

C. H. RETTMANN.
ELECTROWHISTLE ALARM.
APPLICATION FILED MAY 6, 1911.

1,017,689.

Patented Feb. 20, 1912.

Fig. 1.

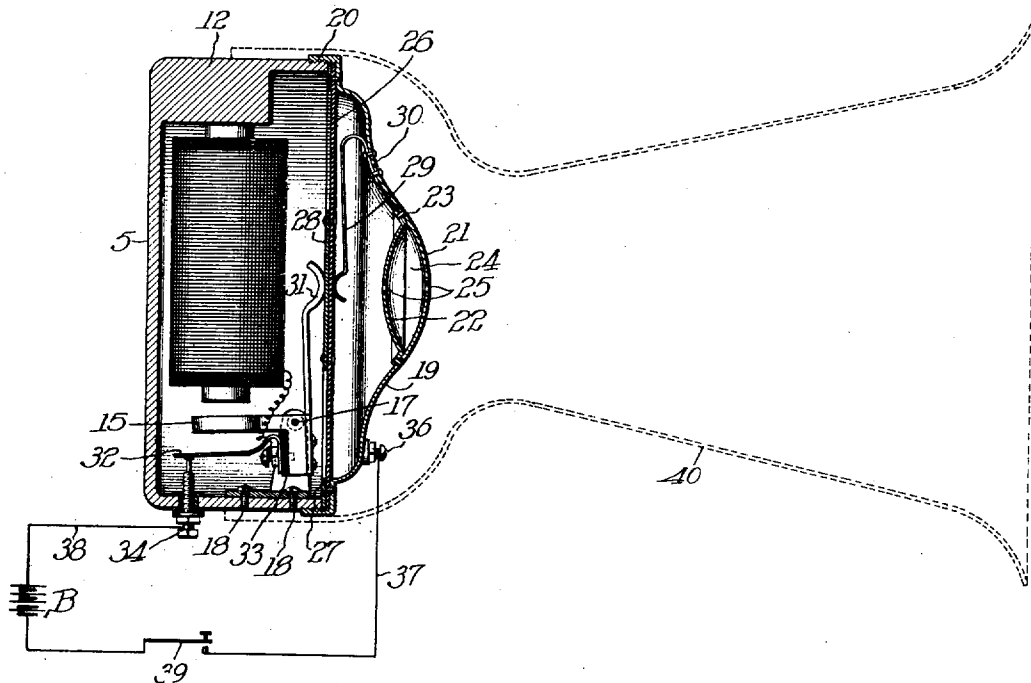
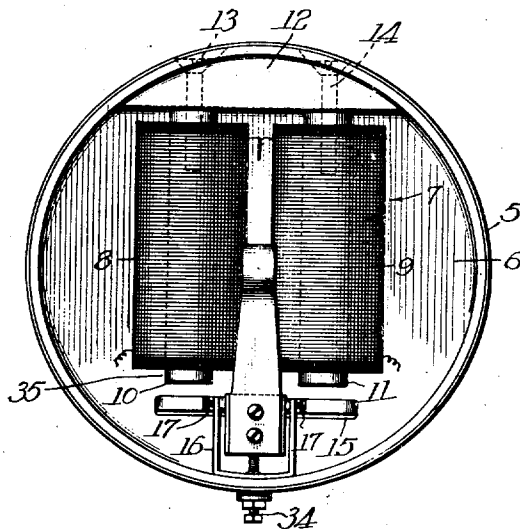


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE

CHARLES H. RETTMANN, OF CHICAGO, ILLINOIS.

ELECTROWHISTLE-ALARM.

1,017,689.

Specification of Letters Patent.

Patented Feb. 20, 1912.

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To all whom it may concern:

Be it known that I, CHARLES H. RETTMANN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Electrowhistle-Alarms, of which the following is a specification.

My invention relates to improvements in devices for producing whistling sounds.

One of the objects of my invention is to provide an electric motor, that may be operated from a remote point to set in motion air, that may be employed in association with a proper device for producing a whistling sound; for signaling; for producing musical notes, or for sounding alarms of distinctive characters.

Other and further objects of my invention will become readily apparent to persons skilled in the art from a consideration of the following description taken in conjunction with the drawing wherein;

Figure 1 is a central section of the device showing a horn in dotted lines; and Fig. 2 is a plan view of the casing and the contained electric motor with the top removed.

In both views the same reference characters indicate similar parts.

A casing 5, preferably of iron, incloses a chamber 6, which latter contains an electric motor, consisting of an electro-magnet 7, comprising coils 8 and 9, providing magnet poles 10 and 11 respectively, joined to the integral yoke 12, as by screws 13 and 14. A responsive armature 15 is pivoted in a frame 16, as at 17, so that it may move freely within a field near the magnet poles 10 and 11. The frame 16 is secured to the wall of the casing, as by screws 18. The cover 19 is preferably adapted for screw threaded engagement with the open end of the casing 5, as at 20, and to bulge outwardly as at 21. Fixed to the interior surface of the cover, underlying the bulged portion 21, is a similarly inwardly-curved piece 22, secured to the cover, as by pins 23, or otherwise, to provide therebetween a chamber 24. The piece 22 and the part 21 are axially perforated as at 25. When air is forcibly driven through the perforations, 25, the air is set into vibration to produce a sound in well known manner.

