# United States Patent [19]

**Mallinger**

[11] **3,823,383**

[45] **July 9, 1974**


[54] **AUDIBLE SPEEDOMETER**


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[22] Filed: **Feb. 8, 1973**

[21] Appl. No.: **330,498**

[52] **U.S. Cl.** ..... **340/62,** 340/263

[51] **Int. Cl.** ..... **B60q 1/54**

[58] **Field of Search** ..... 340/53, 62, 263, 52 F



[56] **References Cited**

UNITED STATES PATENTS

3,546,668 12/1970 Legler et al. ..... 340/62



*Primary Examiner*—Alvin H. Waring

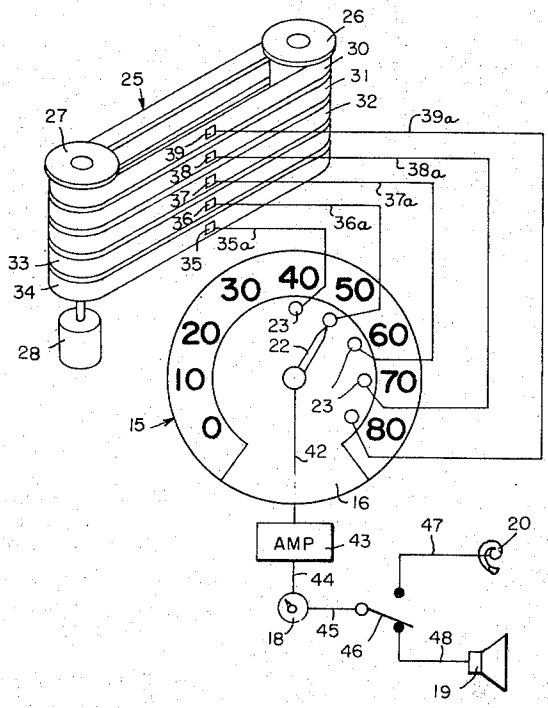
*Attorney, Agent, or Firm*—PP. L. Schlamp



[57] **ABSTRACT**

An audible speedometer wherein sound reproduction means is operatively connected to a plurality of intelligent signal sources and vehicle speed sensing means for reproducing an intelligent audio-signal indicative of vehicle speed.


