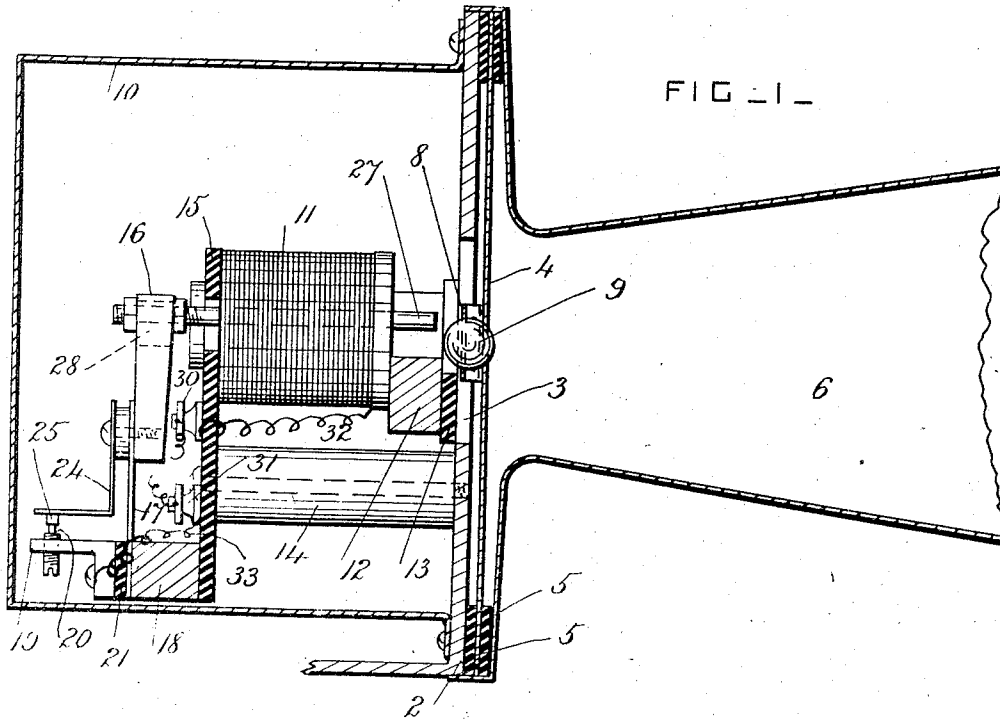
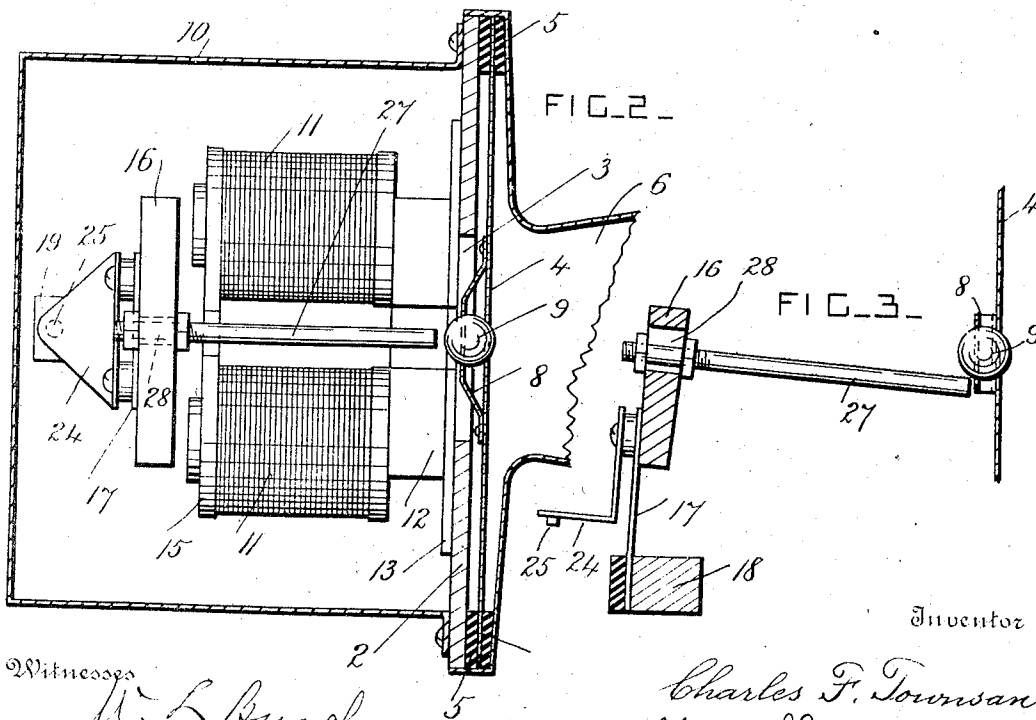


C. F. TOWNSAN.
ELECTRIC HORN.
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1,078,013.

Patented Nov. 11, 1913.