That the electric motor may produce the desired draft of air, I cover the opening of

the casing with a diaphragm preferably of rubber or other similarly flexible material and secure it at its edges to a metallic annulus 27, to afford support for said diaphragm. Near the central region of the diaphragm I secure a disk 28, preferably metallic, to serve as a plunger, to a degree, when the diaphragm is vibrated and to act as a wearing plate. A spring 29 is secured to the cover 19, as at 30; its free end bearing upon the diaphragm near its center and yieldingly holding it in an inwardly inclined position against the action of the motor. An arm 31 fixed for movement with the armature 15, as by screws, bears upon the plate 28, on substantially the opposite position of the diaphragm controlled by spring 29.

When the electro-magnet is energized the diaphragm will be pushed outwardly by the arm 31, against the spring 29 and cause a draft of air to be forcibly projected through the perforations 25, thereby producing a whistle-like note. When the electro-magnet is deenergized the diaphragm will be returned to its original position by the spring 29, thus causing another draft of air to pass through the perforations 25, and thus producing another whistling impulse. If now the diaphragm be rapidly moved in alternate directions, there will be produced thereby a succession of corresponding whistling impulses. To this end I provide a vibrating means in the contact spring 32 secured to an insulating block 33 carried by the armature 15, in coöperative relation with the insulated contact screw 34, substantially such an arrangement as is usually applied to a vibrating bell.

One end of the windings of the coils 8 and 9, is connected to the frame, as at 35. the other end is connected to the insulated contact spring 32. To the terminal screw 36 mounted upon the cover in electrical connection therewith and with the casing is attached one wire 37 of the circuit. Wire 38 is connected to insulated screw terminal 34. A battery B energizes the electro-magnet when the key 39 is closed. When the key 39 is closed the armature will be vibrated rapidly and the device will produce a correspondingly rapid succession of whistling sounds. A horn 40, shown in dotted lines in Fig. 1, may encompass the active end of the casing 5, to intensify the sounds produced by the device. In such relation, with the horn, it

may be used as an alarm signal for automobiles, or it may be used in other situations where it is desirable that it shall be operated from a remote point, and a plurality of
5 such devices, adapted to produce sounds varying in character, could be used as a music-producing instrument.

While I have herein disclosed a single embodiment of my invention it is evident
10 that changes within the spirit and scope of the claims may be made without departure from my invention.

Having described my invention, what I claim is:

15 1. In a device of the character described, the combination with a casing, an electromagnet therein, of a cover therefor, means on the cover operable by impulses of air to produce sound, a diaphragm, and diaphragm
20 moving means associated with said diaphragm and magnet to produce impulses of air for the sound producing means.

2. In a device of the character described, the combination with a casing, a perforate
25 closure therefor, a flexible diaphragm dividing said casing into two compartments, an electro-magnet in one compartment, and means connecting said magnet and diaphragm to vibrate the latter whereby air in
30 the other compartment is caused to be projected from and drawn in through said perforation to produce a whistling sound.

3. In a device of the character described, the combination with a casing, a perforate
35 closure therefor, a flexible diaphragm dividing said casing into two compartments, an electro-magnet in one compartment, means connecting said magnet and diaphragm to vibrate the latter to produce air currents to
40 and from the other compartment through said perforations, and a sound-producing means in the path of said air currents.

4. In a device of the character described, a casing, a cover therefor, means upon the
45 cover operable by impulses of air to produce a sound, a diaphragm dividing said casing into two compartments, means in one

said compartment to hold said diaphragm yieldingly toward the other compartment, and means in said other compartment to
50 move the diaphragm back against said yielding means to cause impulses of air, comprising an electromagnet, an armature therefor, an arm movable by said armature to press against said diaphragm, and suitable
55 electric contacts to control said electromagnet.

5. In a device of the character described, a casing, means on a wall of the casing operable by impulses of air to produce a sound,
60 a diaphragm in said casing, a spring upon one side of said diaphragm bearing upon the diaphragm near its center, and means upon the other side of the diaphragm to move it against the effect of said spring to
65 produce an impulse of air, comprising an electromagnet, an armature moved thereby, and an arm 31 fixed at one end to said armature, and at its other end arranged to bear against said diaphragm near its center when
70 the armature is attracted.

6. In a device of the character described, a casing, having a front open end, a diaphragm closing said open end, a cover member engaging the casing and holding said
75 diaphragm in position, the central portion of said cover being bulged outwardly to provide an air space between it and the diaphragm, means carried by said cover member operable by an impulse of air to pro-
80 duce a sound, yielding means in said air space to hold said diaphragm at one extreme of its movement, and means within the casing to move said diaphragm against said
85 yielding means to force air from said air space for the production of an impulse of air.

In testimony whereof I hereunto set my hand in the presence of two witnesses.

CHARLES H. RETTMANN.

In the presence of—
FORÉE BAIN,
MARY F. ALLEN.