**5 Claims, 2 Drawing Figures**



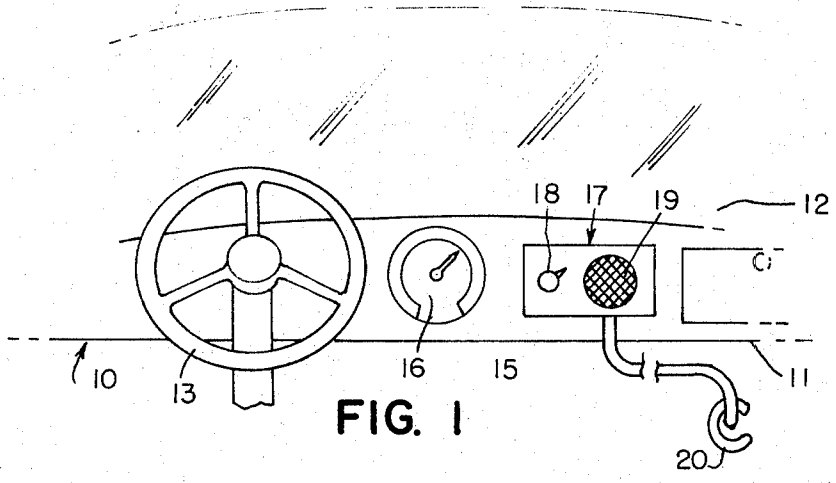

18
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FIG. 1

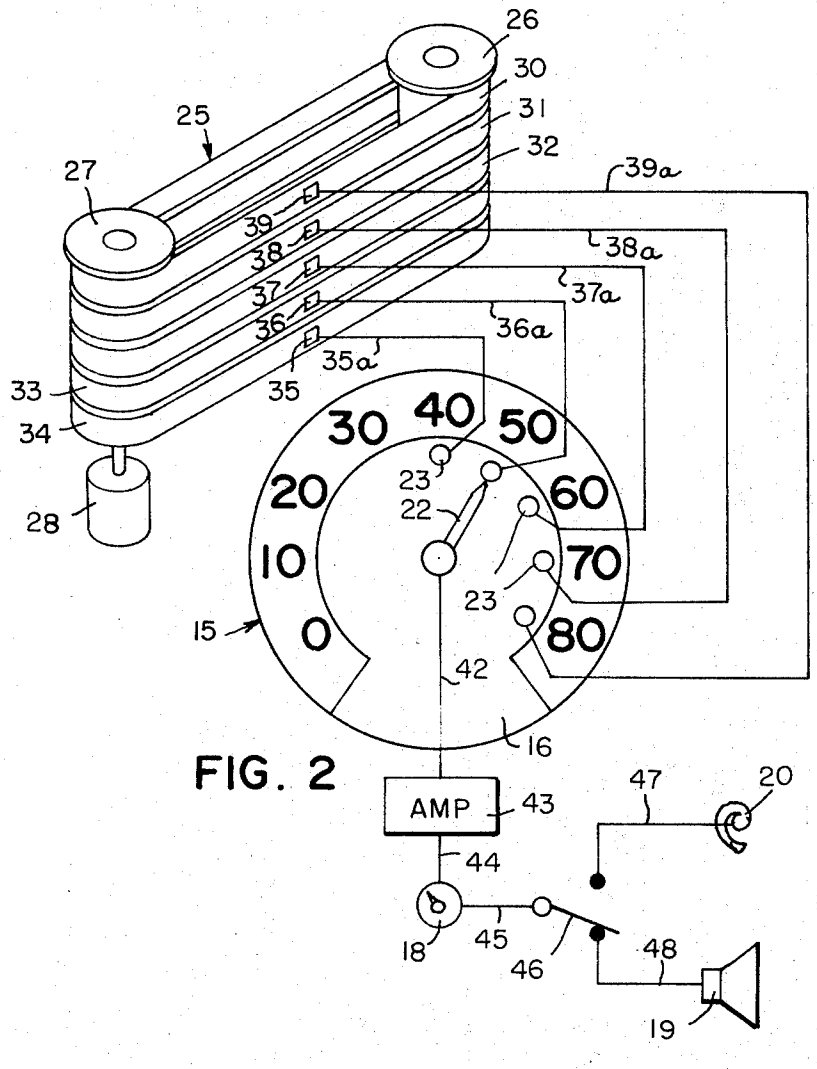
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FIG. 2

# AUDIBLE SPEEDOMETER

## BACKGROUND OF THE INVENTION

As is well known to those familiar with present day driving conditions, relatively high speed limits exist and are often strictly enforced on many roads and highways requiring 100 percent of the driver's visual attention. Also, ease and comfort of vehicle operating conditions often belie true vehicle velocity, being indicative to the operator of a less than true speed. Also, there is reason to believe that frequent observation of a conventional speedometer necessary to maintain vehicle speed within permitted limits, is a contributory cause to many accidents.

## SUMMARY OF THE INVENTION

Accordingly, it is an important object of the present invention to provide a novel and unique construction of audible speedometer which overcomes the above-mentioned difficulties, permitting a driver to direct his entire visual attention to the driving conditions, affording an accurate representation of true vehicle speed, all without diversion of an operator's eyes from the road.

It is another object of the present invention to provide an audible speedometer having the advantageous characteristics mentioned in the preceding paragraph which avoids the alarm or shock effect, which of itself may cause an accident, and does not disturb passengers of the vehicle, all while maintaining a continuing supervisory and signaling action.

