

W. W. DEAN.
WARNING SIGNAL DEVICE.
APPLICATION FILED MAY 1, 1911.

998,162.

Patented July 18, 1911.

2 SHEETS-SHEET 1.

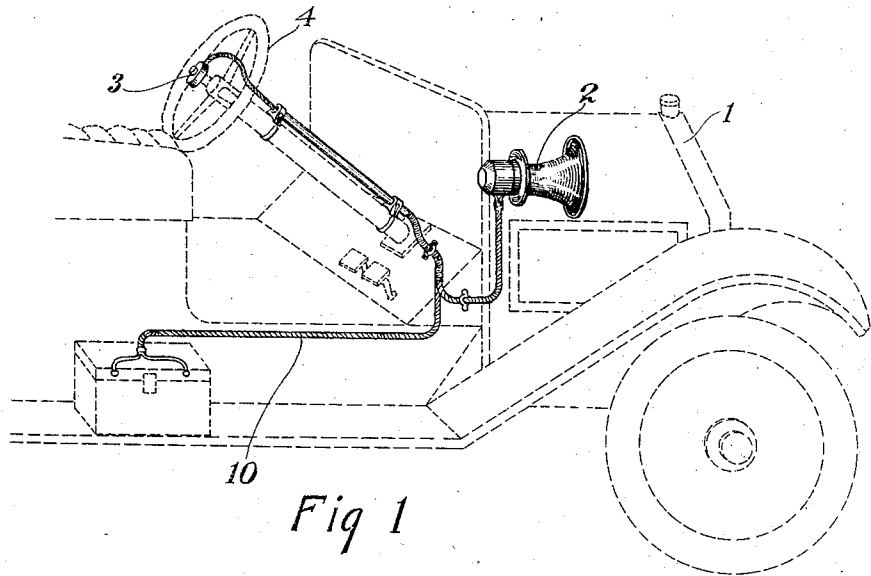


Fig 1

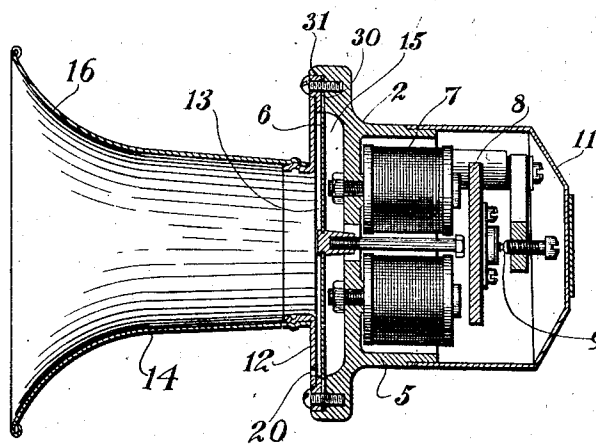


Fig 2

Witnesses
E. A. Spurr
Mary Walker

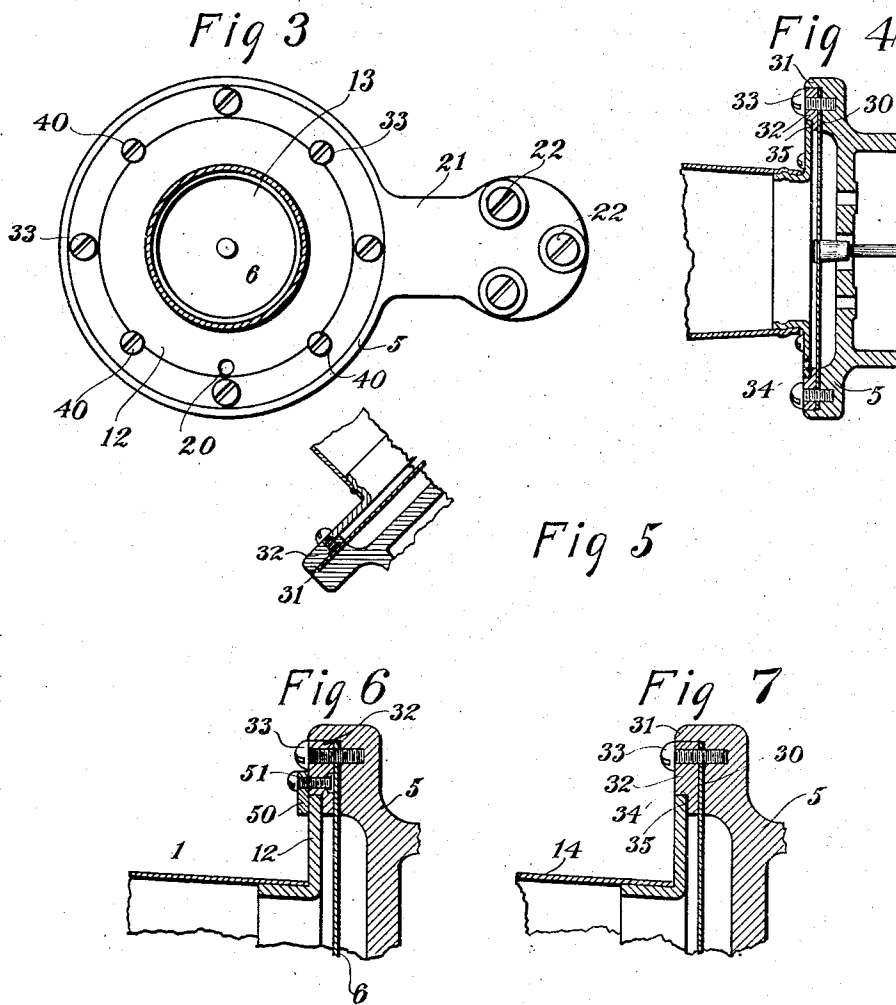
Inventor
William W. Dean
By *F. O. Richey*
His Attorney

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Witnesses
C. U. Spurr
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UNITED STATES PATENT OFFICE.

WILLIAM W. DEAN, OF NORTH RIDGEVILLE, OHIO, ASSIGNOR TO THE DEAN ELECTRIC COMPANY, OF ELYRIA, OHIO, A CORPORATION OF OHIO.

WARNING-SIGNAL DEVICE.

998,162.

Specification of Letters Patent. Patented July 18, 1911.

Application filed May 1, 1911. Serial No. 624,329.

To all whom it may concern:

Be it known that I, WILLIAM W. DEAN, a citizen of the United States, residing at North Ridgeville, in the county of Lorain and State of Ohio, have invented certain new and useful Improvements in Warning-Signal Devices; 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.

My invention relates to warning signal devices and more particularly to such devices adapted to be used upon conveyances, such as automobiles, motor trucks, motor boats, etc., to give warning of the approach of the vehicle. I also contemplate other uses for my device which will be apparent to those skilled in the art. When used these devices are generally carried in exposed positions where moisture, dirt, dust and other foreign matter are apt to be caught and carried into the interior of the device where such foreign matter may injure the mechanism of the device, reducing the efficiency of the same. It is old to provide means for the escape of this foreign matter from the interior of the device, such means generally