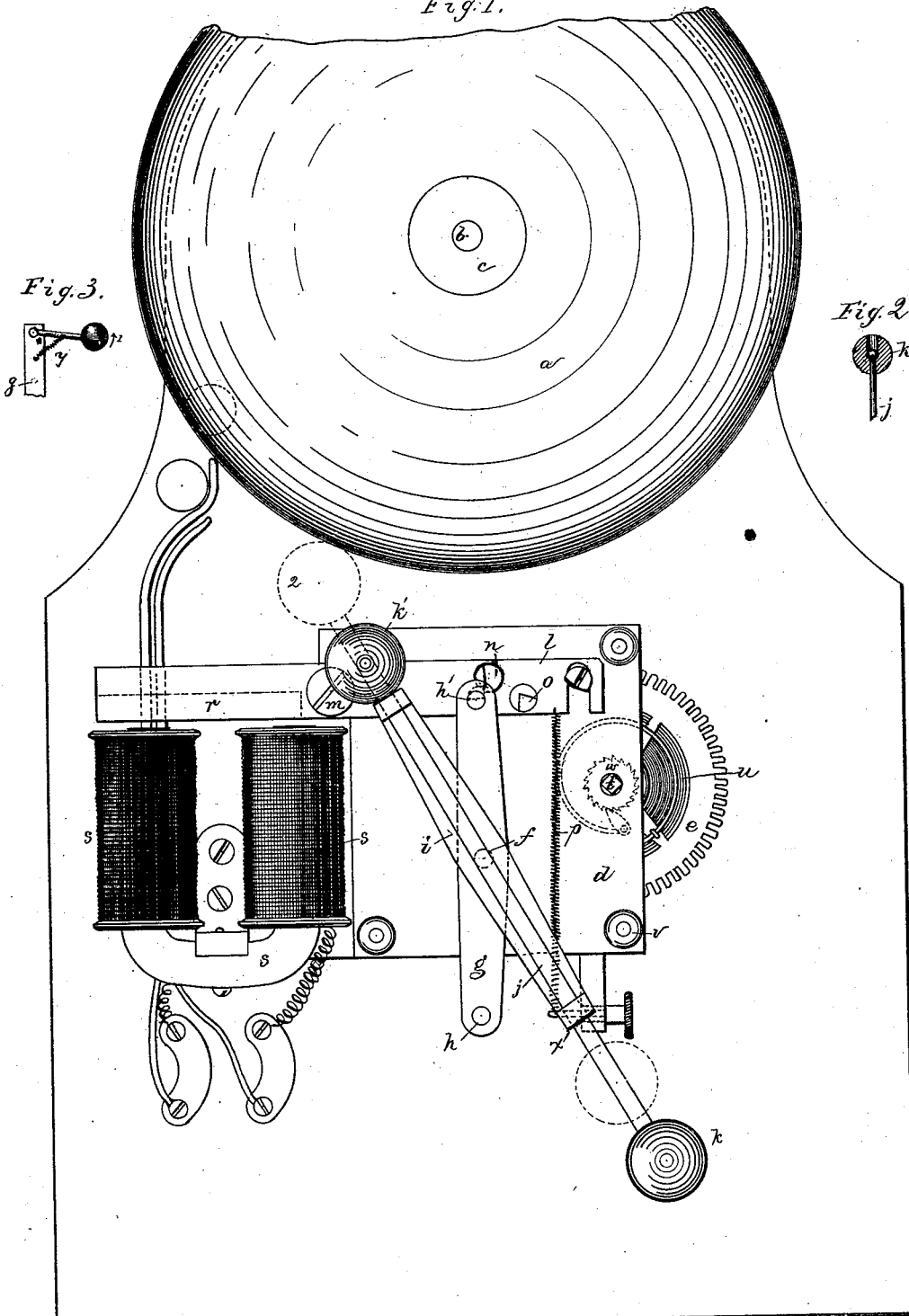


C. W. HOLTZER.
Centrifugal Bell Alarm.

No. 199,828.

Patented Jan. 29, 1878.

Fig. 1.



Witnesses.
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CHARLES W. HOLTZER, OF BROOKLINE, MASSACHUSETTS.

IMPROVEMENT IN CENTRIFUGAL BELL-ALARMS.

Specification forming part of Letters Patent No. **199,828**, dated January 29, 1878; application filed April 30, 1877.

To all whom it may concern:

Be it known that I, CHARLES W. HOLTZER, of Brookline, in the county of Norfolk and State of Massachusetts, have invented an Improvement in Annunciators, of which the following is a specification:

This invention relates to improvements in annunciators, and in this instance it is shown in connection with an electrical annunciator; but it is understood that it may be applied to annunciators other than electrical.

The invention consists in the combination of the following instrumentalities, viz., the gong or other sounder, the armature or arm provided with two detents, a shaft, a revolving arm provided at each end with detent-pins, a guide, and a loosely-held striker, adapted, as the shaft is rotated, to be retained in position by reason of centrifugal force, to strike the gong, and then to be held until the striker descends under the action of gravity, as hereinafter described.

