

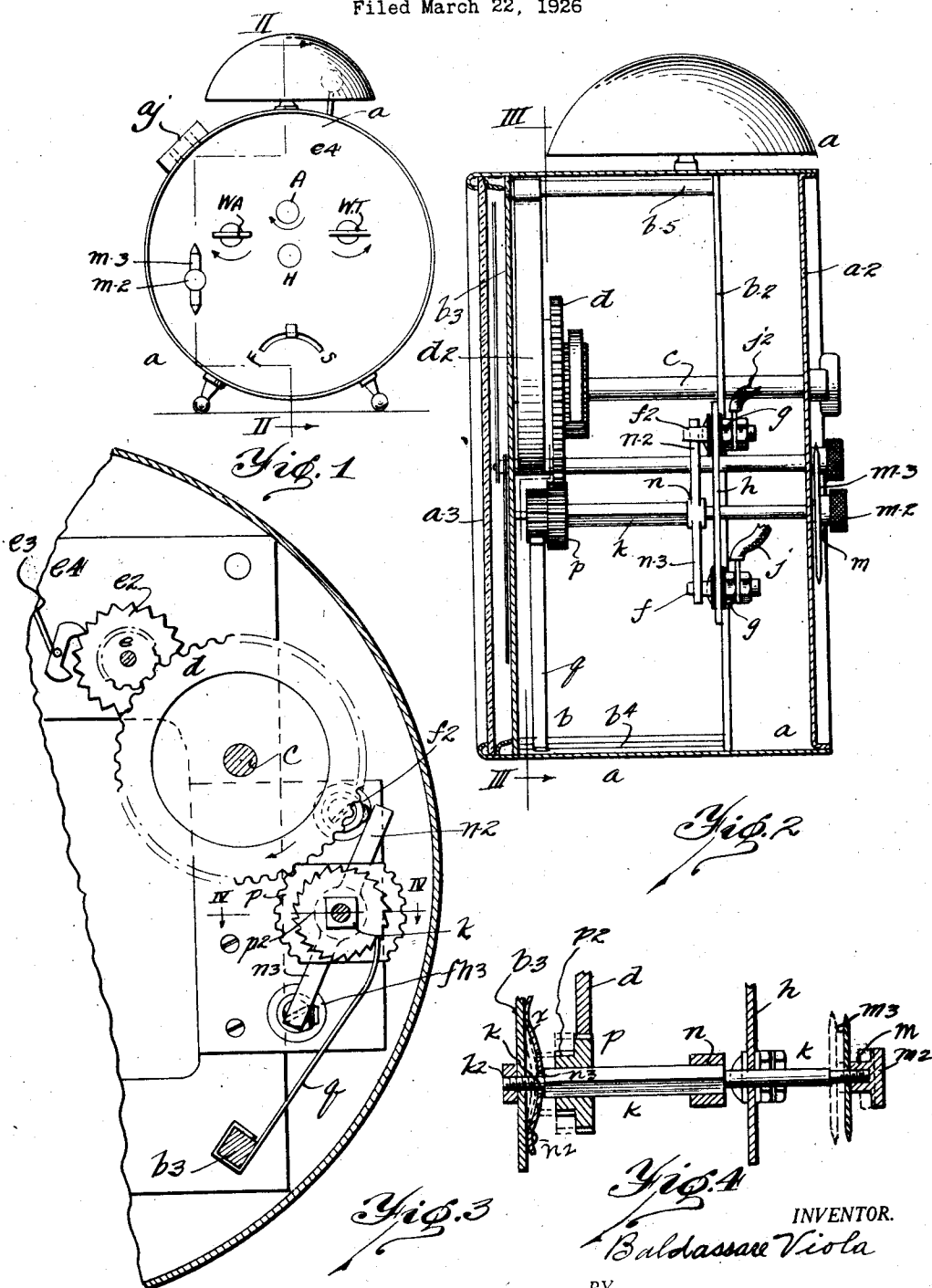
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ELECTRIC ALARM CLOCK

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ELECTRIC ALARM CLOCK.

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My invention relates to attachments for alarm clocks and an object of my invention is to provide a simple and inexpensive apparatus that may be attached to any existing alarm clock that will be actuated thereby to turn on the lights, start up the furnace, or produce other similar effects when the alarm mechanism operates.

In the accompanying drawing I have shown the apparatus embodying my improvement in connection with the alarm mechanism, the time mechanism of the clock being omitted as it is conventional and releases the alarm mechanism in the usual way.

Figure 1, is a rear elevation of an alarm clock with the apparatus embodying my invention attached thereto.

Figure 2, is a section of the line II, II, Figure 1, looking in the direction of the arrow.

Figure 3, is a partial elevation and section on the line III, III, Figure 2, looking in the direction of the arrow.

