

990,796.

This technical drawing shows a cross-sectional view of a mechanical assembly. A central rectangular component, labeled 15, is connected to a shaft or rod that passes through a series of components. On the left, a curved, ribbed structure (16) is shown. The central assembly includes a series of stacked or nested components labeled 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, and 17. The components are shown in cross-section with hatching. The overall shape is somewhat irregular, with a curved outer boundary on the left and a more defined, stepped boundary on the right.

WITNESSES:
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UNITED STATES PATENT OFFICE.

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DRUM-ACTUATED ALARM.

990,796.

Specification of Letters Patent.

Patented Apr. 25, 1911.

Application filed June 15, 1910. Serial No. 566,997.

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 Drum-Actuated Alarms, of which the following is a complete specification.

My invention relates to devices transforming electrical energy or mechanical power into sound, said devices being used as alarms for automobiles, motor boats, etc.

The object of my invention is to produce an electro-mechanical alarm the sound of which shall not be irritating and metallic.

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

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 sleeve 4 into which sets disk 5 carrying the horn or sound projector 6. Between frame 3 and disk 5 is clamped a drum composed of ring 8 and two circular acoustic plates 9' and 9 secured to said ring: said drum is held between two sound-proof washers 7 and 7'. Better acoustic results are attained when plate 9 has near its periphery a number of holes exposing plate 9'.

A crown gear 10 is fastened to plate 9' by means of member 12 and nut 11. Frame 3 carries arm 13 supporting a small electric rotary motor 15, on the armature of which is secured a rotary member 14 carrying two cam projections 1 and 1 in operative engagement with crown gear 10. On sleeve 17 is secured a casing 16, which is used as resonator and to render the instrument dust-proof and water-proof. It will be seen that, giving a rapid rotary motion to bar 14, acoustic plate 9' will receive a number of outward thrusts, which the surrounding air or mechanical means transmit to the other plate 9. With a crown gear 10 having a given number of teeth, sounds can be generated the pitch of which is directly proportional to the speed of the rotary member 14.

I have found that motor 15 can be of the variable-speed class, having preferably two speeds, one relatively low, the other high speed; so that connecting said motor with two push buttons commanding one or the other speed, sounds of low or high pitch can be at will generated. The natural frequency of one of the plates composing the drum can harmonize with the high speed of the motor; the other plate can harmonize with the low speed. Better acoustic results are attained when ring 8 is made of soft metal or sound-proof material as fiber, hard rubber, etc.; the inner side of said ring is rounded as shown in the drawing. The acoustic plates 9 and 9' are made preferably of chrome steel or vanadium steel.

It is understood that the vibrations of the drum are partly forced and partly free: the best results are attained when, in the return movement, the plates 9 and 9' are permitted full swing past their path of vibration before starting the next forced vibration. It is also understood that other variable speed means can be used to rotate member 14; and that plates 9 and 9', instead of steel, can be made of any other suitable material.

Various changes in the form, arrangement 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 plurality of acoustic plates, sound proof means separating the edges of said plates, a disk having cam projections secured to one of said acoustic plates, a rotary member engaging said cam projections, in combination with an electric rotary motor giving power to said rotary member, and giving therefrom vibrative energy to said acoustic plates.

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Witnesses:

ANGELO GUERRIERO,
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