Figure 1 represents this invention so embodied as to be operated by electricity; and Figs. 2 and 3, modifications thereof.

In the drawings, the upper portion of the gong or sounding device *a* is broken away to gain space. This gong is of usual construction, and is supported upon a stud, *b*, it being held thereon by a set-nut, *c*. A frame or case, *d*, holds a toothed wheel, *e*, in gear with a pinion on a shaft, *f*, to which is attached a revolving arm, *g*, provided with escapement-pins *h h'*, and with a guide, *i*, to hold the striker-rod *j*, provided preferably at each end with strikers *k k'*. A lever, *l*, preferably made as the armature of an electro-magnet, pivoted at *m*, has detent-stops *n o*, to stop and release the revolving arm *g*. The forward end of the lever *l* is held down by a suitable spring, as at *p*, and the rear end *r* is made as the armature of an electro-magnet, *s*, of ordinary construction connected by wires in any ordinary way with a battery, so that the electric current may be made to operate in connection therewith whenever desirable, so as to draw the armature in contact with the poles of the magnet. The wires and connections for this purpose are too well known to need description herein.

The shaft *t*, upon which the wheel *e* is placed

loosely, has connected with it the inner end of a strong barrel-spring, *u*, held at its other end by a bolt, *v*, of the frame *d*. This shaft *t* has a ratchet, *w*, fixed to it, as shown in dotted lines, and the wheel *e* has a pawl. This spring may be wound up by a key applied to the shaft *t*.

In Fig. 1 the pin *h'* is shown as resting against the stop *n* of the detent, and the revolving arm *g* is held from rotating under the action of the spring *u* and wheel *e*. In this position the striker *k'*, which has struck the bell, is permitted to descend by its gravity to the position shown in full lines, the striker *k* projecting considerably below the lower end of the guide.

Now, if the electro-magnet is made to attract the detent or armature *r*, the stop *n* will be raised so as to permit the detent-pin *h'* to escape therefrom and strike the stop *o*. As the armature is released and moved away from the electro-magnet by the spring *p*, the detent-stop *o* releases the detent-pin *h'*, and the spring *u*, through the train of gearing moved by it, turns the shaft *f* and the guide *i* half a revolution.

As the shaft and guide revolve the centrifugal force of the striker *k* retains it away from the end *x* of the guide, and it strikes the gong, as shown in dotted lines 2, and just as it strikes the gong the detent-pin *h* meets the detent-stop *n*, to permit the striker to descend, as before described, the detent-pin *h* being held until released, as was the pin *h'*, to permit the shaft and guide to be rotated another semi-rotation, to cause the striker *k'* to strike the gong. The striker, moving in a curved path, meets the gong near its lower periphery, and at a point a little removed from a line drawn through the center of the gong and the center of motion of the guide-shaft *f*, and as the striker strikes the gong the rod *j* slides down through the guide, so that the striker rests upon the upper end of the guide.

Instead of permitting the rod *j* to slide in the guide, the strikers may be placed loosely on, and so as to slide upon, the rod. In such case the upper end of the rod or portion upon which the striker slides would move in such an arc with relation to the circular edge of

the gong as not to touch it, and the striker would move to a position beyond the end of the arm.

Fig. 2 shows a striker applied to an arm to operate in this way. The striker will in such case be recessed at its center to receive the headed end of the rod.

It is obvious that the striker may be made of other form than that described in Fig. 2, and made to slide upon the rod.

In Fig. 3 I have shown a striker pivoted upon the end of the revolving arm *g*, so that as the arm is revolved the striker will be thrown from its center of motion in the direction of the arrow 1, causing the arm to strike the gong, a spring, *y*, acting to retract it. The detent might be moved by other power than that of an electro-magnet.

The clock or spring power employed to rotate the shaft *f* is not of my invention, but is an ordinary spring-power. Instead of it any usual train of gearing used in clocks, or as spring or weight powers, may be employed.

I claim—

1. In combination, the gong, and revolving arm, provided at each end with a detent-pin, a guide, a striker loosely connected therewith, substantially as described, and a lever provided with two detent-pins, one detent-pin on

the lever stopping the revolution of the guide and arm just as the striker meets the gong, to permit the striker to descend from the gong under the action of gravity, and at a subsequent movement of the lever to release the revolving arm and permit it to again rotate and cause the striker to strike the gong, each blow of the striker being under control of the operator, substantially as described.

2. In combination, the electro-magnet, and arm provided with two detents, the gong, the shaft, the revolving arm provided with detents at each end, and a striker adapted to move to and from the center of motion of the revolving shaft and arm, and mechanism to rotate the shaft when the armature is operated, substantially as described.

3. The revolving guide *i*, in combination with the rod *j* and the two strikers connected therewith, and made movable in position with reference to the center of rotation of the guide, substantially as described.

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

CHARLES W. HOLTZER.

Witnesses:

G. W. GREGORY,
S. B. KIDDER.