Abstract: Children's footwear configured to have the appearance of a motor vehicle. The footwear has a light emitting device, a sound emitting device, and a remote transmitter for controlling the light emitting device and the sound emitting device. The footwear may come in a variety of motor vehicle appearances.
VEHICLE-SHAPED FOOTWEAR

BACKGROUND DESCRIPTION

TECHNICAL FIELD:

[0001] This invention pertains generally to footwear incorporating lighting and sound circuitry, and more particularly to an article of footwear for children, which is shaped like a vehicle, incorporating a multiple switch controlled lighting and sound circuit.

BACKGROUND OF THE INVENTION:

[0002] Footwear having lighting and sound circuitry is well known. Lighting and sound devices have been incorporated into a variety of footwear, including dress shoes, athletic shoes, boot, sandals, etc. Footwear shaped like a vehicle is also known.

[0003] There are several known implementations of footwear lighting devices. The most basic implementation involves the use of a light source (e.g. an incandescent bulb, a neon tube, or a light emitting diode ("LED")), a portable power supply such as a battery and a manually operated on-off switch. These elements are connected as an electric circuit and are located in a convenient location in the footwear, such as within the sole and/or heel structure.

[0004] A more complex implementation of lighted footwear includes the provision of a switching circuit to switch the light on and off in association with the presence of the absence of the wearer's foot in the shoe or the contact of the wearer's foot with the ground.

[0005] A third implementation involves the use of a so-called "motion switch" that is utilized to detect movement of the wearer's foot. The detection of movement causes the light to illuminate. Such a "motion switch" usually involves the use of a "tilt switch,"
i.e. a mercury switch, to sense the angular position of the shoe with respect to the gravity gradient to activate the circuit at a particular attitude of the switch.

[0006] There are also known implementations of providing sound in footwear. One such implementation incorporates a loud speaker with is triggered by an electrical switch. The sound can be an excerpt from a commercial recording, a voice element, or an instrumental element.

[0007] It is desirable to have footwear that incorporates both the lighting element and the sound element in one shoe. It is further desirable to have such footwear where the lighting and sound elements may be user controlled. Finally it is desirable to have footwear shaped like a vehicle that incorporates these elements.

SUMMARY OF THE INVENTION

[0008] This invention therefore provides for a shoe with a body configured to have the appearance of a motor vehicle. The shoe has a light emitting device and a sound emitting device provided on the body. The light emitting device and the sound emitting device may be controlled by a remote transmitter. The body may be configured to appear like one of a variety of different motor vehicles. Furthermore, the sound emitting device may produce a variety of motor vehicle like sounds as well as spoken words.

[0009] In another embodiment the light emitting device and the sound emitting device may be controlled by a controller within the body of the shoe. The controller may consist of a vibration sensor that activates the light emitting device and/or the sound emitting device when a certain level of vibration is reached.

BRIEF DESCRIPTION OF THE DRAWINGS:

[0010] The invention will now be described in greater detail in the following by way of example only and with reference to the attached drawings, in which:

[001 1] FIG. 1 is a side view of one embodiment of the present invention.
FIG. 2 is a back view of one embodiment of the present invention.

FIG. 3 is a front view of one embodiment of the present invention.

FIG. 4 is a bottom view of one embodiment of the present invention.

FIG. 5 is a perspective view of one embodiment of the present invention showing the flaps in the open position.

FIG. 6 is a perspective view of one embodiment of the remote transmitter.

FIG. 7 is a schematic diagram of the circuitry of one embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION:

The present invention provides footwear, e.g. shoes, boots, sneakers, skates, etc. for children that have the appearance of motor vehicles, such as cars, trucks, fire engines, ambulances, police vehicles, etc. Herein, any and all such footwear will be referred to as a "shoe" for purposes of simplicity.

FIGS. 1-3 are the side, back and front views, respectfully, of a sports utility vehicle embodiment of the shoe 100. The shoe may consist of a body into which the child places his or her foot, a securable flap 140 to hold the child's foot in the shoe, light emitting devices 120 and 121, and/or a sound emitting device 110. The body of the shoe 100 is configured to resemble a motor vehicle and, as such, has many aspects found in motor vehicles, such as wheels 130, head lights 121, tail lights 120, a hood, etc. The wheels 130 may be illustrated or may be actual toy wheels attached to the shoe 100.

The shoe 100 is accessed by one or more flaps 140, corresponding to a car door, hood or trunk. Each flap may be removably secured to the main body of the shoe 100 by a suitable securing mechanism, e.g., Velcro. In alternate embodiments,
however, the shoe may be a slip-on, resembling a flatbed or pickup truck, in which case no flap may be needed and "entrance" may be from the "bed" of the shoe, or may be a high-top shoe resembling an SUV (Sport Utility Vehicle), wherein the "entrance" may be from the top, or "roof" of the shoe.

