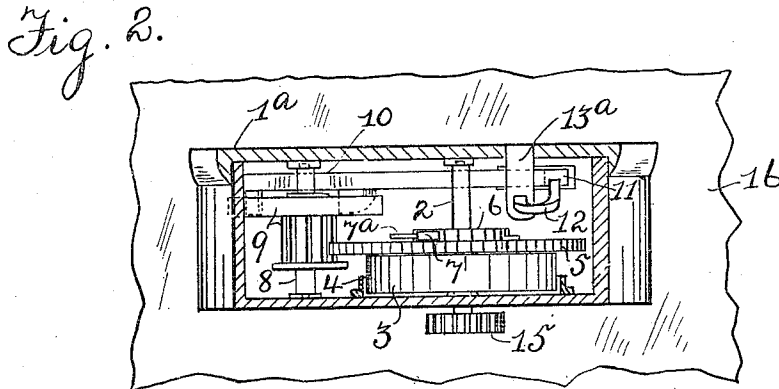
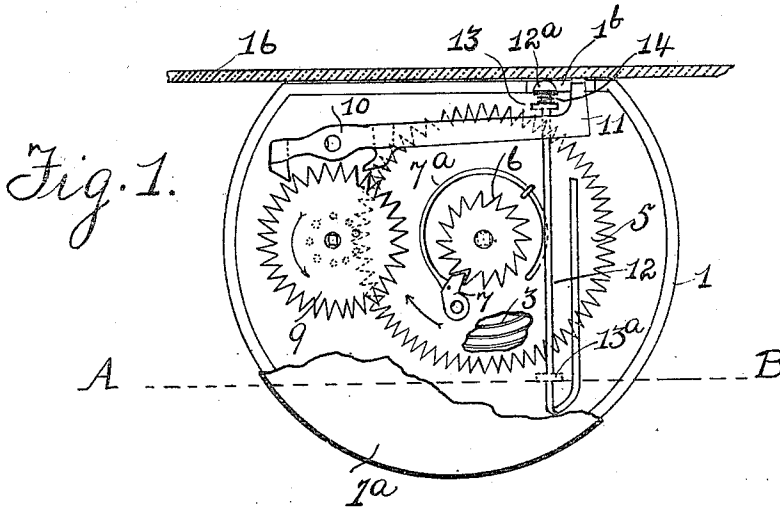


E. C. REGLI.
TICK-TACK TOY.
APPLICATION FILED JULY 23, 1908.

972,644.

Patented Oct. 11, 1910.



WITNESSES:

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TICK-TACK TOY.

972,644.

Specification of Letters Patent.

Patented Oct. 11, 1910.

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To all whom it may concern:

Be it known that I, EDWARD C. REGLI, a citizen of the United States, residing at Duluth, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Tick-Tack Toys; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to mechanical vibrators, and has for its object the production of a self-contained device of this general character which may be operated by merely applying it to an object, so as to communicate one or more taps or blows thereto.

Briefly stated, the invention comprises a train of gears with an actuating spring, a vibrating or tapping member driven by the gears and a detent for said member, the whole inclosed within a casing having an opening through which both the detent and the vibrating member may project, the parts of the casing contiguous to said opening being shaped so as to form a limiting gage for application to an object, whereby the detent may be forced in by the application to the object, and the vibrating member will thereupon act upon the object through the opening.

My invention is illustrated in the accompanying drawings in which—

Figure 1 is a side view of a complete device, showing a portion of the casing broken away. Fig. 2 is a sectional view on the line A—B of Fig. 1, looking upwardly.

Referring to the drawings, 1 designates the casing, which has curved side walls and plane faces 1^a. The general figure of the side walls is a circle, but on one side this figure is flattened to form a plane face in which an opening 1^b is produced. Within the casing is mounted a spring motor comprising a main arbor 2 driven by a coiled spring 3, the outer end of which is fixed to the box ring 4, a main gear 5 meshing with a lantern pinion which together with the scape wheel 9 is fixed upon the arbor 8, a ratchet wheel 6 with a detent pawl 7 held in engagement by the usual spring 7^a, a pallet lever 10 carrying the tapper head 11, and a detent 12 sliding in ears 13 and 13^a on the casing. A button 15 is provided external to the casing for turning the arbor 2