consisting of an opening in one of the walls of the chamber in which the device or a part thereof is mounted. It frequently happens that it is desired to mount the device in some certain position and when this is the case, it is highly desirable that the means provided for the escape of foreign matter should be adjustable so as to place it in a position most desirable for the escape of such foreign matter.

The main object of my invention is the provision of means for permitting the escape of this foreign matter and making the same adjustable, so that the opening or other means employed may be positioned as is most desirable. I prefer to perforate one of the walls of the chamber so as to provide a communication directly between the chamber and the outside and then make this wall adjustable. In the form of my invention shown, I have thus modified the front wall of the chamber and have loosely secured it to the device by such means as can be loosened, the front adjusted to the position desired and then tightened to firmly clamp the front to the device.

My invention will be best understood by reference to the following description when taken in connection with the accompanying illustration, showing one specific embodiment thereof, while its scope will be more particularly pointed out in the appended claims.

Figure 1 shows a portion of an automobile with a warning signal device applied thereto. Fig. 2 is a cross section of a warning signal device to which my invention is applied. Fig. 3 is a front elevation of such device having a portion of the resonator cut away. Fig. 4 is a cross section of the device shown in Fig. 2. Fig. 5 is a detail of a modification. Fig. 6 is a detail of a second modification. Fig. 7 is an enlarged detail of a portion of the device shown in Fig. 4.

