

[54] **SLEEP PREVENTING DEVICE**

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[22] Filed: **May 30, 1974**

[21] Appl. No.: **474,709**

[52] U.S. Cl. **340/279; 179/107 H**

[51] Int. Cl.² **G08B 5/00**

[58] Field of Search **340/279**

[56] **References Cited**

UNITED STATES PATENTS

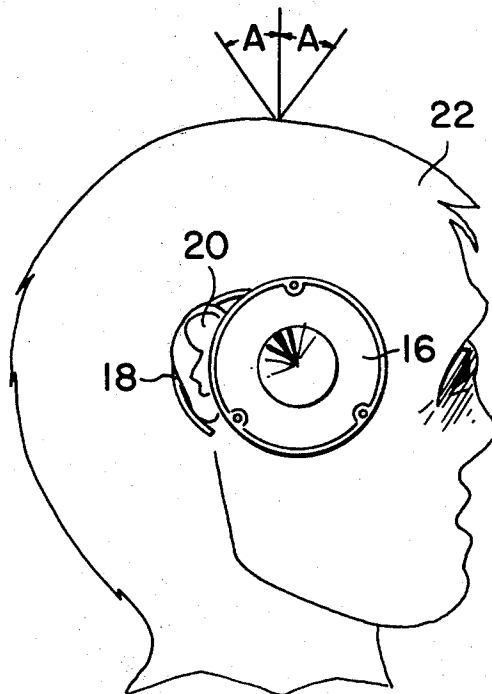
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Primary Examiner—Thomas B. Habecker

[57] **ABSTRACT**

A hollow shallow cylindrical member is provided with a clip for detachably securing the member to an ear of a driver of a vehicle or other user. The member transmits external noise to the ear and is also provided with a battery powered buzzer turned on by a normally open mercury containing tilt switch when the user's head tilts forward, sideways or backward at an angle of at least 40°. The noise of the buzzer prevents the user from falling asleep.

