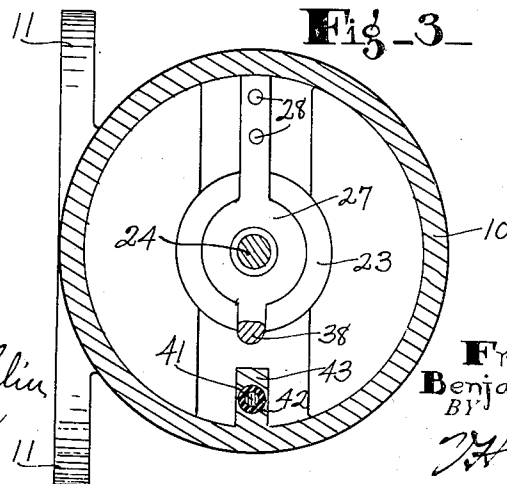
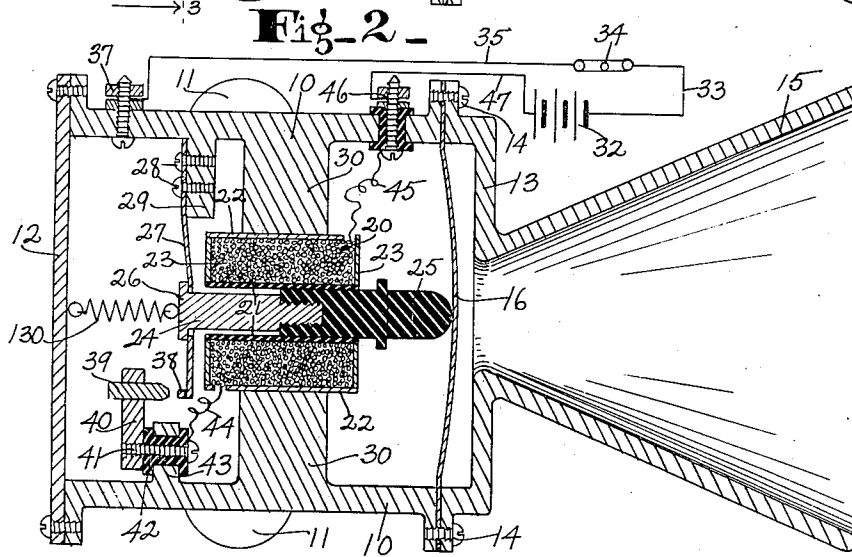
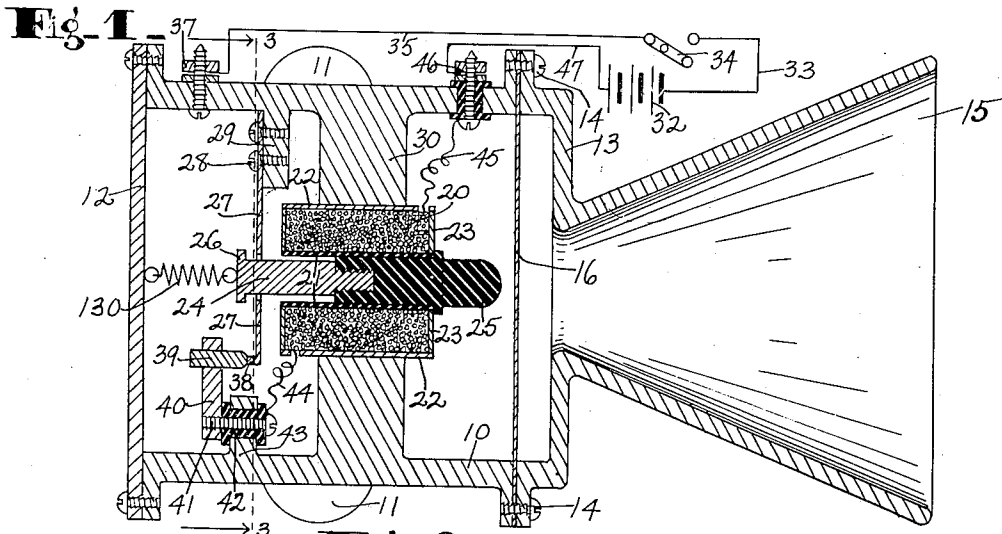


B. P. & F. I. REMY.
SOUND PRODUCING DEVICE.
APPLICATION FILED JULY 28, 1910.

1,016,035.

Patented Jan. 30, 1912.



WITNESSES:

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UNITED STATES PATENT OFFICE.