and thus winding the spring. The end of the detent is provided with a contact button 12^a between which and the ear 13 is placed a coiled spring 14, which tends to hold the detent normally in such position that its head or button 12^a projects through the opening 1^b in the casing, and the member within the casing engages the end of the lever 10 beneath the head 11, thus preventing vibration thereof. The tapper head 11, which may conveniently be weighted to produce a heavier blow, lies close to the projecting end of the detent 12, and its path of travel is through the same opening 1^b, in an arc the tangent of which at the point of intersection with the plane of the outer face of the casing is substantially perpendicular to the latter, so as to produce a direct blow upon any object to which said face is applied. There may be a slight angular divergence in this respect without loss of efficiency, and as the lever 10 is necessarily pivoted within the case, the blow cannot in all cases be normal to the surface of the object, but I prefer to approximate this normal or perpendicular direction as closely as possible.

The detent 12, spring pressed at 14, constitutes a simple controlling device for the motor, the strength of the spring 14 being such that at all times except when the head 12^a is forced into the casing, the lever 10 and tapper head 11 will be held immovable, locking the wheel 9 against turning. In the drawing I have shown the casing with its flattened wall pressed against a plane object 16, such as a pane of glass. Since this flattened wall bears a fixed relation to the motor and other parts, especially the tapper head 11 and the detent head 12^a, it acts as a gage, to limit the travel of the hammer or tapper and to maintain a fixed and rigid relation between said tapper 11, the controlling device or detent 12, and the surface of the object 16 to be acted upon. The plane of impact of the tapper and the plane in which the outer surface of the head 12^a lies during such impact, is the plane of the outer surface of the gage wall.

The operation of this device will be fully understood from the foregoing description and the drawing. With the motor spring wound, the flat portion of the casing is held firmly against the object 16, and the head 12^a of the detent 12 is thus forced and maintained in the position shown in Fig. 1. The

lever 10 being released, the train of gears operates to vibrate it and the tapper head 11, producing one or more blows of the latter against the surface of the object, the number
5 of blows being determined by the duration of contact of the casing.

I am aware that some changes may be made in matters of detail in this device without departing from the spirit of my invention; also that the principle involved may
10 be employed in other forms of apparatus, and applied to many useful purposes. I do not wish to limit myself therefore to the specific embodiment I have disclosed, nor
15 to its use exclusively as a toy, and I wish it understood that I contemplate all such modifications and uses as may fairly fall within the scope of the appended claims.

What I claim is—

20 1. A power driven tapping device comprising a casing having an opening in one of its walls, a spring driven train of gears mounted in said casing, a tapper head actuated thereby and normally lying entirely
25 within the casing but adapted to strike through the opening, and a detent for said tapper with resilient means normally forcing it against the tapper with its extremity protruding through the opening in proximity to the tapper head whereby the application of the casing to an object will force
30 in the detent, release the tapper and cause the latter to strike the object in close proximity to the point of contact of the detent, substantially as described.

2. A power driven tapping device comprising a casing having one plane face containing an opening but otherwise entirely closed; a spring motor secured within the
40 casing, with external means for winding the same; a weighted tapper head actuated by said motor and normally lying entirely within the casing but having its path of travel extending through said opening and substantially
45 perpendicularly to said plane face

of the casing; and a detent normally pressed out through the opening and having a member within the casing adapted to then restrain the movement of the tapper head, but when forced in to disengage the same, 50 whereby pressure on the plane surface of the casing against an object external thereto will free the tapper head and cause it to strike repeated blows through the opening against said object, substantially as described. 55

3. A power driven tapping device comprising a casing having an opening in one wall thereof, but otherwise closed, a spring motor in said casing, a tapper head actuated by said motor, and a spring pressed detent for the tapper head, said detent and tapper head both operating through the single opening in the casing, substantially as described. 65

4. A power driven tapping device comprising a motor, a tapper head driven by the motor, and a controlling device for the tapper head, together with a casing inclosing said parts and provided with a gaging 70 face adapted to limit the travel and determine the plane of impact of the detent and the tapper head, respectively, substantially as described.

5. A power driven tapping device comprising a spring motor, a weighted tapper head driven thereby, and a controlling device for the tapper head, together with a gage device bearing a fixed relation to the motor and the other parts, and in operation 80 adapted to maintain a fixed and rigid relation between the tapper, the controlling device, and the surface to be operated upon, substantially as described.

In testimony whereof I hereunto affix my signature, in presence of two witnesses. 85

EDWARD C. REGILL.

Witnesses:

JAMES T. WATSON,
W. H. SMALLWOOD.