

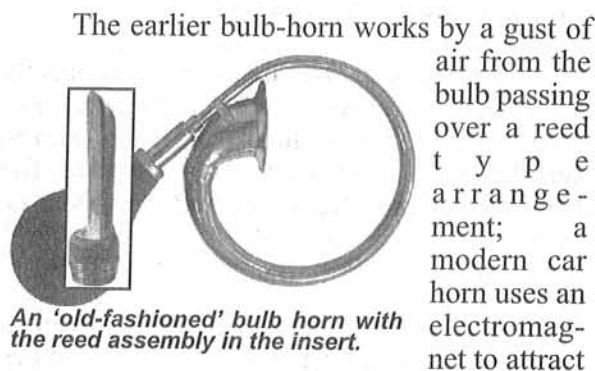
A Project for an Afternoon

by Ken McNeil

The Ooh Gah Horn

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In the 1920s the 'Ooh Gah' horn was pretty much standard equipment on just about every car. They give out a distinctive sound that just says, 'Old Car Coming.' When they don't work properly, or don't work at all they are a frustration. When they do work, the noise is an attention-getting blast. Let's take a look at the Ooh Gah horn.



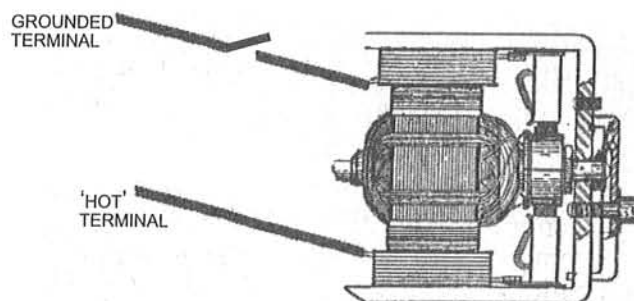
An 'old-fashioned' bulb horn with the reed assembly in the insert.

and release a flexible diaphragm setting up an oscillation to make the sound. But the ooh gah is totally different. It is a motor, and that beautiful sound (or awful, depending on which end of the horn you're on) is caused by a grinding (an intentional grinding) in the horn assembly. There are three major sections to the horn. The funnel-shaped bell on the end is merely an amplifier. It makes the sound louder and directs it forward. The center section contains a diaphragm and the grinding mechanism. and the rear of the horn - the can-shaped assembly - is the motor.

The 'hot' connection is normally always hot. It gets its power directly from a fused hot wire. The On-Off switch - the horn button - is ground. When you step on or press the horn button you are completing the ground connection to the horn. If the horn is not working, first thing to

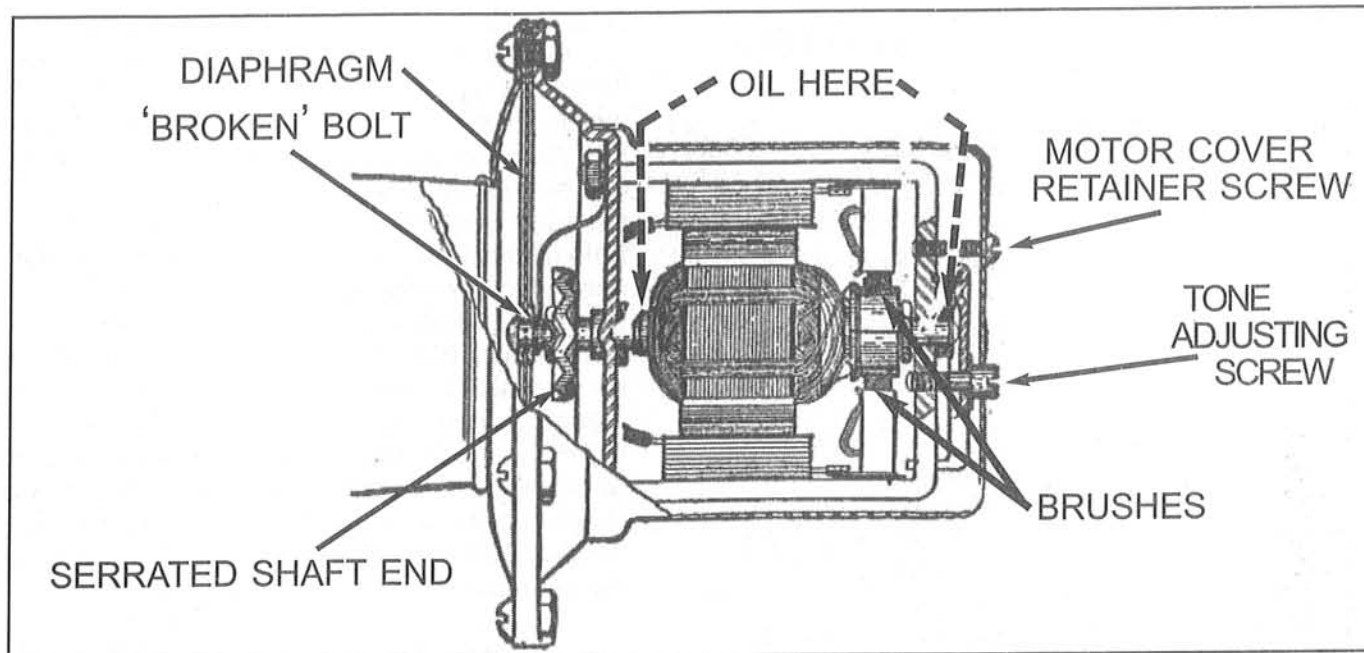
do is check for current. A multimeter is the best tool for this job. Set it on volts (6 volts or 12 volts depending on the electrical system of the car) and with the battery connected, and the ignition switch 'On', test for current at the hot terminal. Connect one wire of the meter to a good ground and with the other touch the hot terminal. It should show full voltage. If it doesn't, that's where to start you search for a problem. If it shows full current, test the ground terminal. Set the meter to 'Continuity' or resistance (the ohm sign), connect one end to the grounded terminal at the horn and the other to a good ground. Pressing the horn button should cause the needle to show zero resistance. If the power is good, we can move onto the horn itself. If not, correct the electrical problem (see *SK*, November 2008 on finding shorts) and then comes the horn itself.