Referring now to the drawings, an automobile is shown at 1, upon which a warning signal device 2 is mounted. In the form shown, this device consists of a horn, preferably an electrically controlled horn. This horn is controlled by a switch 3 mounted upon the steering device 4. The signaling device may consist of a frame part 5 which supports a vibratile member 6, preferably a diaphragm which is adapted to produce a signal when actuated. Actuating means 7, preferably electromagnetic means is provided for operating this diaphragm. The magnets control an armature 8 which serves the double purpose of actuating the member 6 and controlling a switch 9 in a circuit 10 of the signal device.

11 is a casing part forming a wall of the chamber in which the mechanism of the signal device is housed. Another part 12 is shown which constitutes a front wall of said chamber. This portion has an opening 13 in the front thereof, through which a resonator 14 communicates with the chamber 15 formed by the said parts. The resonator is preferably curved at the outer end to form a bell shaped mouth 16, thus making the elements of the resonator curved. Means are provided for the escape of moisture, dust, dirt and other foreign matter which enters the chamber through the opening 13. In the form of my invention shown, a perforation 20 is formed, preferably in the front wall 12 of the chamber 15. This should be near the periphery of the chamber, though it will be obvious that the

perforation may be placed at the most suitable position with regard to the walls of the chamber. The signal device is attached to the conveyance by an arm 21 and screws 22.

5 As a rule, it is desirable that the opening 20 should be at the lowermost part of the chamber and in order to make it possible to

10 place the opening when the signal device is fastened to the car in any position, I have provided means for adjustably securing the part in which this opening is made to the device so that should it be desired to place the signal device with the arm 21

15 vertical, and the opening 20 adjacent the bottom of the chamber the part in which this opening is made may be adjusted so that the opening will be in the said desired position.

In the form of my invention shown in

20 Figs. 2, 3 and 4, the part 5 is provided with an annular channel 30 adjacent the periphery of the front leaving an outside ridge 31. The edge of the diaphragm is fitted in this channel and the diaphragm secured

25 to the signal device by a ring 32 which is itself, attached to the part 5 by screws 33. The ring 32 is channeled at 34 upon its inside outer edge for the edge 35 of the periphery of the front piece 12 which is fitted

30 therein and adjustably clamped by screws 40 or other clamping means to the signal device. As shown in Fig. 3, the edges of these screws fit over the edge of the periphery of the part 12. As will be readily

35 seen, these screws may be loosened, the part 12 adjustably secured to the signal device and the screws tightened firmly clamping the part 12 down. In the form shown in Fig. 5, the ridge 31 has been reduced and

40 the part 32 extended.

In the form shown in Fig. 6, an annular member 50 is provided which is clamped down by screws 51, the inner edge of the member 50 overlaps the periphery of the

45 front 12, clamping it to the signal device.

It will be seen that the front 12 may be adjusted to position the perforation 20 at any point upon the periphery of a circle and when said opening is formed at a point

50 near the edge of the chamber, the parts may be adjusted so that this opening will be at any point upon the periphery of the said chamber. It will also be obvious to those skilled in the art that numerous and

55 extensive departures from the form and details of the apparatus here shown may be made without departing from the spirit of this invention, the same being herein shown solely for the purpose of clearly illustrating one specific embodiment thereof.

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I claim:

1. In a device of the class described, the combination with a conveyance of a warning signal device carried thereby, a plurality of parts of said device forming the

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walls of a chamber, one of said parts having an opening therein for the passage of sound waves, a vibratile member mounted in said chamber, one of the parts forming the walls of said chamber being provided with a perforation for the escape of foreign matter, said last named part being adjustable to position said perforation at any point on the periphery of a circle and means to operate said vibratile member.

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2. In a device of the class described, the combination with a conveyance of a warning signal device carried thereby, a plurality of parts of said device forming the walls of a chamber, one of said parts having an opening therein for the passage of sound waves, a vibratile member mounted in said chamber, one of the parts forming the walls of said chamber being provided near the periphery of the chamber with a perforation for the escape of foreign matter from said chamber, said last named part being adjustable to position said perforation at any point on the periphery of said chamber and means to operate said vibratile member.

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3. In a device of the class described, the combination with a conveyance, a warning signal device carried thereon, a plurality of parts of said device forming the walls of a chamber in said signal device, one of said parts provided with an opening for the passage of sound waves therefrom, a vibratile member mounted in said chamber adapted to produce sounds when operated, one of the walls of said chamber being provided with a perforation to permit the escape of foreign matter from said chamber, means to adjustably clamp said last named wall to said signal device whereby said wall may be clamped to said device with the opening at any point on the periphery of a circle and means to operate said member.

