Feb. 11, 1930. L. H. MILES 1,746,437

SIREN

Filed June 1, 1925

Fig. 2

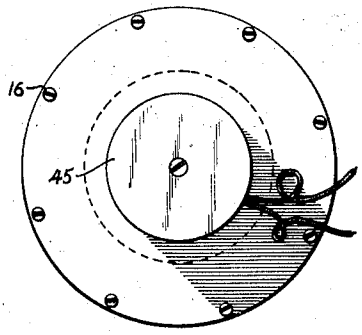


Fig. 1

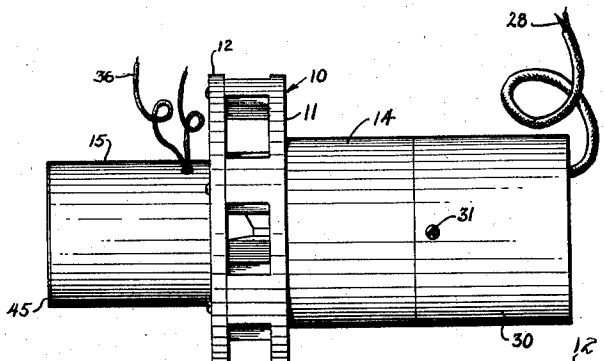


Fig. 8

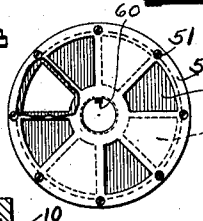


Fig. 7

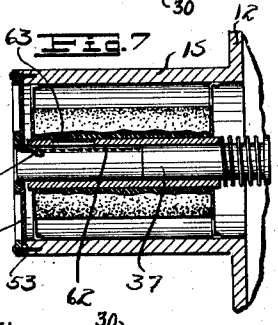


Fig. 3

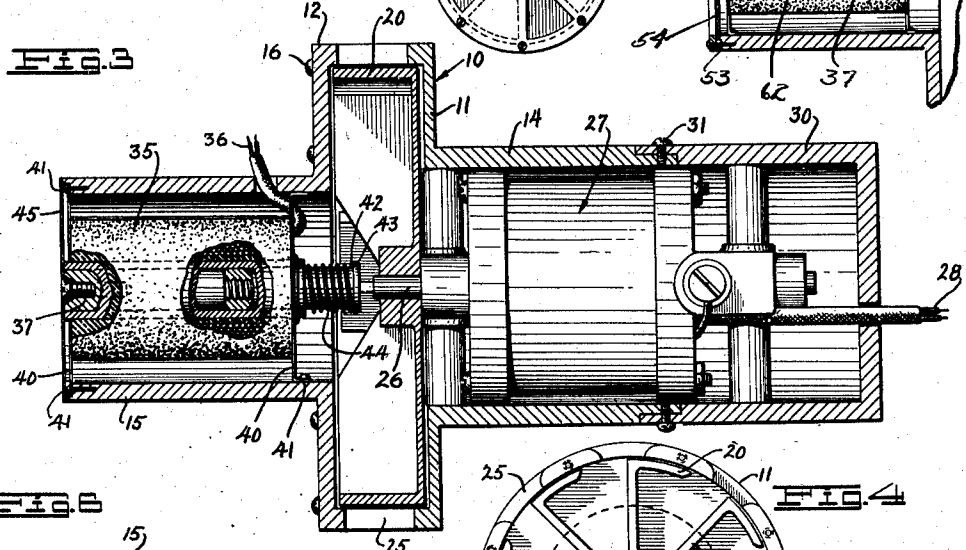


Fig. 6

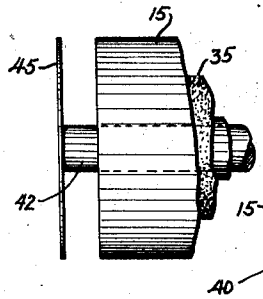


Fig. 5

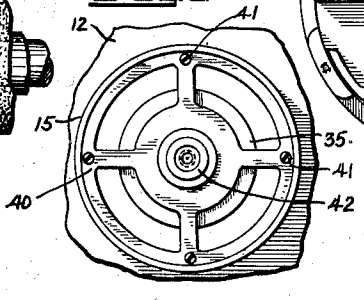
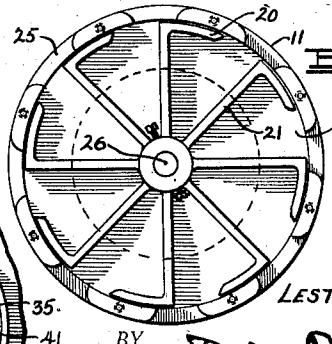


Fig. 4



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UNITED STATES PATENT OFFICE

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SIREN

Application filed June 1, 1925. Serial No. 33,987.

This invention relates to a siren.

The general object of the invention is to provide a siren which can be intermittently sounded for signaling purposes.

One of the specific objects of the invention is to provide a siren having a casing with motive power for the siren arranged within the siren and also having means within the case for causing intermittent opening and closing of the siren horn.

