May 22, 1956 L. J. PERKOVICH 2,747,038

DRIVER'S ALARM

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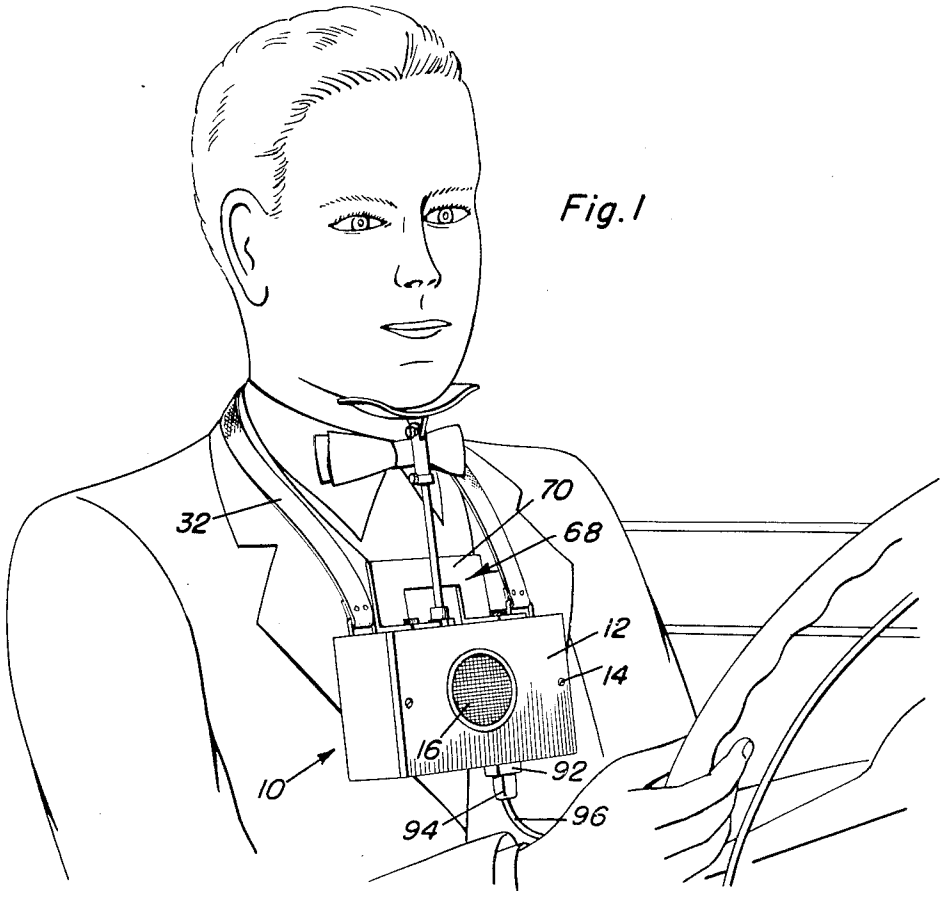
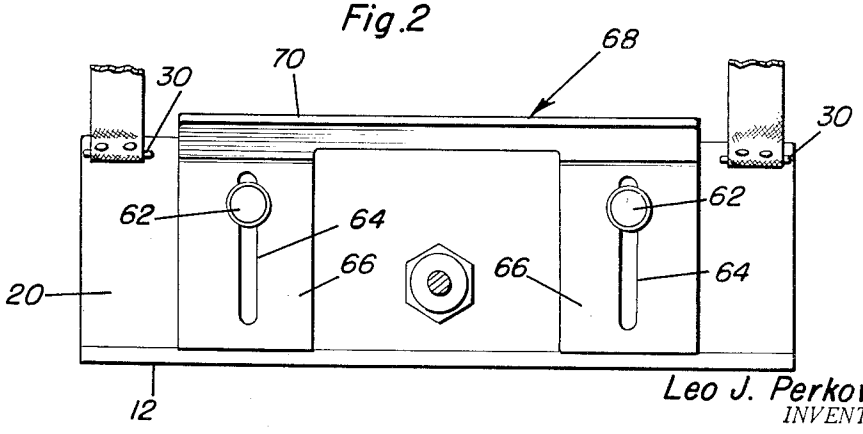