Witnesses

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CHARLES F. TOWNSAN, OF MITCHELL, SOUTH DAKOTA.

ELECTRIC HORN.

1,078,013.

Specification of Letters Patent.

Patented Nov. 11, 1913.

Application filed February 25, 1913. Serial No. 750,604.

To all whom it may concern:

Be it known that I, CHARLES F. TOWNSAN, a citizen of the United States, residing at Mitchell, in the county of Davison and State of South Dakota, have invented certain new and useful Improvements in Electric Horns; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to electric horns for signaling purposes, and more particularly for use on automobiles; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the drawings, Figure 1 is a sectional side view of a horn constructed according to this invention. Fig. 2 is a similar side view, but shows the horn turned one-quarter around. Fig. 3 is a detail side view of the tapping mechanism.

A supporting plate 2 is provided having a central hole 3, and this plate is adapted to be secured to the frame of an automobile. A sounding diaphragm 4 is secured to the front side of the plate 2 between two washers 5 of insulating material, and 6 is the horn or resonator secured over the front side of the diaphragm. A portion only of this horn 6 is shown, and it is of any approved size.

The diaphragm has a bracket 8 secured to the central portion of its rear side opposite the hole 3, and 9 is a ball arranged between the diaphragm and the bracket, each of which is provided with a hole or perforation through which the opposite side portions of the ball project, and in which the ball may be revolved.

A protecting case 10 is secured to the rear side of the plate 2, and the tapping mechanism is arranged in this case. Two electro-magnets 11 are coupled together at their front ends by a metallic bar 12, and 13 is a plate of insulating material interposed between the bar 12 and the plate 2.

A supporting post 14 is secured to the plate 2, and a plate of insulating material 15 is secured to the front end of the post 14, and to the front ends of the electro-magnets.

The electro-magnets are provided with an armature 16, and 17 is a leaf spring which supports the armature from a block 18 secured to the plate 15, and which permits the

armature to vibrate. A stationary contact-piece 19 provided with an adjustable contact-screw 20 is secured over the stationary end portion of the spring, and 21 is a block of insulating material interposed between the contact-piece and the spring.

An angle-shaped contact-spring 24 is provided, and is secured to the armature and its spring parallel to and out of line with the electro-magnets, and with its contact 25 arranged in line with the point of the contact-screw and opposite the part of the armature spring which bends back and forth. This position of the contact 25 is important in a device of this sort, as it enables the armature to vibrate without its vibrations being in any way damped or interfered with.

A taper-bar 27 is provided, and one end of it is secured in a slot 28 in the armature, so that the taper-bar can be adjusted laterally to different positions. The other end portion of the taper-bar projects past the electro-magnets toward the ball on the diaphragm. As shown in Figs. 1 and 2, the taper-bar may be arranged to strike the ball in line with its center, or, as shown in Fig. 3, the taper-bar may be arranged so that one edge of it strikes the periphery of the ball obliquely, and may be caused to operate the diaphragm at the back stroke as well as at the forward stroke. The plate 15 has binding posts 30 and 31 for the attachment of the battery wires. The post 30 is connected to the electro-magnets by a wire 32, and the post 31 is connected to the contact-piece by a wire 33. The various parts of this device may however be wired in circuit in any other approved manner.

When current is sent through the electro-magnets the armature is vibrated, and the ball of the diaphragm is struck or tipped by the taper-bar. The ball has an important influence upon the sound produced by the diaphragm. The quality of the sound is greatly improved, and a pleasing note of great clearness and penetrating quality is sounded. This device requires but little electricity to run it.

What I claim is:

1. In an electric horn, the combination, with a diaphragm provided with a hole, and a bracket secured to the diaphragm and also provided with a hole; of a ball arranged between the diaphragm and bracket with its opposite side portions projecting through

their holes, a tapper-bar, and electric operating mechanism which causes the tapper bar to strike endwise on the ball and thereby vibrate the diaphragm.

- 5 2. In an electric horn, the combination, with a diaphragm provided with a hole, and a bracket secured to the diaphragm and also provided with a hole; of a ball arranged between the diaphragm and bracket with its
10 opposite side portions projecting through their holes, an electro-magnet provided with an armature having a slot, and a tapper-bar secured in the slot and adjustable to different positions therein with respect to the ball
15 and adapted to strike endwise upon the ball.

3. In an electric horn, the combination, with a diaphragm, of a stationary support for the diaphragm, an electro-magnet se-

cured to the said support, an insulated leaf spring secured to the said support, an arma- 20
ture carried by the leaf spring and free to vibrate, a tapper-bar carried by the armature and operating to vibrate the diaphragm, a stationary insulated contact-piece secured to the said support, and an angle- 25
shaped contact-spring having one end portion secured to the armature and having its other end portion arranged opposite the stationary contact-piece.

In testimony whereof I have affixed my 30
signature in the presence of two witnesses.

CHARLES F. TOWNSAN.

Witnesses:

O. B. WALLACE,
J. HEAGES,