Other objects of the invention will be apparent from the following description taken in connection with the accompanying drawings wherein Fig. 1 is a side elevation of my improved siren; Fig. 2 is a front view thereof; Fig. 3 is a central sectional view through the siren showing the operating parts; Fig. 4 is a front view of the siren with the cover removed; Fig. 5 is a detailed elevation of the front of the siren with the closure removed; Fig. 6 is a fragmentary elevation showing the horn with the closure therefor in extended position; Fig. 7 is a central sectional view of a modified form of closure and Fig. 8 is an end view partly broken away showing the modified closure.

Referring to the drawing by reference characters, I have shown a siren as a whole at 10. This siren comprises a casing including a body part 11 and a cover 12. The case is preferably in the form of a hollow cylinder having a cylindrical portion 14 of reduced diameter projecting therefrom. The cover 12 is provided with a port member 15 thereon. The cover may be secured to the casing by fastening members 16 as shown.

Mounted within the body 11 is a rotor 20. This rotor includes the partition forming members 21 having passageways 22 leading to the separate chambers formed by the partitions. The outer wall of the body 11 is provided with slots 25 therein and the construction is such that when the rotor 20 is rotated the air will be forced through the siren to produce a loud noise.

The rotor is shown as provided with a shaft 26. This shaft is indicated as a part of the armature shaft of a motor 27, from which leads 28 extend to a suitable switch and source of power (not shown). The construction is such that when the circuit is closed through the leads 28 the motor 27 will drive the rotor 20 to actuate the siren.

The end of the cylindrical portion 14 is shown as provided with a closure cap 30 which may be secured in place by removable fastening members 31. The motor may be held within the cylindrical portion 14 in any desired manner.

Within the member 15 of the cover 12, I mount an electromagnet or solenoid 35. The coil of this solenoid has leads 36 which may extend to a switch and to a suitable source of power (not shown). The solenoid 35 is shown as provided with a movable core 37 which slides in the hollow portion of the solenoid. This solenoid is supported on apertured discs 40 which are secured by screws 41 fastened to the wall of the port member 15 or in any other desired manner. The discs 40 are apertured to allow the air to pass therethrough.

The core 37 is extended as at 42 and upon the extended portion a shoulder 43 is arranged. This shoulder 43 is engaged by a spring 44 which engages a washer on the disc 40 so that the core 37 is normally moved to the right in Fig. 3. Upon the end of the core 37, I mount an imperforate closure 45. This closure 45 may be a thin disc of metal and the relation of parts is such that the spring 44 will pull this closure 45 into tight engagement with the end of the member 14 so that normally the member is closed and no sound will pass thereform. When the motor 27 is operated and the circuit is closed through the leads 36 the solenoid 35 will act against the spring 44 and will compress this spring moving the core 37 to the left in Fig. 3 and allowing the air to pass through the port member.

The core 37 it will be noted by referring to Fig. 3 is composed of two parts screw threaded together. The part at the right is made of iron or magnetic material so that the coils of the solenoid will affect it, while the core at the left is preferably made of aluminum or other nonmagnetic material so that the efficiency of the solenoid will not be impaired.

In Fig. 7 I show a modified form of closure wherein the core 37 is fitted within a horn 15 in the manner previously described. The outer end of the horn is shown as provided with a closure 50 which is fastened in place by suitable fastening members 51. This closure 50 is provided with apertures 52 therein and the end of the horn is provided with a rabbeted portion 53 in which a rotatable closure disc 54 is fitted. This closure disc 54 is provided with apertures 55 corresponding in shape to the apertures 50 so that when the disc 54 is rotated the apertures will align. To bring about rotation of the closure 54 I show this closure as provided with a tongue 60 thereon. This tongue fits in a spiral groove 61 shown as arranged in the outer periphery of the outer end of the core 37. This core 37 has a key way 62 thereon which engages a key 63 to prevent rotation of a core when it reciprocates. The action of this modification is in all respects similar to the action of the closure previously described, except that instead of moving the closure bodily outward, in the modified form, I bring about rotation of the closure to cause alignment of the apertures.

From the foregoing description it will be apparent that I have provided an improved siren which can be operated for signaling purposes and which can be economically manufactured and which is highly efficient in use.

Having thus described my invention, I claim:

1. In a siren, a body part including a cylindrical portion, a rotor mounted within said cylindrical portion, said body portion being extended to form a hollow chamber, a motor mounted in said chamber, means whereby said motor will drive said rotor, a cover for the chamber, means to secure said cover to said chamber, a pair of leads from said motor, a cover for the body, a port member on said cover, a closure for said member and means to move said closure from closed to open position, said last mentioned means including a solenoid arranged within said member, means to space said solenoid from the walls of said member, said solenoid having a core therein, means to connect said core with said closure, resilient means for normally holding said closure in closed position, and a pair of leads from said solenoid.

2. In a siren, a body part, a rotor mounted in said body part, means to drive said rotor, a port member on said body, a closure for controlling the passageway through said member, said closure having a stem thereon said stem being mounted for sliding movement, and means associated with said stem to move said closure from open to closed position, and vice versa, said means including a solenoid located within the port member and spaced from the walls thereof to allow air to pass through the port member.

In testimony whereof, I hereunto affix my signature.

LESTER H. MILES.