BENJAMIN P. REMY AND FRANK I. REMY, OF ANDERSON, INDIANA, ASSIGNORS TO
THE REMY ELECTRIC COMPANY, OF ANDERSON, INDIANA, A CORPORATION.

SOUND-PRODUCING DEVICE.

1,016,035.

Specification of Letters Patent.

Patented Jan. 30, 1912.

Application filed July 28, 1910. Serial No. 574,264.

To all whom it may concern:

Be it known that we, BENJAMIN P. REMY and FRANK I. REMY, of Anderson, county of Madison, and State of Indiana, have invented a certain useful Sound-Producing Device; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings.

The object of this invention is to provide an improved form of electromagnetically operated noise producing device to be used particularly as a signal for automobiles and the like, or in other situations where it is desired to produce a loud noise by the use of an electric current.

The chief feature of the invention is the arrangement of the armature and striker so that the striker is normally separated from a noise producing diaphragm and in position when actuated to deliver blows to the diaphragm.

The nature of the invention will be understood from the accompanying drawings and the following description and claim.

In the drawings Figure 1 is a central vertical section through the device in idle position and with a diagram of the circuit associated therewith. Fig. 2 is the same showing the device in operation. Fig. 3 is a section on the line 3-3 of Fig. 1.

The cylindrical housing 10 is provided with ears 11 for securing the same to a suitable portion of an automobile or other structure. The housing is closed at one end by a removable disk or plate 12, and on its other end a plate 13 is secured by the screws 14, and said plate carries the horn-like member 15 which leads at its inner end from a centrally located opening in the plate 13, through which the sound waves issue, and the member flares outwardly therefrom. Between the housing 10 and plate 13 a vibratory diaphragm 16 is secured along its edge so that the central portion is free to yield audible vibrations when centrally struck by the means hereafter explained.

Within the housing 10 there is an electromagnet consisting of the winding 20 surrounding a tube 21 and surrounded by an outer tube 22 and having end disks 23. The inner tube 21 is preferably of non-magnetic material, while the other parts 22 and 23 are preferably of iron. This is a plunger

electromagnet, and, therefore, has a plunger armature 24, which extends about half-way through the magnet where it is reduced, and the reduced portion is externally threaded to receive the striker 25, which is made of non-magnetic material. The outer end of the armature has a projection 26, and the armature extends through an opening in the contact spring plate 27, which is secured by the screws 28 to a projection 29 from the housing. The housing has a central inwardly extending portion 30 which supports the electromagnet. The opening in the spring plate 27 is of less diameter than the projection 26 on the armature. The armature is withdrawn by a spring 130 which is connected with the flanged end of the armature and to the plate 12.

The electric circuits are as follows: There is a battery 32 or other source of electricity from which a wire 33 runs to a switch 34, and from that switch the wire 35 extends to the binding post 37 in the housing. The current can pass through the housing to the spring 27 which is made of conducting material, and on its free end it has a contact 38 adapted to engage the contact pin 39 held by an arm 40, which is secured on the metal screw 41 running through the insulation 42 in the arm 43 extending up from the lower side of the housing. The wire 44 runs from the screw 41 to the magnet, and the wire 45 runs from the magnet to the binding post 46, and the wire 47 runs from that binding post to the battery. The binding post 46 is insulated from the housing. Normally the spring 27 holds its contact piece 38 in engagement with the contact 39 and thus closes the circuit. When the switch 34 is closed, as in Fig. 2, the current passing through the magnet energizes it and moves the armature to the right, so that the striker 25 centrally strikes the diaphragm. This movement of the armature causes the projection 26 thereon to engage the spring 27 and move it to the position shown in Fig. 2 and break the circuit. As soon as this occurs the spring 130 returns the armature, which permits the plate 27 to close the circuit. Hence the device, as soon as the switch 34 is closed, will automatically make and break the circuit and reciprocate the striker and vibrate the diaphragm. The reciprocation of the striker is so rapid that

it delivers to the diaphragm a rapid succession of blows, causing it to emit a loud sound.

We claim as our invention:

- 5 A sound producing device including a vibratory diaphragm, an electro-magnet, a plunger armature carrying a striker, and having a lateral projection on its outer end, a spring for holding said armature and
10 striker normally out of engagement with the diaphragm, an electric circuit through the magnet, and a spring contact plate which normally closes the circuit and is

provided with a hole through which the armature extends so that when actuated the 15 projection of the armature will engage said spring contact plate to break the circuit.

In witness whereof, we have hereunto affixed our signatures in the presence of the witnesses herein named.

BENJAMIN P. REMY.
FRANK I. REMY.

Witnesses:

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T. P. McDERMOTT, Jr.