

L. H. HIMIOBEN.
 RESONATOR.
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1,017,871.

Patented Feb. 20, 1912.

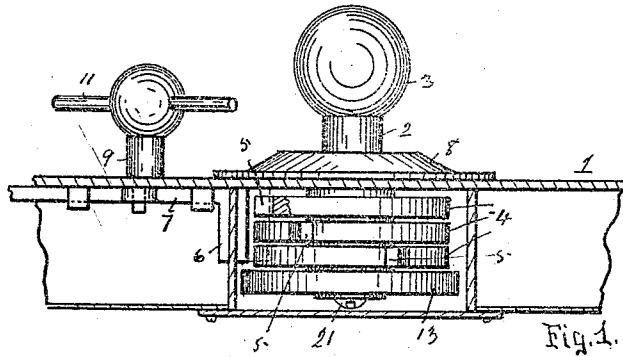


Fig. 1.

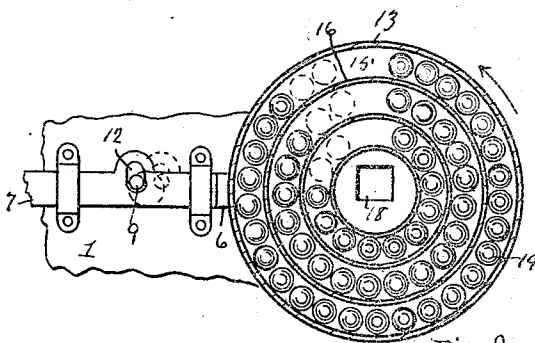


Fig. 2.

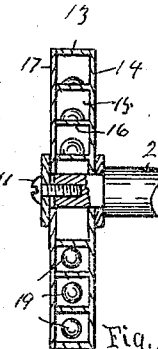


Fig. 3.

Witnesses.

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UNITED STATES PATENT OFFICE.

LUDWIG H. HIMIOBEN, OF HAMILTON, OHIO.

RESONATOR.

1,017,871.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, LUDWIG H. HIMIOBEN, a citizen of the United States, residing at Hamilton, Ohio, have invented a new and useful Improvement in Resonators, of which the following is a specification.

My invention relates to resonators of the class adapted to the use of combination locks or for other suitable purposes and the objects of my improvements are to provide means for preventing burglars or others from opening combination locks by either feeling or hearing the movement of the tumblers; to provide a resonating device for irregularly resisting the movement of the lock stem and for producing irregularly intermittent sounds whereby the operator cannot locate the position of the tumblers by either the sense of feeling or hearing and to produce a simple compact and efficient device which may be removably secured to locks of different sizes or styles. These objects may be attained in the following described manner as illustrated in the accompanying drawings, in which:—

Figure 1 is a horizontal section of a safe door showing a combination lock provided with my improvement; Figs. 2 and 3 transverse and longitudinal sections respectively of the resonator.

In the drawings 1 represents portions of a door, 2 the stem of a combination lock provided with a knob 3; 4 a series of tumblers formed with gaps 5 for the insertion therein of the tail 6 of the bolt 7; 8 the index plate secured to turn with the stem; 9 an eccentric pin provided with a handle 11 and movable within a slot 12 for shifting the bolt longitudinally, all being constructed and arranged in the ordinary manner.

The resonator 13 consists of a metal casing 14 divided into a series of concentric chambers 15 by means of circular partitions 16 and inclosed by a cover 17. An opening 18 preferably rectangular in cross-section is formed through the casing and preferably eccentric to the chambers 15. A series of gravity steel balls 19 may be movably supported within the said chambers and the casing may be removably secured on the inner end of the stem 2 by means of a screw 21 to turn therewith and in a vertical plane. Any suitable material as one or more seg-

ments of a metal ring adapted to slide by gravity and not become packed within the chambers may be substituted for the balls 19.

In operation, the usual method employed by an expert or a burglar for opening a lock without knowing its combination, is to close the ears and turn the knob with the mouth that the movement of the tumblers may be heard and felt more distinctly for registering the gaps therein with the bolt. The rotative movement of the resonator with the lock stem causes the balls therein to shift their position circumferentially within the chambers by gravity whereby irregularly intermittent sounds are produced which prevent the movement of the tumblers from being heard. The movement of the balls also interferes with the sensitive movement of the knob so that the tumblers cannot be arranged by the sense of feeling.

The use of the resonator is an absolute protection against the opening of a combination lock by the sense of feeling or of hearing.

Having fully described my improvements what I claim as my invention and desire to secure by Letters Patent of the United States is:—

1. A resonator comprising a closed cylindrical metal casing formed with a rectangular opening eccentric to the axis and with a series of circular partitions whereby it is separated into a number of concentric circular chambers, and gravity members movable within the chambers.

2. A resonator comprising a closed metal casing formed with a series of concentric partitions whereby it is divided into a plural number of chambers and a plural number of gravity balls movable in each of the chambers.

3. A resonator comprising a closed cylindrical metal casing formed with a longitudinal opening, and with a series of circular partitions therein whereby a series of closed circular chambers are formed within the casing, and a series of metal balls movable by gravity within each of the chambers.

LUDWIG H. HIMIOBEN.

Witnesses:

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