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2,673,938

ELECTROMAGNETIC VIBRATOR FOR AERATORS

Filed July 25, 1951

FIG. 1

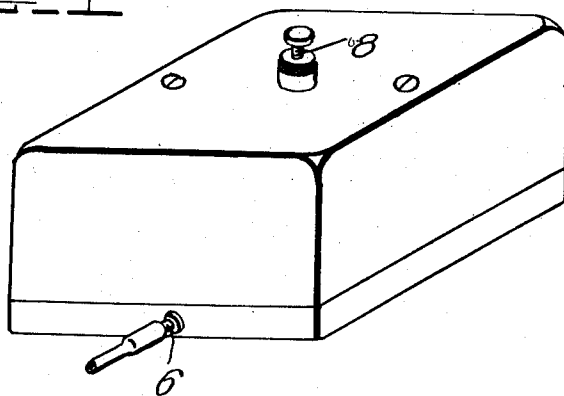


FIG. 2

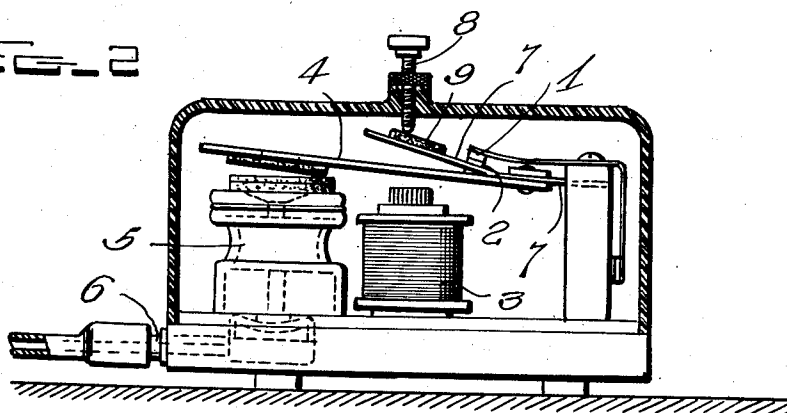
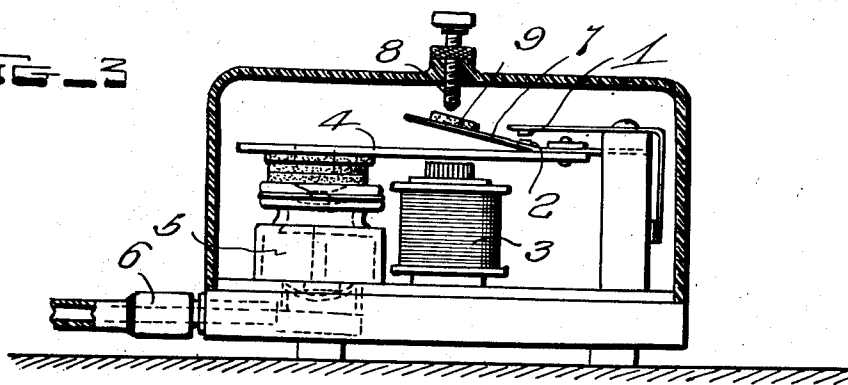


FIG. 3



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ELECTROMAGNETIC VIBRATOR FOR
AERATORS

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1 Claim. (Cl. 310—18)

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The invention relates to application of contact points in an aerator in which the magnetic coil is wired for six (6) volts, direct current; and the object of the invention is to provide aeration, wherever six (6) volts, direct current is available, said aeration to be used by the introduction of air into a container of water to keep alive fish, live bait, or other marine life therein.

One form of the invention is illustrated in the accompanying drawing, in which Figure 1 is an isometric view of an embodiment of the invention;

Figure 2 is a side elevational view, partly broken away, of the device illustrated in Figure 1 illustrating an armature forming a part of the invention in raised position; and

Figure 3 is a view similar to Figure 2 but showing the armature in lowered position.

When six (6) volts, direct current, from an automobile or other source of power is applied across contact points 1 and 2, energizing magnetic coil 3, armature plate 4 moves toward magnetic coil 3, compressing air bellows 5, forcing air in the bellows through a suitable outlet valve (not shown) and from air outlet 6. The downward movement of the armature plate 4 causes the movable contact point 2 which is mounted on armature plate 4, to separate from contact point 1, breaking the circuit. The armature spring loading plate 7, forces the armature plate 4 to move away from magnetic coil 3, allowing air bellows 5 to expand, refilling itself with air through a suitable inlet valve (not shown) for the next cycle, and this movement of the armature plate 4 causes movable contact point 2 to return to a closed position against stationary contact point 1; thus completing one (1) complete cycle of operation of the aerator.

The frequency of operation is variable through adjuster screw 8 (drawings I and III); by increasing pressure on spring loading plate 7, the rate of cycle is increased resulting in decreased air volume at increased pressure. By decreasing pressure on spring loading plate 7 by adjuster screw 8, the rate of cycle is decreased resulting in increase volume of air at decreased pressure. It will be apparent that the inner end

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of the screw bears against a buffer plate 9 carried on the upper side of the spring-loaded plate 7.

I am aware that prior to my invention that aerators have been made that operate on 110 volts, alternating current, using the vibration system or principle. I therefore do not claim such a combination broadly, but

I claim:

A device of the character described comprising an air pump, an electric motor for operating said pump, and manually operable means for regulating the speed of said motor whereby to regulate the flow of air from said pump, said motor and means for regulating the same including a base, a solenoid vertically mounted on said base, a horizontally extending spring plate carried by said base, an angularly upwardly extending extension formed integrally with the outer end of said spring plate, a generally horizontally extending armature for said solenoid affixed to the underside of said spring plate adjacent its juncture with said extension, a cover for said motor, a vertically extending shaft threaded in and extending through said cover and bearing against the upper side of said extension, a handle affixed to the upper end of said shaft, said armature having its free end operatively connected to said pump, and a buffer plate affixed to the upper side of said extension plate to provide a bearing for the lower end of said shaft.

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