

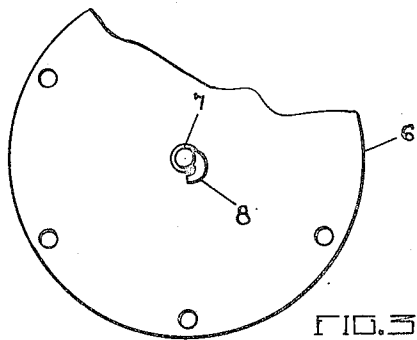
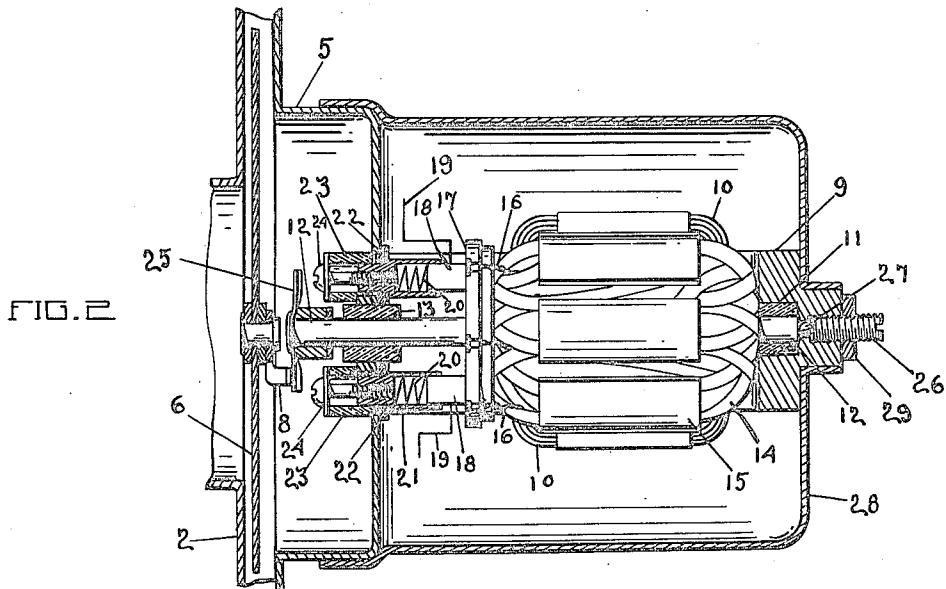
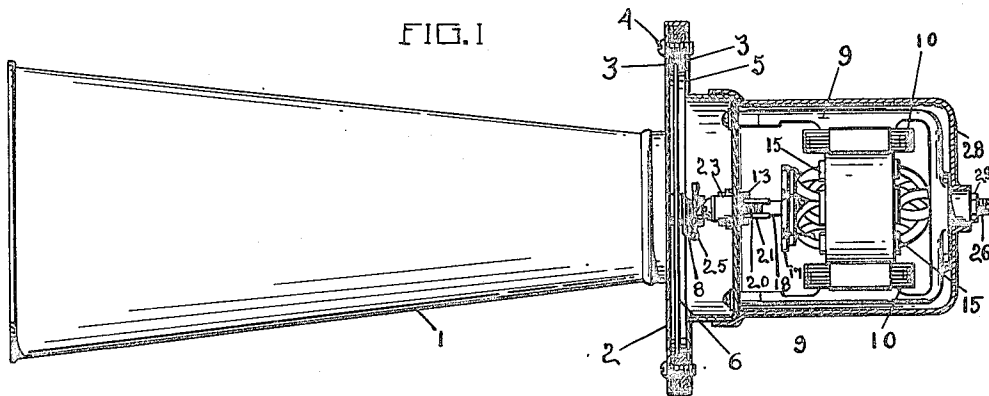
H. R. SAXON AND C. J. SCHWARZE.

HORN.

APPLICATION FILED APR. 17, 1916.

1,386,804.

Patented Aug. 9, 1921.



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UNITED STATES PATENT OFFICE.

HERMAN R. SAXON, OF TOLEDO, OHIO, AND CARL J. SCHWARZE, OF ADRIAN, MICHIGAN, ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, OF ONE-HALF TO THE SCHWARZE ELECTRIC COMPANY, OF ADRIAN, MICHIGAN, A CORPORATION OF MICHIGAN, AND ONE-HALF TO WILLYS CORPORATION OF TOLEDO, OHIO, A CORPORATION OF DELAWARE.

HORN.

1,386,804.

Specification of Letters Patent.

Patented Aug. 9, 1921.

