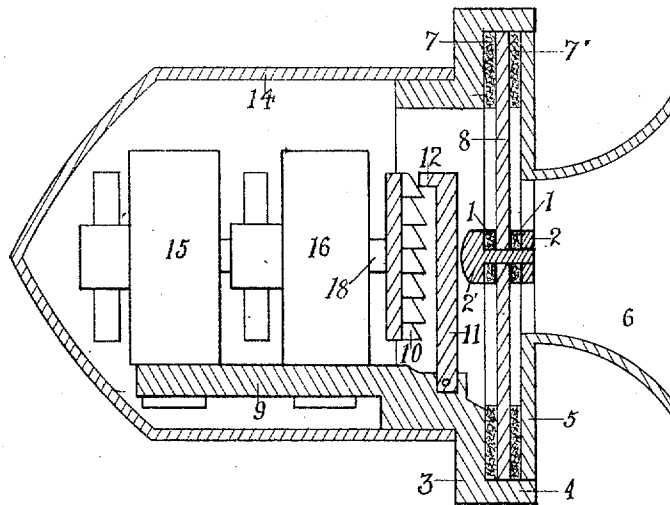


E. AUFIERO.
ELECTROMECHANICAL ALARM.
APPLICATION FILED JUNE 10, 1910.

988,537.

Patented Apr. 4, 1911.



WITNESSES:
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EMANUEL AUFIERO, OF BROOKLYN, NEW YORK, ASSIGNOR TO AUTOMOBILE SUPPLY MFG. CO., OF BROOKLYN, NEW YORK, A CORPORATION OF NEW YORK.

ELECTROMECHANICAL ALARM.

988,537.

Specification of Letters Patent.

Patented Apr. 4, 1911.

Application filed June 10, 1910. Serial No. 566,224.

To all whom it may concern:

Be it known that I, EMANUEL AUFIERO, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Electromechanical Alarms, of which the following is a complete specification.

My invention relates to devices transforming mechanical power or electrical energy into sound by means of diaphragms.

The object of my invention is to produce an alarm emitting, at will, sounds of different tones and penetrating powers.

A further object of my invention is to produce an alarm, the note of which shall not be irritating and metallic.

I attain these and other objects by the apparatus illustrated in the accompanying drawing, in which is shown a sectional view of one embodiment of the entire alarm.

The frame 3 has a sleeve 4 into which sets a circular plate 5 carrying the sound projector 6. Between frame 3 and plate 5 are clamped two sound-proof washers 7 and 7'; between said two washers rests a steel diaphragm 8. The frame 3 has arm 9 holding two small direct current electric motors 15 and 16; the two armatures of said motors are supported by the same shaft 18, that carries the crown gear 10. A lever 11 is with one end freely secured to frame 3, and on the other end carries a cam projection 12 in operative engagement with the crown gear, the diaphragm furnishing the elastic means to hold said lever in continuous engagement with said gear. It will be seen that, when the crown gear is rotated, the lever and the diaphragm will receive a number of outward thrusts: with a crown gear having a given number of cam projections, sounds can be generated the pitch of which is directly proportional to the speed of the crown gear. One of the two motors is wound to run at relatively low speed, the other motor is wound to run at high speed; so that, energizing one or the other motor, a note of low or high pitch can be produced. I have

found that the lever arrangement permits the use of cam projections having relatively large engaging surfaces; so that wear of same will not affect very soon the amplitude of vibration. The displeasing noises produced by the striking cam projections are not communicated to the diaphragm, the note of which is therefore clearer and non-irritating.

For obtaining better acoustic results and for adequately distributing the elastic strain in the diaphragm, I clamp, in any suitable way, to the center of said diaphragm two steel disks 2 and 2'—between said two disks lie two sound-proof washers 1 and 1'.

It is understood, that the vibrations of the diaphragm are partly forced and partly free: the best results are attained when, in the return movement, the diaphragm is permitted its full swing past its path of vibration before starting the next forced vibration. It is also understood, that other variable-speed means can be used to rotate the crown gear; and that the diaphragm, instead of steel, can be made of any other suitable material. The strain distributing member can be attached to the lever itself, doing away with the steel disks clamped to the diaphragm.

Frame 3 carries means for holding the cover 14, which incloses all the working parts of the device, making the instrument dust-proof and water-proof.

Various changes in the arrangement, form and minor details of construction may be resorted to without departing from the spirit of said invention.

What I claim is:

In a signal or alarm device of the class described, a suitable casing and sound projector, a driven crown gear, a lever vibrated by said crown gear and a diaphragm vibrated by said lever.

EMANUEL AUFIERO.

Witnesses:

JOSEPH CITRO,
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