R. BRAGG.

ELECTRO-MAGNETIC TRIPPING AND RECORDING MECHANISM.

No. 173,261. Patented Feb. 8, 1876.

Fig. 1.

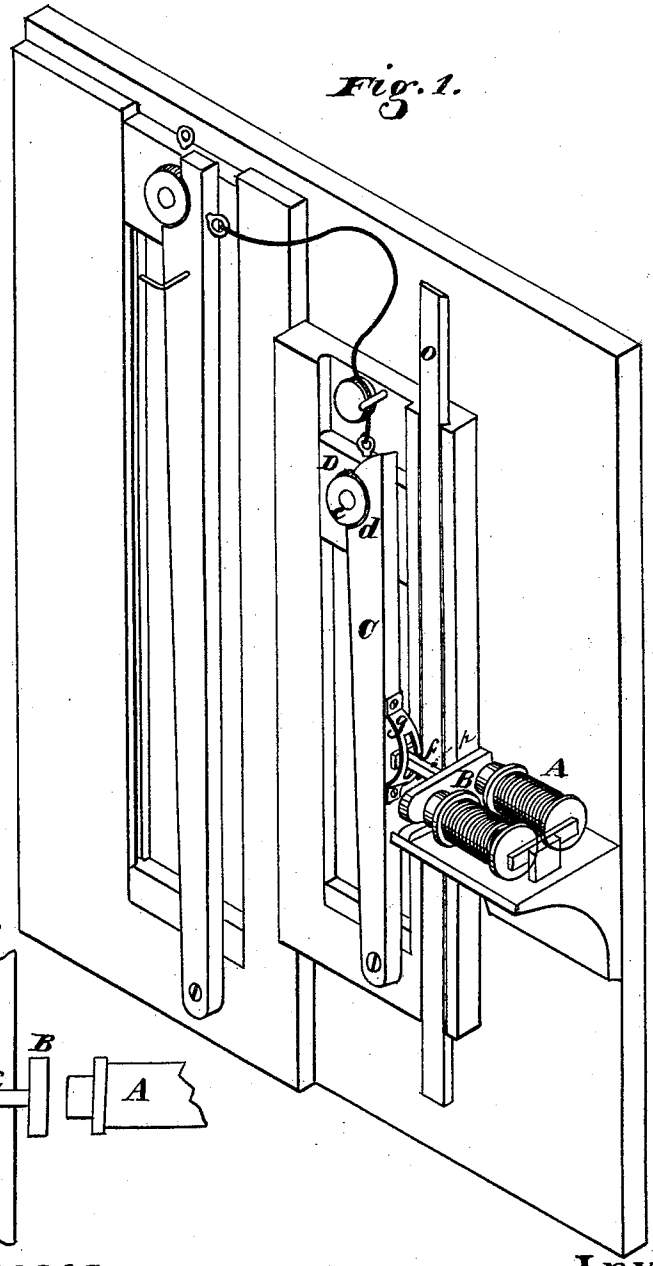

Fig. 2.

Witnesses

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ROBERT BRAGG, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN ELECTRO-MAGNETIC TRIPPING AND RECORDING MECHANISMS.

Specification forming part of Letters Patent No. **173,261**, dated February 8, 1876; application filed November 6, 1875.

To all whom it may concern:

Be it known that I, ROBERT BRAGG, of San Francisco city and county, State of California, have invented an Electro-Magnetic Power-Generator; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention without further invention or experiment.

The object of my invention is to provide an arrangement by which I can obtain sufficient power from the action of an electro-magnet and its armature to perform certain stated duties, which will be hereafter fully explained.

For the purpose of this specification, I will describe the arrangement and operation of my invention with especial reference to its application on fire-engine houses, in which it can be used for the purposes of releasing the horses from their stalls, ringing bells to awaken the firemen, turning up the gas, opening doors, and for various other purposes; all of which can be operated by the electric current, which transmits the alarm to the different engine-houses, thus operating the various devices with which it is connected simultaneously.

Referring to the accompanying drawings, Figure 1 is a perspective view. Fig. 2 is a detail view.

Let A represent an electro-magnet, with which the wire of the fire-alarm telegraph is connected, so that when an alarm is telegraphed the electric current will pass through the magnet and cause the armature B to be drawn up against it. C is an upright trip-bar, which is pivoted at its lower end, and has a circular notch, *d*, formed on one side of its upper end. A weight, D, is arranged to slide up and down beside the trip-bar, and this weight has a roller, *e*, on one side, which can be caught in the notch *d* in the trip-bar when it is desired to suspend the weight and set the device. The armature B has a shank, *f*, which passes through a slot in a metal loop, *g*, which is secured to the edge of the bar C opposite the magnet, and the end of the shank is headed on the inside of the loop. A spring, *h*, serves to keep the armature drawn back away from the magnet.

Now, it is evident that when the electric current enters the magnet the armature will be drawn up against it, thus releasing the weight D from the notch in the trip-bar, and allowing it to drop. This weight can be connected directly with the device to be operated; or it may be connected with and made to operate another trip-bar, which will drop a heavier weight, in order to aggregate the power when necessary. This system of dropping weights, however, is fully described in a former patent, which was granted to me on the 13th day of July, 1875; and they do not, therefore, need to be described in this specification.

I also provide for registering the strokes of the armature B, and, as the strokes of the armature will correspond with the number of the box from which the alarm proceeds, the register will indicate that number properly. To do this I arrange a bar, O, to slide vertically past the armature. This bar will be moved by clock-work, (not shown,) which is set in motion by the movement of the armature. To the shank *f* of the armature I will attach a pencil, *p*, which will make a mark across the passing rod each time the armature moves against the magnet, thus registering the number of the box, so that a mistake in counting the strokes of the alarm bell or gong can be rectified.

In my former patents these tripping devices were operated by the hammer of the gong; but it often desirable to have two, or even more, sources of power, so that each one can perform a specific duty.

By the present arrangement I can employ any desired number of magnets, and thus operate an equal number of separate weight-powers, each of which performs a separate duty. A spring could be used in place of the suspended weight, but its application would be substantially the same as for the weight, and it would therefore be a mechanical equivalent.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The electro-magnet A and its armature B, with its headed shank *f*, in combination with the trip bar or lever C, with its notch *d*,

slotted loop *g*, and spring *h*, and the weight D, with its roller *e*, all combined and arranged to operate substantially as and for the purpose described.

2. The combination, with the armature B of an electro-magnet, of the trip-lever C and suspended weight D, the several parts constructed and arranged to operate in the manner substantially as and for the purpose specified.

3. In combination with the armature B, with its shank *f* and pencil *p*, I claim the sliding bar O, operated by clock-work, substantially as and for the purpose described.

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Witnesses:
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