Application filed April 17, 1918. Serial No. 91,755.

To all whom it may concern:

Be it known that we, HERMAN R. SAXON and CARL J. SCHWARZE, citizens of the United States of America, and residing, respectively, at Toledo, Lucas county, Ohio, and at Adrian, Lenawee county, Michigan, have invented new and useful Horns, of which the following is a specification.

This invention relates to a novel combination of operating mechanism adapted for actuating the vibratory diaphragm of a horn, the object of the invention being to provide an improved combination of this character including a novel arrangement of means for maintaining the parts in operative position.

Further objects, and objects relating to economies of manufacture and details of construction, will definitely appear from the detailed description to follow:

We accomplish the objects of our invention by the devices and means described in the following specification.

Our invention is clearly defined and pointed out in the appended claims. A structure constituting the preferred embodiment of our invention is illustrated in the accompanying drawing forming a part of this specification, in which:

Figure 1 is a side elevation with parts broken away showing an embodiment of the invention in a motor horn;

Fig. 2 is a section of the motor housing at right angles to the showing in Fig. 1; and

Fig. 3 is a fragmentary side elevation of the diaphragm.

The amplifier 1 is mounted on the carrier frame 2 carrying the packing disks 3 and provided with bolts 4 coacting with the opposing frame 5 to mount therein the vibratory diaphragm 6 having concentrically mounted therein the pin 7 engaging the radially terminating eccentrically extending arm 8. Mounted on the frame member 5 is the field frame 9 carrying the field coils 10 and the bearing 11 for the armature shaft 12, the opposite portion of the armature shaft 12 being mounted in the bearing 13 carried by the frame member 5.

This armature shaft carries the armature 15 having mounted thereon the coils 14. The leads 16 from the coils 14 extend to the

disk commutator 17 which is engaged by the axially yieldable brushes 18 provided with the conductor leads 19 extending therefrom. These brushes 18 are yieldably thrust against the commutator in a direction parallel to the shaft 12 by the springs 20 housed by the sockets 21 which are supported by and insulated from the frame 5 by the washers 22, 23, the latter being anchored in position by the screws 24.

The shaft 12 on its end adjacent the diaphragm 6 has a radially ribbed disk or wheel 25 forming with the arm 8, cooperating actuating means for vibrating the yieldable diaphragm 6. The opposite end of the shaft 12 is engaged by the screw 26 coacting through the thrust ball 27 to vary the position of the disk 25 as to the arm 8. This exterior adjustment entirely outside of the motor housing permits a ready speed regulation for the shunt wound electric motor, for the axial adjustment of the armature shaft through the engagement of disk 25 with arm 8 varies the load resistance and with a less load resistance there is a corresponding higher motor speed and higher tone produced by the horn. With the desired adjustment attained the lock nut 29 may be set to hold the parts in desired position. This shifting of the armature, its shaft, and commutator as to the fixed fields 10 is the only adjustment to be cared for in accomplishing this speed regulation for the brushes 18 readily yield axially of the shaft 12 and effectively coact with the face of the commutator 17 at all adjustments of the motor.

What is claimed and it is desired to secure by Letters Patent is:

1. In a device of the class described, a casing, a diaphragm carried thereby, an electric motor in said casing, a shaft for said motor having means at one end for engaging and vibrating said diaphragm, a thrust bearing for the opposite end of said shaft and means for making electrical connection with the rotary element of said motor and for pressing the same away from said diaphragm and against said thrust bearing.

2. In a device of the class described, a casing, a diaphragm carried thereby, an electric motor in said casing having a rotary element and shaft therefor, a ribbed member

- on one end of said shaft for engaging said diaphragm, a thrust bearing for the opposite end of said shaft adjustable to vary the engagement of said ribbed member and said diaphragm, a pair of brushes axially mounted in said casing to make electrical connection with said rotary element and to hold said shaft at all times against said thrust bearing.
- 10 3. In a device of the class described, a casing, a diaphragm secured at one end thereof, an electric motor having an axially shiftable shaft and a disk commutator, a disk having radial ribs mounted on one end of said shaft to engage and vibrate said diaphragm, a thrust bearing for the opposite end of said shaft, means for adjusting said thrust bearing to vary the engagement of said disk with said diaphragm and a pair of spring pressed brushes carried by said casing and bearing against said commutator yieldingly holding said armature shaft against said thrust bearing whereby said shaft and disk are maintained in adjusted position relative to said diaphragm.
- 25 In witness whereof we affix our signatures
HERMAN R. SAXON.
CARL J. SCHWARZE.