It is still another object of the present invention to provide an audible speedometer of the type described which is extremely simple in construction and operation for manufacture at a reasonable cost, being highly reliable throughout a long useful life with a minimum of maintenance and repair, and which can be economically manufactured for sale at a reasonable price.

Other objects of the present invention will become apparent upon reading the following specification and referring to the accompanying drawings, which form a material part of this disclosure.

The invention accordingly consists in the features of construction, combinations of elements, and arrangements of parts, which will be exemplified in the construction hereinafter described, and of which the scope will be indicated by the appended claims.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a forward looking interior view showing a motor vehicle operator station incorporating the audible speedometer of the instant invention.

FIG. **2** is a somewhat diagrammatic and schematic representation of the electrical apparatus of the instant invention.

## DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now more particularly to the drawings, and specifically to FIG. **1** thereof, a vehicle is there generally designated **10,** including a dashboard or panel **11** located below the windshield **12.** A steering wheel is shown at **13,** and a speedometer is generally designated **15,** being mounted in the panel **11** and including a face **16.** Also mounted in the control panel or dashboard **11** may be a control box **17,** including a control knob **18,**



a sound producer or speaker **19,** and an additional or optional sound producer or earpiece **20.**

The speedometer **15** is shown in greater detail in FIG. **2** and may have a conventional face **16** provided with numeral indicia and a movable pointer **22** for designating the indicia corresponding to vehicle speed. The movable pointer **22** may include or constitute a movable contact or switch arm, and there may be associated with the numeral indicia respective fired contacts **23,** with which the movable contact or switch arm **22** is successively engageable upon arm movement in one direction. The fixed contacts **23** may be relatively small and leave substantial openings or spaces along the path of movement of arm contact **22;** or, the fixed contact may occupy substantial space along the path of arm movement, leaving relatively little unoccupied or open space, for purposes appearing presently.

A signal source is generally designated **25,** and may include what is sometimes called a tape deck, say being constituted of a pair of rotary members or spools **26** and **27,** at least one of which is driven, say spool **27,** as by a motive means or motor **28.** A plurality of recorded message bearing means, such as endless tapes **30, 31, 32, 33** and **34** may each be circumposed about the driving and driven spools **27** and **26** for continuous rotation thereabout upon operation of drive motor **28.** The signal sources or tapes **30–34** are each provided with a recorded message pertinent to a respective vehicle velocity or speed. That is, each of the signal sources or tapes serves to announce the existence of a particular vehicle speed.

Toward this end, a plurality of tape heads or pick-up means, say magnetic, may be provided, as at **35, 36, 37, 38** and **39,** each associated with a respective tape **30–34** for sensing the message carried by the associated tape. The pick-up magnets or tape heads **35–39** are each connected to a respective fixed contact **23,** as by respective electrical connections or conductors **35***a*, **36***a*, **37***a*, **38***a* and **39***a*.

It will now be appreciated that the signal source or tape **34** is operatively associated with its pick-up head **35** for electrical connection through conductor **35***a* to contact **23** of speedometer indicia "**40**", while tape **33** is associated with pick-up head **36** which is connected through conductor **36**a to contact **23** of speedometer indicia "**50**"; tape **32** being associated through its pick-up **37** and thereby connected through conductor **37***a* to the contact **23** associated with speedometer indicia "**16**"; signal source or tape **31** being operatively associated through its pick-up head **38** and conductor **38***a* with the contact **23** of speedometer indicia "**70**"; and signal source or tape **30** being connected through associated pick-up head **39,** which is in turn connected through conductor **39***a* with the contact **23** associated with speedometer indicia "**80**".

The movable contact or arm **22** is connected through a conductor **42** with suitable amplifying means, as at **43,** which may in turn be connected through a conductor **44** and suitable control **18,** thence through a conductor **45** to an output selector switch **46.** The switch **46** may be a double throw type including an output conductor **47** connected to the earpiece **20,** and an additional output conductor **48** connected to a speaker **19.**

While an energy source and complete circuitry has not been shown, the representation of FIG. **2** being dia-

grammatic, it is appreciated that the circuitry may be made operative following the teachings herein by the exercise of mere skill in the art.