[0021] The lights 120 and 121, which may be low power low voltage light sources such as LEDs, LCDs, etc. are mounted in the shoe 100 at locations corresponding to the location of head light, tail lights, turn signal blinkers, and/or flashers on real motor vehicles. The lights 120 and 121 may be controlled by a remote transmitter 600 (see FIG. 6 described below), an in shoe controller (not shown) and/or an optional vibration sensor 727 (see FIG. 7 described below).

[0022] Additionally the footwear may be provided with a sound emitting device 110. The sound emitting device may produce various vehicle related sounds, such as a honk, an engine rev, a siren, a tire screech, etc. In addition to vehicle related sounds, the sound emitting device may produce spoken words or phrases, thereby giving each type of footwear a different "personality." The sounds may be controlled by a remote transmitter 600 (see FIG. 6 described below), an in shoe controller (not shown) and/or an optional vibration sensor 727 (see FIG. 7 described below). A sound producing device may be provided in one shoe or both shoes. Alternately, the sound producing device may be provided in the remote transmitter itself, and possibly correlated with corresponding light signals provided to the shoe. For example, a screeching sound emanating from the remote transmitter may be correlated with brake or warning lights; a horn sound may be correlated with flashers or headlights, etc.

[0023] FIG. 4 is a bottom view of an embodiment of the shoe 100. Each shoe may have a picture 404 printed on the bottom that resembles the under carriage of a vehicle. The picture may be covered with a clear rubber to provide traction.

[0024] FIG. 5 is a perspective view of the shoe 100 with the flaps 140 and 550 in the open position. When the door flap 140 is open the child can easily slip his or her foot into the shoe 100. The door flap 140 may then be closed and secured by a suitable securing mechanism, e.g. Velcro. The hood flap 550 may conceal the battery holder 560 that supplies power to the light emitting devices 120 and 121 and the sound emitting
device 110. The hood may also conceal an IR receiver 757 (see FIG. 7 discussed below) and the circuit wiring.

[0025] FIG. 6 is a perspective view of one embodiment of the remote transmitter 600. The remote transmitter 600 may have a band 670 that allows it to be securely fastened to the shoe wearer's arm. The band 670 may be secured by a suitable securing mechanism, e.g. Velcro. The remote transmitter 600 may consist of one or more buttons 680-682 that control the light emitting devices 120 and 121, the sound emitting devices 110, or a combination of the two. For example pressing button 681 may turn on the head lights, pressing button 682 may sound the horn, and pressing button 680 may turn on the break lights and cause the sound emitting device to emit a tire screeching sound.

[0026] Furthermore, the remote transmitter 600 may be provided with an IR transmitter 690 to send messages to the shoe 100 via the IR receiver 757 in the shoe 100. The remote transmitter 600 may also have a cover (not shown) corresponding to the type of vehicle with which it is associated, such as a checkered flag design in conjunction with a race car.

[0027] In an alternate embodiment, the lights and/or sounds may be controlled by a controller provided in the shoe 100 itself. The controller may be activated by certain motions of a wearer such as tapping or contacting the ground or floor with a certain part of the shoe.

[0028] FIG. 7 is a schematic diagram of an embodiment of the circuitry for the shoe 100. The circuitry may consist of a circuit board 707. The circuit board 707 may be attached to a tail light 717, a head light 767, a vibration sensor 727, an IR detector 757, a sound emitting device 747, and/or a power source 737. Additional attachments, such as additional light emitting devices, may be added to the circuit board 707 as needed.

[0029] As required, disclosures herein provide detailed embodiments of the present invention; however, the disclosed embodiments are merely exemplary of the invention that may be embodied in various and alternative forms. Therefore, there is no
intent that specific structural and functional details should be limiting, but rather the intention is that they provide a basis for the claims and as a representative basis for teaching one skilled in the art to variously employ the present invention.
What is claimed is:

1. A shoe, comprising:
   a body configured to have the appearance of a motor vehicle;
   a light emitting device provided on the body;
   a sound emitting device provided on the body; and wherein
   the light emitting device and the sound emitting device are controlled by a remote
   transmitter.

2. The shoe of claim 1, further comprising a power source, wherein the light
   emitting device, the sound emitting device and the power source are connected to a
   circuit board.

3. The shoe of claim 2, further comprising an IR detector connected to the circuit
   board.

4. The shoe of claim 3, wherein the remote transmitter further comprises an IR
   transmitter.

5. The shoe of claim 2, further comprising a vibration sensor connected to the
   circuit board.

6. The shoe of claim 1, wherein the body has at least one securable flap for
   facilitating access to a wearer's foot into the shoe, said at least one flap corresponding to
   one of a door, hood and trunk of the motor vehicle.
7. The shoe of claim 2, further comprising a securable flap that conceals at least said power source, said securable flap corresponding to a hood or a trunk of the motor vehicle.

