

G. CHRISTIAN.
ELECTRIC SIGNALING DEVICE.
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1,059,835.

Patented Apr. 22, 1913

Fig. 1.

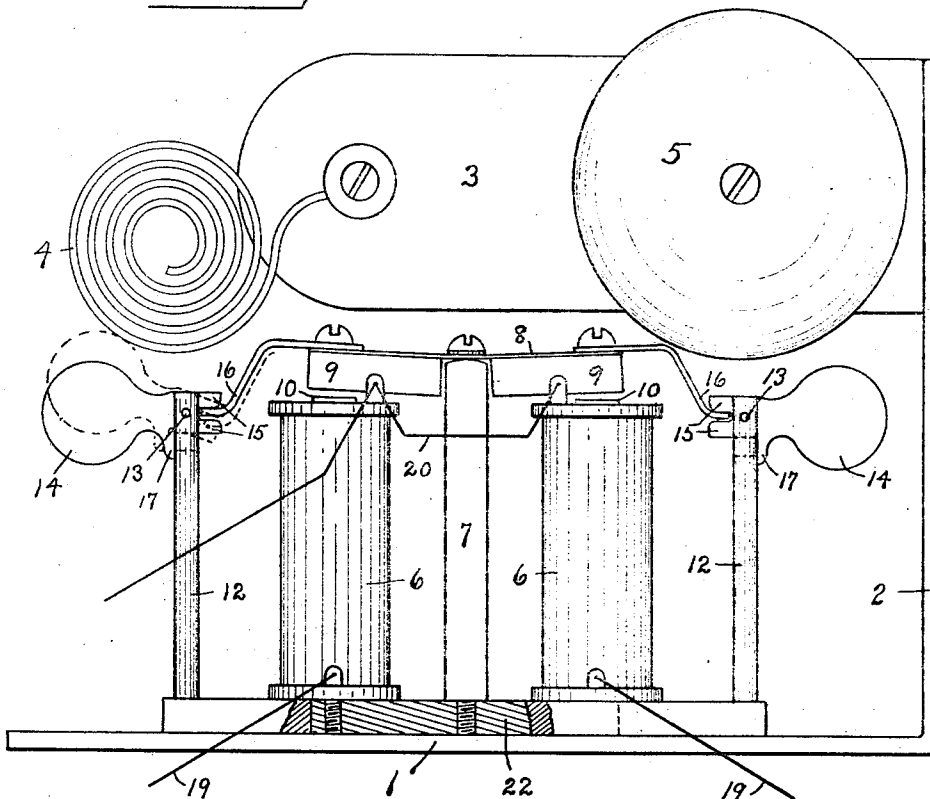
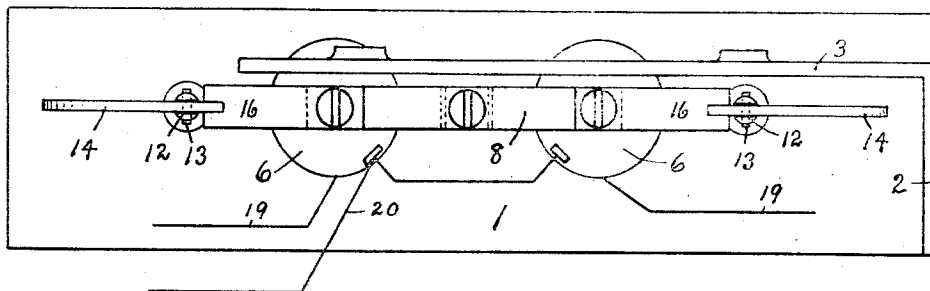


Fig. 2.

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ELECTRIC SIGNALING DEVICE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GILBERT CHRISTIAN, a citizen of the United States, and a resident of Detroit, county of Wayne, and State of Michigan, have invented a new and Improved Electric Signaling Device, of which the following is a specification.