It will now be understood that, in use of the vehicle **10,** as with the endless tapes **25** moving about their endless paths, and power being supplied to the sound reproduction means, the speedometer arm or movable contact **22** is angularly shiftable and positioned corresponding to the vehicle speed. Thus, in the illustrated position of vehicle speed being 50 m.p.h., the signal source or tape **33** has its message picked up by the associated head **36,** the signal being conducted therefrom through conductor **36***a*, arm **22** and conductor **42** to the amplifier **43,** from which it is passed to the speaker **19.** As noted hereinbefore, each signal source or tape **30–34** may have a recorded message thereon for announcing the vehicle speed corresponding to the associated speedometer contact, which message is reproduced by the speaker **19,** or optionally by the earpiece **20,** as desired. This provides a continuing audible message to the operator such that his eyes need not leave the road to achieve the advantageous results set forth hereinbefore.

While in the illustrated embodiment the contacts **23** are relatively small, so that a message is reproduced only when the vehicle is at a speed closely approximating that of a multiple of **10,** the fixed contacts may be enlarged to provide the audible message throughout a greater range of speeds, as desired.

Although the device of the instant invention has been illustrated and described as operatively associated directly with the visual indicating speedometer, it is appreciated that the instant audible speedometer may be actuated by other suitable means. For example, it may be advantageous under certain circumstances, say in existing vehicles, to use a device of the instant invention operatively connected to other components of a vehicle, say the motor, drive train, or transmission. In particular, a device of the instant invention may be connected to a conventional tachometer take-off, say on the vehicle transmission, or elsewhere.

From the foregoing, it is seen that the present invention provides an audible speedometer which is extremely simple in construction and operation, adapted to produce a durable and reliable apparatus throughout a long useful life, and capable of manufacture, installation and maintanance at a reasonable cost.

Although the present invention has been described in some detail by way of illustration and example for purposes of clarity of understanding, it is understood that certain changes and modifications may be made within the spirit of the invention.

What is claimed is:

**1.** An audible speedometer comprising a plurality of fixed contacts each corresponding to a respective vehicle velocity, a movable contact movable responsive to vehicle speed for engagement with respective fixed contacts at said respective vehicle velocities, sound reproduction means, a plurality of separate audible intelligent signal sources each continuously presenting a signal corresponding to a respective vehicle velocity, and electrical connection means operatively connecting each of said fixed contacts with a respective one of said signal sources and connecting said movable contact to said sound reproduction means to reproduce a single audible intelligent signal responsive to an existing vehicle speed.

**2.** An audible speedometer according to claim **1,** in combination with a mechanical speedometer connected to said movable contact to move the latter.

**3.** An audible speedometer according to claim **1,** in combination with an electrical speedometer connected to said movable contact to move the latter.

**4.** An audible speedometer according to claim **1,** said signal sources comprising a plurality of separate, simultaneously and continuously operable recorded messages corresponding to respective vehicle speeds.

**5.** An audible speedometer according to claim **4,** said recorded messages each comprising an endless tape, and said electrical connection means comprising a plurality of pick-up heads each operatively associated with a respective tape and a respective fixed contact, for transmitting the respective recorded signal corresponding to vehicle speed.

* * * * *

PRINTER'S TRIM LINE

# UNITED STATES PATENT OFFICE
# CERTIFICATE OF CORRECTION

Patent No. 3,823,383 Dated July 9, 1974

Inventor(s) John Mallinger

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

On the cover sheet cancel "[73] Assignee: General Electric Company, New York, N. Y."; "PP. L. Schlamp" should read -- Robert K. Youtie --.

**Signed and sealed this 26th day of November 1974.**

(SEAL)
**Attest:**

McCOY M. GIBSON JR.
**Attesting Officer**

C. MARSHALL DANN
**Commissioner of Patents**

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