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4. In a device of the class described, the combination with a conveyance, a warning signal device carried thereon, a plurality of parts of said device forming the walls of a chamber in said signal device, one of said parts provided with an opening for the passage of sound waves therefrom, a vibratile member mounted in said chamber adapted to produce sounds when operated, one of the walls of said chamber being provided with a perforation near the periphery to permit the escape of foreign matter from said chamber, means to adjustably clamp said last named wall to said signal device whereby said wall may be clamped to said device with the opening at any point on the periphery of a circle and means to operate said member.

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5. In a device of the class described, the combination with a conveyance, a warning signal device carried thereon, a plurality of

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parts of said device forming the walls of a chamber in said signal device, one of said parts provided with an opening for the passage of sound waves therefrom, a vibratile member mounted in said chamber adapted to produce sounds when operated, one of the walls of said chamber being provided with a perforation to permit the escape of foreign matter from said chamber, means to adjustably clamp said last named wall to said signal device whereby said wall may be clamped to said device with the opening at any point on the periphery of a circle, said means being affixed to one wall of said chamber and overlapping the edge of said adjustable wall whereby said wall may be adjusted to position said perforation at any point along the periphery of said chamber and means to operate said member.

6. In a device of the class described, the combination with a conveyance, a warning signal device carried thereon, a plurality of parts of said device forming the walls of a chamber in said signal device, one of said parts provided with an opening for the passage of sound waves therefrom, a vibratile member mounted in said chamber adapted to produce sounds when operated, one of the walls of said chamber being provided with a perforation to permit the escape of foreign matter from said chamber, an annular ring loosely fastened to said device and overlapping the edge of said perforated wall, whereby said wall is adjustably mounted on said device and means to operate said vibratile member.

7. In a device of the class described, the combination with a conveyance, a warning signal device carried thereby, a plurality of parts thereof forming the walls of a chamber on said device, one of said parts having an opening therein for the passage of sound waves, and a second opening for the escape of foreign matter from said chamber, means to adjustably secure said part to said device whereby said second opening may be adjusted to any point on the periphery of a circle, a vibratile sound producing member and means to operate said member.

8. In a device of the class described, the combination with a conveyance, a warning signal device carried thereby, a plurality of parts thereof forming the walls of a chamber on said device, one of said parts forming an opening therein for the passage of sound waves, a second opening for the escape of foreign matter from said chamber, a vibratile sound producing member in said chamber, means to secure said member to said device, an annular member secured to said securing means overlapping the edge of said perforated wall and adjustably se-

curing said wall to said warning device and means to operate said device.

9. In a device of the class described, the combination with a conveyance of a warning signal device carried thereby, a plurality of parts forming the walls of a chamber in said signal device, one of said parts being provided with an opening for the passage of sound waves, a resonator communicating with said chamber through said opening, a vibratile member in said chamber adapted when actuated to produce a signal, one of the parts forming the walls of said chamber being provided with an opening for the escape of foreign matter from said chamber, said last named opening communicating directly with said chamber and means to adjustably secure said last named part to the signal device

10. In a device of the class described, the combination with a conveyance of a warning signal device carried thereby, a plurality of parts forming a chamber in said signal device, one of said parts being provided with an opening for the passage of sound waves, a resonator communicating with said chamber through said opening, a vibratile member in said chamber adapted when actuated to produce a signal, one of the parts forming the walls of said chamber being provided with an opening for the escape of foreign matter from said chamber, said last named opening communicating directly with said chamber and an annular member loosely fastened to said device and overlapping an edge of the last named part whereby said last named part is adjustably secured to said signal device.

11. In a device of the class described, the combination with a conveyance of a warning signal device, a plurality of parts thereof forming the walls of a chamber, one of said parts having an opening therein for the passage of sound waves, a vibratile member in said chamber adapted when actuated to produce a signal, one of the parts forming the walls of said chamber, being provided with a perforation near the periphery of the chamber adapted to permit the escape of foreign matter from said chamber, said perforation communicating directly with said chamber and with the outside and means to adjustably secure said parts together whereby said perforation may be adjusted along the periphery of said chamber.

In testimony whereof, I affix my signature in the presence of two witnesses.

WILLIAM W. DEAN.

Witnesses:

F. O. RICHBY,
A. D. T. LIBBY.