J. A. SWIFT.

Electrical Alarm-Striking Device.

No. 208,275. Patented Sept. 24, 1878.

Fig. 1.

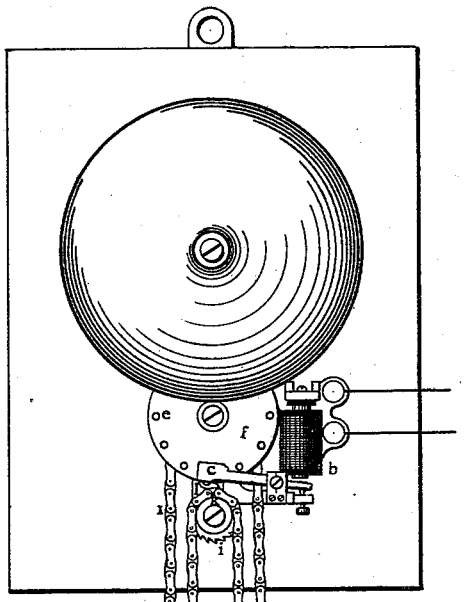

Fig. 2.

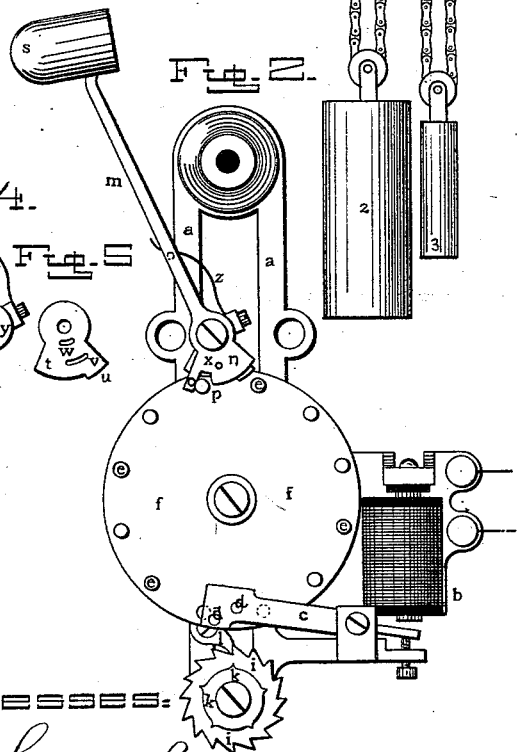

Fig. 3.

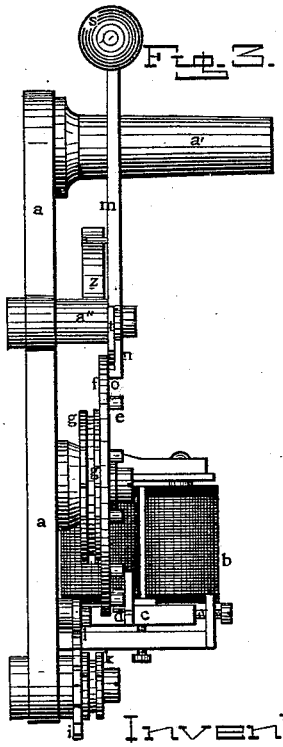

Fig. 4.

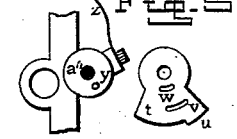

Fig. 5.

Witnesses:

J. W. Garner

W. S. D. Baines

Inventor:

James A. Swift

UNITED STATES PATENT OFFICE.

JAMES A. SWIFT, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN ELECTRICAL ALARM-STRIKING DEVICES.

Specification forming part of Letters Patent No. **208,275**, dated September 21, 1878; application filed August 15, 1878.

To all whom it may concern:

Be it known that I, JAMES A. SWIFT, of Washington, in the District of Columbia, have invented certain new and useful Improvements in Electrical Gongs; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to an improvement in electrical gongs; and it consists in the peculiar construction and arrangement of parts whereby the gong will be made to sound an alarm or signal, as will be more fully described hereinafter.

The accompanying drawings fully illustrate my invention.