If the sound from the horn is dull, check inside the bell for obstructions. Mud dubber nests, or other junk in the bell will cause the sound to be low. Clean it out. Looking at the back of the cover will normally show two screw heads. One should be marked 'ADJUST' (It's often a fillister head screw). If not marked, carefully examine the way the screws are set into the cover. One should be fitted through a hole in the cover. It is the adjustment screw. The other one, generally a round-headed screw, will be the one that holds the cover on. Remove it and the cover will lift off. Remove the motor cover. Examine the motor. Make sure that there are no obstructions. Look at the brushes. They should be clearly visible on both sides of the commutator. Gently turn the armature by hand; it should rotate freely with perhaps a little resistance felt at the diaphragm end.



The 'hot' terminal should be connected to a fused always-hot wire; the grounded half of the circuit contains a switch (the horn button).

If everything looks good, hook the horn up to a battery and be sure that the motor is working. If it doesn't rotate by itself, immediately discon-



nect the power and loosen the adjustment screw. It may merely be too tight restricting the ability of the motor to operate. At this point don't worry about the ooh gah sound; that will come later. Let's get the motor to run. If loosening the adjustment screw frees the motor, we can move on. If not, get the motor professionally rebuilt. Where? Ready for this one? How about an electric motor shop or a generator/starter motor shop? That's what they do. It's just a motor.

Before you bring the motor into the shop, remove the six or eight nuts that hold the motor to the diaphragm assembly. You will find that the end of the motor has a 'serrated' piece on the end of the shaft. Now look at the diaphragm. You will notice what looks like a broken bolt sticking out of the center. When the motor operates, the serrated piece on the motor shaft rubs against this 'bolt' making the grinding noise. That's the secret! Nothing mysterious. Just an engineered grinding that's amplified through the bell.

If the horn had been operating properly, it still needs service. Not as much, but at least twice a year, pull off the motor cover, blow any dust and debris out and oil the mechanism. TWO DROPS of oil is all that it needs. One drop on the felt at the rear and one drop where the shaft passes through the mounting plate at the front. NEVER oil the motor itself. Do that twice a year, keep the connections tight and corrosion free and you are going to have an effective noise maker.

Now, if you've pulled everything apart to make repairs, and have done so, it's time for re-assembly. Take a look at the gaskets on both sides of the diaphragm. If they are rotted, broken or otherwise in need of replacement, make two gaskets from brown Kraft paper or from a supermarket shopping bag. Since there is no liquid involved, the gaskets don't have to be anything special.

Bolt the bell, diaphragm housing and motor assembly together, oil the motor as instructed above and replace the motor cover. *(A tip for re-assembly: before putting the motor cover back in place, put a wooden matchstick - with the head broken off - into the threaded hole for the hold-down screw. When you put the cover on, the match will protrude through the hole and you can easily align the hole in the cover with the threaded hole in the motor. Pull out the matchstick, put the screw in place and tighten it, and you are set.)*

Connect the horn to a battery; the motor should spin freely. If the sound of the horn is satisfactory, mount the horn back in the car. But if you have loosened the adjusting screw, or if the sound is not right, turn the adjusting screw one click at a time until it sounds good. Then remount the horn.

There is nothing mystifying about the ooh gah horn. It's merely a motor. But be sure that you oil that motor at least twice a year in the future.

S.K.