Fig. 1

Fig. 2



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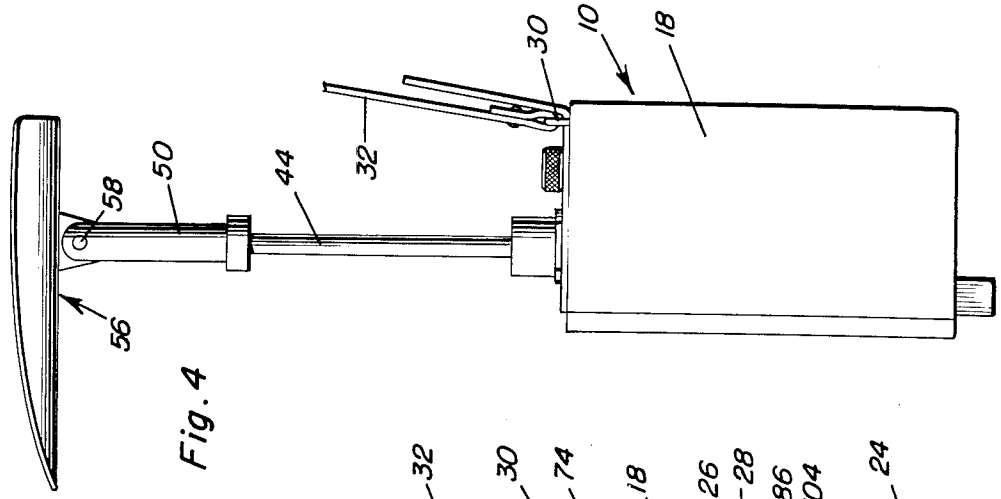