This invention relates to electrically operated means for striking gongs, bells or other resonant bodies for the purpose of producing sounds of a predetermined character, and its object is to provide a signal operating device which will freely operate under proper electric impulses, but cannot be caused to produce the predetermined sounds through the shaking, striking or other sudden movements of the case containing the signaling device.

This invention consists in combination with a resonant body and a support therefor, of an electro-magnet mounted adjacent thereto, a hammer pivotally mounted intermediate its ends, a resiliently mounted armature for the magnet, and an arm connecting to the magnet armature and engaging the hammer in such a manner that the energizing of the magnet will cause the arm on the armature to swing the hammer against the resonant body.

In the accompanying drawing Figure 1 is a plan of this improved mechanism with the resonant bodies removed. Fig. 2 is an elevation of the complete device.

Similar reference characters refer to like parts throughout the several views.

Electric signals for use in connection with telephone pay stations and similar purposes are often sounded by striking the boxes in which the signaling mechanisms are contained, and at times, by turning the boxes upside down. To prevent such unauthorized operation of signals of this type, the present construction is so designed that the striking mechanism is securely held from contacting with the sounding mechanism, except when properly actuated by its electro-magnet.

In the accompanying drawing, a duplex signal is shown, but it will be understood that each side acts independent of the other, and each embodies the entire invention.

The supporting portion of this device comprises a plate 1, an upright 2 and a vertical plate 3, on which support the gong 4 and bell 5 are mounted. Any other desired

type of support or sounding devices may be employed. An electro-magnet 6 is mounted on each side of a post 7, onto the top of which is secured a spring 8 which normally holds the armatures 9 out of contact with the cores 10, and lifts these armatures out of such contact after the magnets are de-energized. Posts 12 have their upper ends slotted and carry pivots 13, on which the hammers 14 are mounted. These hammers are formed with jaws 15, between which the outer ends of the arms 16 extend, which arms are secured to the armatures, as shown in Fig. 2. The hammers have heels 17 to limit their downward movement. Wires 19 connect to their respective magnets, while the return wire 20 preferably connects to both magnets.

It will be observed that when a magnet is energized sufficiently to attract an armature, that the arm presses down the jaws 15 and swings up the hammer 14 against the gong or bell, as shown in dotted lines in Fig. 2, but that the spring 8 will resist such movement at all other times.

In the drawings a bar 22 of suitable material such as soft iron or mild steel is mounted in the support with the cores 10 and the post 7 of similar material secured thereto, but it should be understood that the entire support may be of such material, and may be given any desired form.

By the construction of the post 7, the core 10, and a connecting member, such as the bar 22, as well as the armature 9 of readily magnetizable and demagnetizable material, a powerful magnetic field is produced in the narrow air gap between the core of the magnet 6 and the armature 9 when the electro-magnet is energized. This permits the use of a single electro-magnet to actuate the armature where two of the same size are usually employed. It also permits the use of less material to complete the electro-magnetic circuits between the various parts. This construction also permits the mounting of electro-magnets and bells in any desired number of lines radiating from the post 7.

The details and proportions of all these parts may be modified or changed by skilled electricians without departing from the spirit of my invention as set forth in the claims.

I claim—

1. In an electric signaling device, the com-

combination of a resonant body, an electro-magnet, a hammer provided with a pair of jaws, a pivot for said hammer, an armature for the magnet, a spring supporting the armature and normally holding it out of engagement with the magnet, and an arm connected to the armature and extending between the jaws of the hammer so it may swing the hammer against the resonant body when the magnet is energized, the hammer being so pivoted that its weight is opposed by that of the armature.

2. In an electric signaling device, the combination of a support, a resonant body mounted thereon, an electro-magnet and a post mounted on the support, a hammer pivotally mounted on said post and having a projection to limit its movement in one

direction and a pair of jaws extending toward said electro-magnet, an armature for the electro-magnet, a spring to carry the same and to normally hold it away from the electro-magnet, a support for the spring, and an arm connected at one end to the armature and having its free end extending between the jaws of the hammer so that an operative movement of the armature will swing the hammer against the resonant body.

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

GILBERT CHRISTIAN.

Witnesses:

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