2 Claims, 5 Drawing Figures



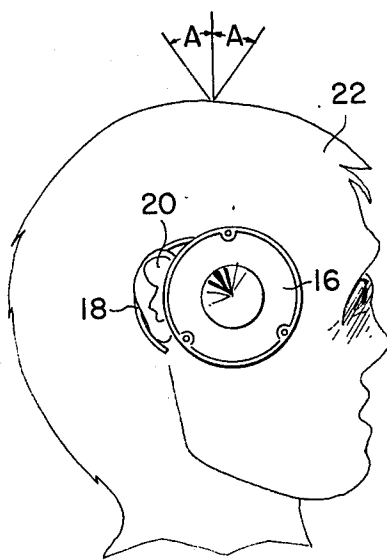


FIG. 1

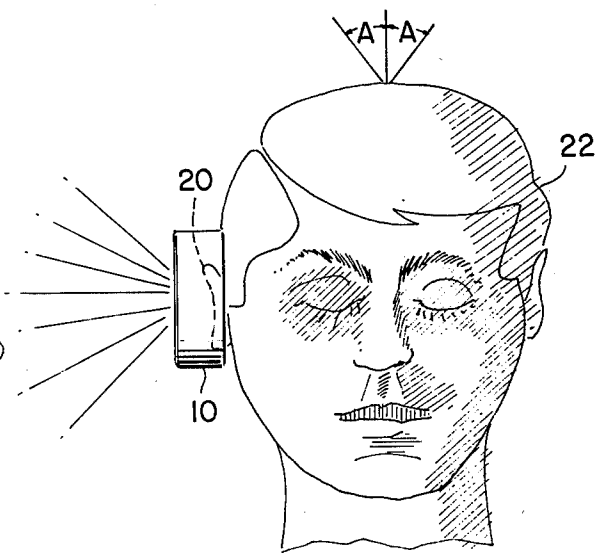


FIG. 2

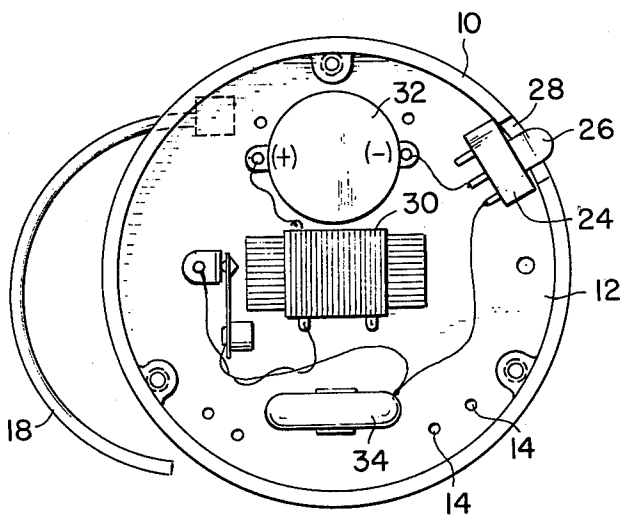


FIG. 3

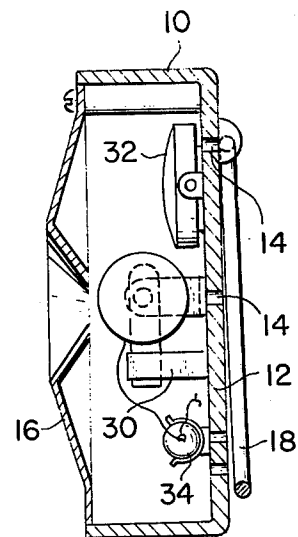


FIG. 4

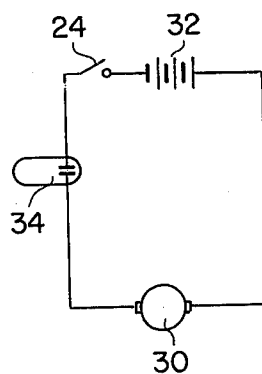


FIG. 5

SLEEP PREVENTING DEVICE**SUMMARY OF THE INVENTION**

This invention is directed toward a device which can be worn by a user such as the driver of a vehicle to prevent the user from falling asleep.

To this end, a hollow shallow cylindrical member is provided with means for detachably securing the member to an ear of the user. The member has an inner flat perforated surface and an outer surface in the form of a sound collecting diaphragm whereby the external or ambient noise or sound is always transmitted to the ear and no noise is blocked.

The member is provided with a mercury containing tilt switch is normally open and is automatically closed when the user's head tilts forward, backward or sideways at an angle of 40° or more. This tilting action will occur whenever the user nods or momentarily falls asleep. A battery powered buzzer in the member is turned on when the switch is closed. This buzzer produces an unpleasant noise which goads the user into wakefulness.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1 is a side view showing the invention in use;
FIG. 2 is a front view showing the invention in use;
FIG. 3 is a cut away front view of the invention;
FIG. 4 is a cut away side view of the invention, and
FIG. 5 is a circuit diagram of the invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENT

Referring now to FIGS. 1-5, a shallow hollow electrically non conductive cylinder 10 has an inner flat surface 12 with perforations 14 and has an outer surface in the form of a sound collecting diaphragm 16. An ear engaging clip 18 is secured pivotally to surface 10 and extends outward to detachably engage an ear 20 on the

head 22 of the wearer.

A manually operable on-off switch 24 is disposed within the member and has a control button 26 extending outward through opening 28 in the side wall of the member.

The member also contains an electrically operated buzzer 30, a battery or dry cell 32, and a mercury containing tilt switch 34, all connected in series with each other and with switch 24. The switch 34 is normally open but is automatically closed to actuate the buzzer (providing switch 24 is closed) whenever the angle A of tilt of the head is at least equal to 40 degrees.

While the invention has been described with detailed reference to the drawings, the protection sought is to be limited only by the terms of the claims which follow.

I claim:

1. A sleep prevention device, comprising:

a hollow shallow cylindrical member having an inner flat perforated surface and an outer surface in the form of a sound collecting diaphragm;

ear engaging means secured to the inner surface and designed to detachably engage an ear of the user to secure the member thereto, whereby sound may be collected by the diaphragm and transferred to the ear via the member without being blocked;

a battery in the member;

an electric buzzer in the member; and

a normally open mercury containing tilt switch in the member connected in series with the battery and buzzer and being closed when the head of the user tilts at least 40° with respect to the vertical.

2. The device of claim 1 further including a manually operable on-off switch disposed in series with the tilt switch, battery and buzzer, the manual switch being disposed inside the member and having a control button extending out of an opening in the side wall of the member.

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