8. The shoe of claim 1, wherein the body is configured to have the appearance of a race car.

9. The shoe of claim 1, wherein the body is configured to have the appearance of a sports utility vehicle.

10. The shoe of claim 1, wherein the body is configured to have the appearance of a sedan.

11. The shoe of claim 1, wherein the body is configured to have the appearance of a pickup truck.

12. The shoe of claim 1, wherein the body is configured to have the appearance of a truck.

13. The shoe of claim 1, wherein the body is configured to have the appearance of a fire engine.

14. The shoe of claim 1, wherein the body is configured to have the appearance of a police vehicle.
15. The shoe of claim 1, wherein the body is configured to have the appearance of an ambulance.

16. The shoe of claim 1, wherein the body is configured to have the appearance of an emergency vehicle.

17. The shoe of claim 1, wherein the body is configured to have the appearance of a bus.

18. The shoe of claim 1, wherein the remote transmitter is adapted to be worn on the user's wrist.

19. The shoe of claim 1, wherein the light emitting device corresponds to at least one of a headlight, turn signal, and emergency flashing light.

20. The shoe of claim 19, wherein the light emitting device is an LED.

21. The shoe of claim 19, wherein the light emitting device is an LCD.

22. The shoe of claim 19, wherein the light emitting device is a light bulb.

23. The shoe of claim 1, wherein the sound emitting device produces a horn sound.

24. The shoe of claim 1, wherein the sound emitting device produces a tire screeching sound.
25. The shoe of claim 1, wherein the sound emitting device produces an engine revving sound.

26. The shoe of claim 1, wherein the sound emitting device produces a siren sound.

27. The shoe of claim 1, wherein the sound emitting device produces spoken words.

28. A shoe, comprising:
   a body configured to have the appearance of a motor vehicle;
   a light emitting device provided on the body;
   a sound emitting device provided on the body; and
   a controller provided within the body for controlling the light emitting device and the sound emitting device.

29. The shoe of claim 28, further comprising a vibration sensor connected to the controller, whereby said controller controls operation of at least one of said light emitting device and said sound emitting device in response to a signal received from said vibration sensor.

30. The shoe of claim 28, wherein the body has at least one securable flap for facilitating access to a wearer's foot into the shoe.

31. The shoe of claim 30, wherein the flap corresponds to one of a door, hood and trunk of the motor vehicle.
32. The shoe of claim 28, wherein the light emitting device corresponds to at least one of a headlight, turn signal, and emergency flashing light.

33. The shoe of claim 32, wherein the light emitting device is an LED.

34. The shoe of claim 32, wherein the light emitting device is an LCD.

35. The shoe of claim 32, wherein the light emitting device is a light bulb.

36. The shoe of claim 28, wherein the sound emitting device produces a horn sound.

37. The shoe of claim 28, wherein the sound emitting device produces a tire screeching sound.

38. The shoe of claim 28, wherein the sound emitting device produces an engine revving sound.

39. The shoe of claim 28, wherein the sound emitting device produces a siren sound.

40. The shoe of claim 28, wherein the sound emitting device produces spoken words.

41. Footwear, comprising:
   a body adapted to be worn by a foot;
   a light emitting device provided on the body; and
   a remote control device for controlling the light emitting device.
42. Footwear as set forth in claim 41, further comprising a sound emitting device provided on said body, and wherein said remote control device further controls said sound emitting device.

43. Footwear, comprising:
   a body adapted to be worn by a foot;
   a sound emitting device provided on the body; and
   a remote control device for controlling the sound emitting device.

44. Footwear as set forth in claim 43, further comprising a light emitting device provided on said body, and wherein said remote control device further controls said light emitting device.
INTERNATIONAL SEARCH REPORT

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A CLASSIFICATION OR SUB ICCT MAT TCR
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USPC - 36/1 39, 137, 136

According to International Patent Classification (IPC) or to both national classification and IPC

B FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC(8) - A43B 23/24 (2007 01), A43B 3/30 (2007 01)
USPC - 36/139 137, 136

Documentation searched other than minimum documentation to the extent that such documents are included in the fields, searched
IPC(8) - A43B 23/24 (2007 01), A43B 3/30 (2007 01) (see keyword below)
USPC - 36/1 12 139 137 136 (see keyword below)

Electronic data base consulted during the international search (name of data base and where practicable search terms used)
PubWEST (USPTO PGPB, EPAB JPA) DialogPRO (Engineering) Google Scholar
Search Terms Used vehicle light device sound device remote vibration sensor securing flap strap Velcro children

C DOCUMENTS CONSIDERED 10 BY RELATIVE

<table>
<thead>
<tr>
<th>Category*</th>
<th>Citation of document with indication where appropriate of the relevant passages</th>
<th>Relevant to claim No</th>
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<tr>
<td>Y</td>
<td>US 2006/0090375 A1 (CHEN) 4 May 2006 (04 05 2006) entire document especially para 0005 fig 1 14</td>
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