Figure 4, is a detailed view of the apparatus embodying my invention, mostly in section and separate from the clock.

a , a , is the casing of the clock. W , A , is the key for winding the alarm. A , is the thumb piece for setting the alarm. W , T , is the key for winding the time mechanism. F , S , is the slot for the regulator. a^2 , is the back of the clock and a^3 , the glass face thereon.

b , is the frame carrying the various wheels of the clock mechanism. This is of the conventional type, including a sheet metal back piece, b^2 , and a sheet metal front piece, b^3 , joined by rods or stanchions, b^4 , b^5 , which hold the same properly spaced from each other and parallel.

c , is an arbor bearing in the back, a^2 , and in the frame b .

d , is a going-wheel, upon the arbor c , actuated by a spring d^2 , the teeth of which wheel mesh with a cog wheel e which actuates a star-wheel e^2 , which in turn acts upon the anchor e^3 to oscillate the bell hammer e^4 .

k , is a rod or shaft which I fix to the clock extending transversely through the case, a , thereof and supported by the back plate, a^2 , and by the frame b , either by bearing in the front and back parts b^2 , b^3

of said frame or by bearing in a special plate h secured to said frame.

p , is a gear wheel cut away on opposite sides, as shown at p^3 , p^4 , in Figure 3. The teeth of the segmental-wheel, g , are adapted to engage the teeth of the going-wheel d , but when the wheel p turns to an angular position at which a cut-away portion is adjacent to the going-wheel, the wheel p is free and does not engage in the going-wheel d .

p^2 , is a ratchet wheel connected co-axially with the wheel p . q , is a spring pawl engaging the ratchet teeth of the wheel p^2 and acting to prevent casual turning of said wheel when its teeth are disengaged.

The wheels p and p^2 are fixed to the rod k so as to turn therewith.

n , is a double armed lever fixed at its center to the rod or shaft k .

f , and f^2 are flexible contact springs secured to the frame work, b , in any convenient manner, as by nuts g , g . The contacts f , and f^2 are insulated from the frame and are so located that one arm n^2 shall contact the spring f^2 on one side of said spring when the arm n^3 contacts the spring f upon the other side of said spring.

j , j^2 , are electrical conductors connecting respectively with the contacts f and f^2 .

m , is a thumb nut having a pointer m^3 thereon and a thumb piece m^2 . The nut m is fixed to the protruding end of the rod or shaft, k , at the rear of the clock.

The operation of the above described device is as follows:—

The thumb piece m^2 is utilized to turn the shaft k and thereby the segmental-wheel p to a position at which the teeth of one of the toothed segments is just engaging a tooth of the going-wheel, d . In this position the arms n^2 , n^3 of the lever n are out of engagement with the contact f and f^2 and the pointer arm m^3 is in a position at the back of the clock which indicates that the device is set. When the time mechanism of the clock releases the going-wheel d , that is turned by the spring d^2 , which rotates the segmental wheel p to the position shown in Figure 3, in which the arms n^3 , n^2 engage the elastic contacts f and f^2 and complete the electric circuit between the wires or mains j , j^2 , which will cause the current to flow through the lights or through a motor

to open the draft of the furnace or perform any other service.

In the last described position of the rod or shaft k , the last tooth of a segment of the wheel p is in engagement with the tooth of the going-wheel d so that the arms n^3 , n^2 , of the lever n are pressed against the contacts f and f^2 , but are not carried beyond these contacts, because the succeeding teeth of the wheel p are cut away.

When it is desired to reset the apparatus the lever n is turned past the contacts f , f^2 , which bend to let it pass and the segmental wheel p is turned to the position first described.

Instead of bending the contacts to permit the lever n to pass, as above described, the rod k may be pressed inward as indicated in broken lines in Figure 4, against the action of the spring x , properly secured at n^2 to a stationary support and acting against the shoulder n^3 to restore said rod when released. In this way the wheel p is freed from the wheel d and the lever n passes by the contacts f , f^2 without bending the same.

What I claim is:—

1. In a clock, the combination of an alarm

mechanism, two flexible elastic contacts secured upon but insulated from said clock, a gear wheel forming a part of said alarm mechanism, a segmental wheel located between, said contacts and adapted to engage the same on opposite sides and to pass over the same the parts being so arranged that the contacts shall be made near the end of the engagement of said segmental wheel with the first mentioned wheel.

2. In a clock, the combination of an alarm mechanism having a gear wheel, d , a shaft k adapted to turn in bearings on said clock, a segmental gear wheel, p , on said shaft adapted to engage the gear wheel d , an electric contact on said clock, means whereby the turning of said segmental wheel shall complete the circuit through said contact near the end of its engagement with said first mentioned gear wheel, said shaft extending to the outside of the clock and being adapted to be manipulated to pass by said contact and to reengage said gear wheels.

In testimony whereof, I sign this specification.

BALDASSARE VIOLA.