Fig. 4

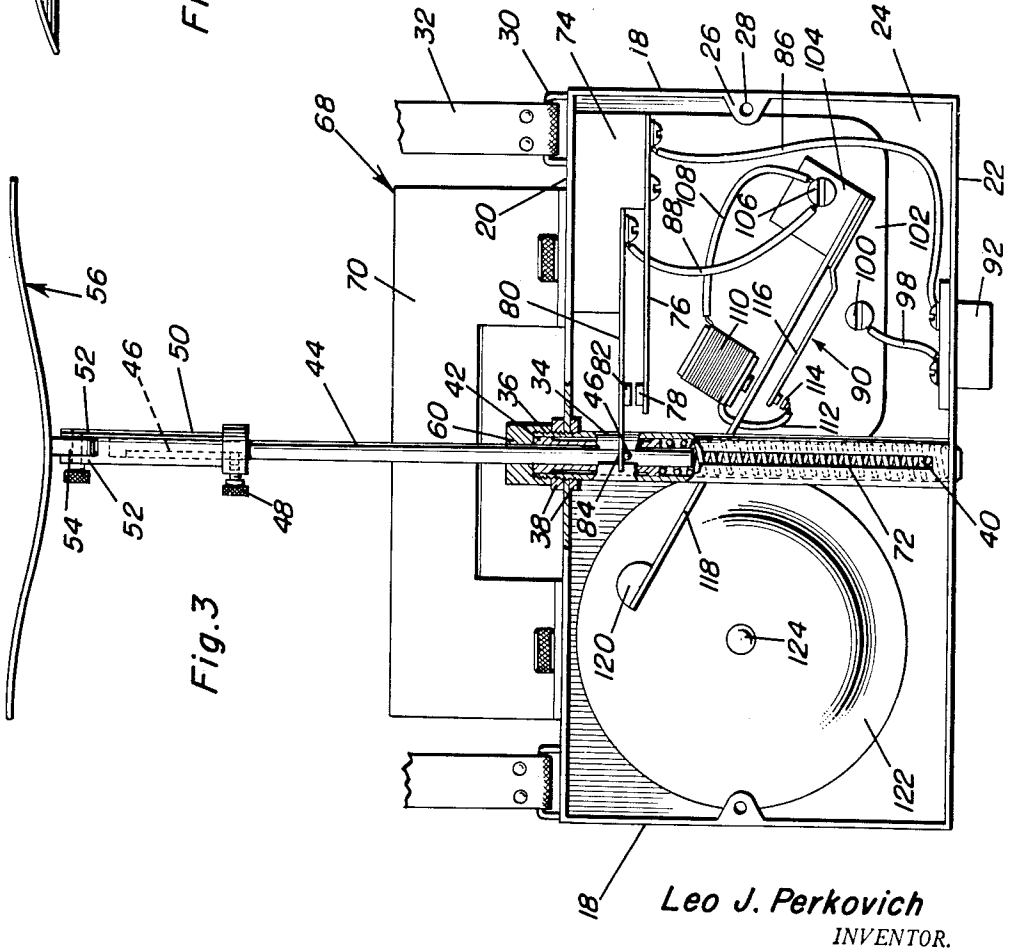


Fig. 3

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DRIVER'S ALARM

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Application July 27, 1953, Serial No. 370,338

2 Claims. (Cl. 200—52)

This invention relates generally to signal devices, and pertains more particularly to an audible signalling or alarm device adapted for use by drivers of automotive vehicles.

A primary object of this invention is to provide an alarm device of simple, rugged and convenient construction which may be utilized by the driver of a vehicle so as to inhibit his sleeping.

Another object of this invention is to provide an alarm device in conformity with the foregoing object which includes an extensible member adapted to engage beneath the chin of a driver so that should the driver fall asleep, his chin will depress the safety member to activate an alarm of an audible nature which will awaken him.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of the invention in position for use;

Figure 2 is a top plan view of the alarm device on an enlarged scale;

Figure 3 is a vertical section taken through the assembly shown in Figure 2; and

Figure 4 is an end view of the alarm device.

Referring now more particularly to the drawings, reference numeral 10 indicates generally the casing housing the alarm device, which is of box-like configuration having an open front and provided thereon with a removable cover plate 12, secured, as by fasteners 14, to the box-like casing. The cover is provided with a central opening covered with foraminous material 16, which permits the emission of sound from the device through said opening.

The main, or box-like, portion of the device includes the end walls 18, top and bottom walls 20 and 22, respectively, and the rear wall 24. Free edges of the end walls 18 are provided with laterally inwardly projecting ears 26 provided with the threaded apertures 28 for receiving the previously described fastening elements 14. The top 20 is provided with a pair of staple members 30 at its opposite ends which receive the looped ends of the strap member 32 which is adapted to engage over a user's neck and suspend the device in the area of his chest, as shown most clearly in Figure 1.

A sleeve 34 extends through an opening in the top wall 20 and rests at its lower end on the bottom wall 22 in the manner shown, the upper end 36 of the sleeve being threaded and receiving the lock nuts 38 on either side of the top wall to secure the sleeve rigidly with respect to the casing. A coil spring 40 is provided within the sleeve and rests at its lower end on the bottom wall 22 and is engaged at its upper end by the bushing 42 which is slidably received within the sleeve and which is secured to a rod member 44 by means of the pin 46,

the rod member extending upwardly from the casing in the manner shown and provided adjacent its upper end with the elongated slot 47 receiving a set screw 48 carried by the thimble 50 which is bifurcated at its upper end to provide the spaced legs 52 which receive therebetween a depending flange 54 on the chin rest member 56. A pivot pin 58 threadedly engages one of the legs 52 and its enlarged head abuts against the other leg to secure the chin support in various positions with respect to the thimble 50, as will be readily apparent. A stop nut 60 is provided on the upper end of the sleeve 34 to prevent displacement of the bushing 42 therefrom.

The top wall 20 of the casing is provided with suitable threaded apertures receiving set screw members 62 which extend through suitable elongated slots 64 in the laterally bent flanges 66 of the positioning bracket assembly 68. This bracket is adapted to be positioned with respect to the casing, with the upright portion 70 of the bracket engaging the user's chest in such a manner as to dispose the rod member 44 and chin support 56 in comfortable engagement with the user's chin. It will be evident that by properly positioning the bracket 68 and the chin rest 56 about its pivot 58, a comfortable position can be obtained which will not prove to be distracting to the driver.