Figure 1 is a front elevation of my invention. Fig. 2 is an enlarged view of the striking apparatus. Fig. 3 is a side elevation of same. Figs. 4 and 5 are detailed views.

a represents a metallic frame of any suitable construction, upon which the operating parts of the gong are secured. Upon the lower right-hand corner of the frame *a* are secured the coils *b*, which form an electro-magnet, and by which the armature *c* is operated in the usual manner. From the inner side of the armature *c* project two studs, *d*, which are just far enough apart, and are so situated as regards one another, as to hold one of the studs *e*, which projects outward from the rotating disk *f* when the disk is stationary. The inner side of the disk *f* consists of a chain-wheel, *g*, which causes the disk *f* to revolve when relieved by the armature *c*.

To the lower end of the frame *a* is attached a ratchet-wheel, *i*, which has the small chain-wheel *k* secured to its outer face, the wheel *i* being controlled by means of the pawl *l*.

Pivoted just above the disk *f* is the lever *m*, the lower end of which is formed into the plate *n*, having the projection *o* and the indentation *p*, as shown, the upper end of the lever being socketed into the hammer *s*.

Upon the inner side of the plate *n* is pivoted the plate *t*, having a projection, *u*, at its lower right-hand corner, and two concentric slots, *v* and *w*, cut in it, as shown in Fig. 5.

Projecting from the inner surface of the plate *n* is the stud *x*, which works in the slot *v* of the plate *t*, a second stud, *y*, projecting from the standard *a''*, working in the slot *w*.

Pressing against the lever *m* is the spring *z*, which serves to give force to the hammer *s* when striking against the gong.

Suspended from the chain-wheel *g* is an endless chain, 1, which is looped up in the middle, so as to rest, also, over the small chain-wheel *k*. The left hand of the two loops thus formed in the chain has a large weight, 2, hanging to it, which weight serves to give motive power to the hammer when in use, the right-hand loop being kept taut by the small weight 3.

The operation of my invention is as follows: When the circuit is open the outer end of the armature *c* is held up, so as to keep one of the studs *d* pressed against one of the studs *e* of the disk *f*, thus holding the disk stationary; but the instant the circuit is closed the armature *c* is attracted, and allows the disk *f* to pass the first and rest against the second stud of armature, and as soon as the circuit is broken the armature is brought back by the spiral spring, which causes the disk *f* to revolve a short distance, the plate *n* is tripped, and the spring *z* forces the hammer against the gong, while in the meantime the projection *u* on the plate *t* holds the revolving disk at rest, giving the hammer its full force to strike.

The moment the hammer strikes the gong the stud *x*, which works in the slot *v*, removes the projection *u*, and the disk, completing its revolution, causes another stud to engage with the projection *o* and bring back the lever in the position shown in Fig. 2. Another closing of the circuit causes the same result, and so on every time the circuit is opened and closed, causing the gong to make one sound.

My invention is particularly adapted for use in hotels and factories for sounding fire-alarms, &c.

It will be observed that by this construction of the operating mechanism of the gong the weight 2 can be wound up even when the gong is striking—an advantage which no other gong now in use possesses.

In constructing a large gong I may find it necessary to depart somewhat from the precise construction here shown and described—as, for instance, the placing of cogs upon the periphery of the disk *f* and operating it through the medium of a small pinion by means of the armature *c* instead of directly by the armature, as here shown; but this would obviously be no departure from the spirit of my invention.

Having thus described my invention, I claim—

1. The armature *c*, provided with the studs *d*, operating the gong by means of the electro-magnet *b*, plates *n* and *t*, the lever *m*, and the endless chain 1 and weight 2, substantially as shown and described.

2. The lever *m*, having its lower end formed into the plate *n*, provided with the projection *o*, indentation *p*, and stud *x*, substantially as described.

3. The plate *t*, provided with the projection *u*, and having two concentric slots, *v* and *w*, cut in it, substantially as specified.

4. In an electrical gong, the combination of the disk *f*, armature *c*, plates *n* and *o*, spring *z*, and lever *m*, the whole being operated by means of the endless chain 1 and weight 2 and electro-magnet *b*, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JAMES A. SWIFT.

Witnesses:
J. W. GARNER,
W. S. D. HAINES.