Referring once again to Figure 3, it will be seen that the sleeve is provided with a vertically elongated slot 72 to allow movement of the bushing and rod assembly since the pin 46 which secures these two members together projects forwardly from the bushing. An insulated mounting block 74 is secured within the casing and carries a contact member which includes a resilient contact arm 76 and a contact point 78, and this block also carries another contact member thereabove, which includes the resilient portion 80, the contact point 82, and the extended finger portion 84 which overlies the projecting end of the pin 46 for contact by the same. Normally, the action of coil spring 40 urges the bushing and rod assembly to such a point as to maintain the contact points 78 and 82 out of engagement with each other. However, should the driver fall asleep, his head will nod, and depress the chin support and the associated rod member 44 and bushing 42 to permit the contact point 82 to engage the contact point 78 and thus complete the circuit through the conductors 86 and 88 to the clapper assembly, indicated generally by the reference character 90. In this respect, it is observed that the contact arms 76 and 80 are initially disposed such that if they are free from outside influence, the contact points 78 and 82 will be engaged.

The casing carries a female plug assembly 92 which may receive the plug 94 carrying the conductor 96 which is connected to a suitable source of electric current and it will be apparent that one contact of the plug 92 is connected to the conductor 86 while the other is connected to the conductor 98 which is electrically connected by fastener 100 to the contact plate 102. The clapper assembly 90 includes an insulated mounting block 104 which carries the mounting screw 106 connecting the conductor 88 to a conductor 108 leading to the electromagnet member 110. Conductor 112 leads from the other side of the electromagnet to a contact 114 disposed in the path of movement of the swingable contact element 116 secured to the clapper arm 118 and grounded to the plate 102. The clapper arm carries a weighted clapper element 120 at its free end adapted to strike the bell 122 secured to the casing in a well known manner, as by the fastener 124. It will be evident that when the contacts 78 and 82 are engaged, the circuit to the clapper assembly will be completed, which will result in vibration of the clapper arm 118 in the conventional

manner to periodically strike the bell 122 and sound an alarm which will awaken the driver. The casing not only provides a convenient housing for the alarm assembly but also acts as a sounding board for the same, so that a relatively compact unit will produce sufficient sound to assure that the driver will be constantly alert.

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claims.

What is claimed as new is as follows:

1. A sleep inhibiting alarm device for automobile drivers operated by the closing of alarm contacts of an alarm circuit enclosed in a box carried by the driver in tht region of the chest, comprising a substantially vertical rod projecting from said chest carried box upwardly towards the frontal portion of the driver's chin, the rod carrying at its end a transverse member on which the frontal portion of the chin presses when the driver's head leaves its upright position, a substantially vertical guiding sleeve for said rod in said box to produce a linear substantially vertical movement of the rod, resilient spring means pressing the rod upwardly, an actuating pin projecting from said rod in a transverse direction, a pair of contact springs each carrying one of the alarm contacts, said springs being biased for contact closure and being arranged transversely with respect to the rod, one of said contact springs being normally kept in tensioned condition by the actuating pin in which the alarm contact carried by the spring is spaced from the alarm contact of the other spring of the pair, the contact springs being closed when a downwardly directed thrust counteracts the upwardly directed spring pressure acting on the substantially vertical rod projecting from the chest.

2. A switching means for sleep inhibiting alarm having a chin engaging assembly including a substantially vertical rod, comprising a guiding sleeve for the rod provided with a slot, a spring means urging the rod upwardly arranged within said guiding sleeve, an actuating pin projecting from said rod in a transverse direction, a pair of contact springs each carrying a contact with the springs biased for contact closure, one of said springs having an extension, said extension resting on the actuating pin of the chin engaging substantially vertical rod, the spring pressed rod normally tensioning and lifting said last named contact spring having an extension out of contact with the other contact spring of the pair, the action of the spring means on the chin engaging substantially vertical rod being overcome by a downwardly directed pressure acting on the rod, such pressure counteracting the action of the spring means on the rod and producing a vertical downward movement of the rod, releasing said contact spring having the extension.

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