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(54) **AUDIBLE FOOTWEAR BRUSH**

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(57) **ABSTRACT**

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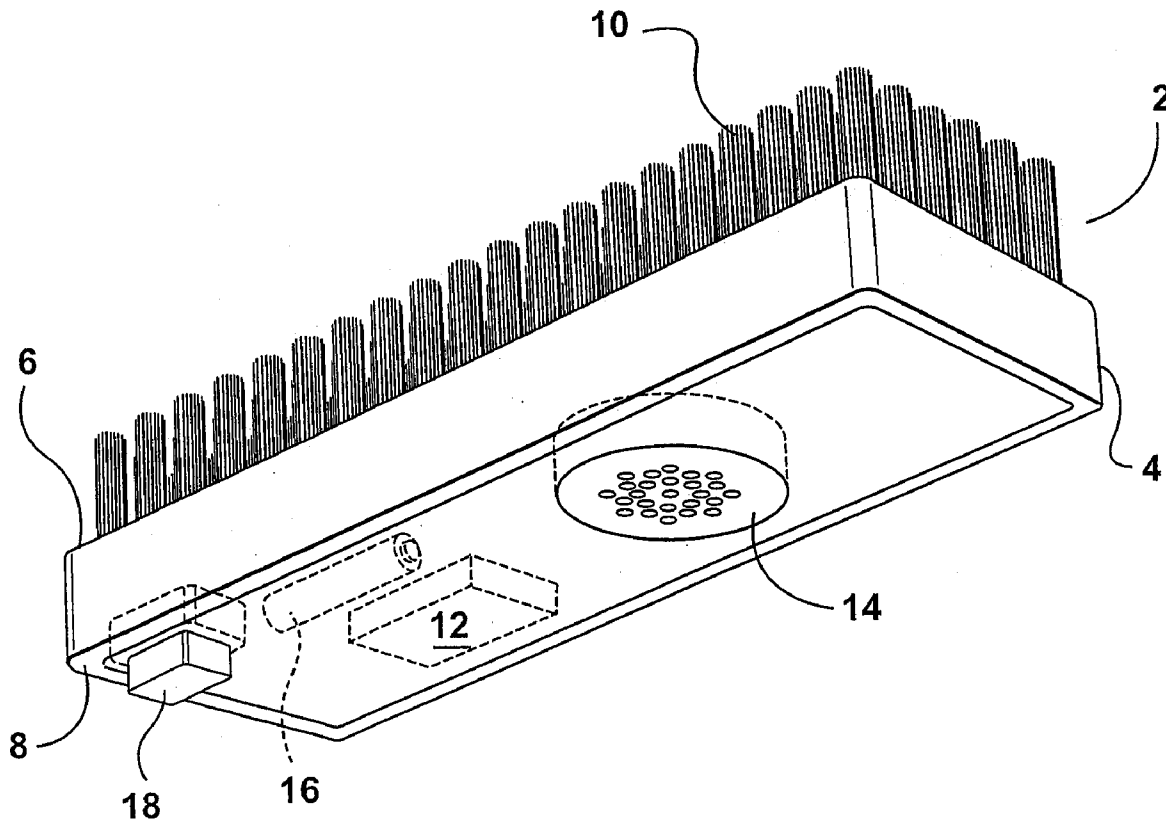
An audible footwear brush incorporates sound producing means, including an audio chip, a speaker, an electrical source, and an activation button. An audible footwear brush assembly comprises an audible footwear brush and a brush receptacle. The receptacle is mountable on a vehicle or other support surface. The brush receptacle is a channel shaped metal extrusion, preferably aluminum, with removable end-plates. The extrusion is shaped to form a slot positioned above the lower surface of the extrusion, for insertion of the footwear brush. The extrusion may also provide an outer slot for insertion of a display panel. In use, an activation button is depressed upon pressure from a boot placed on the brush, causing playback of a pre-recorded sound until pressure is released.

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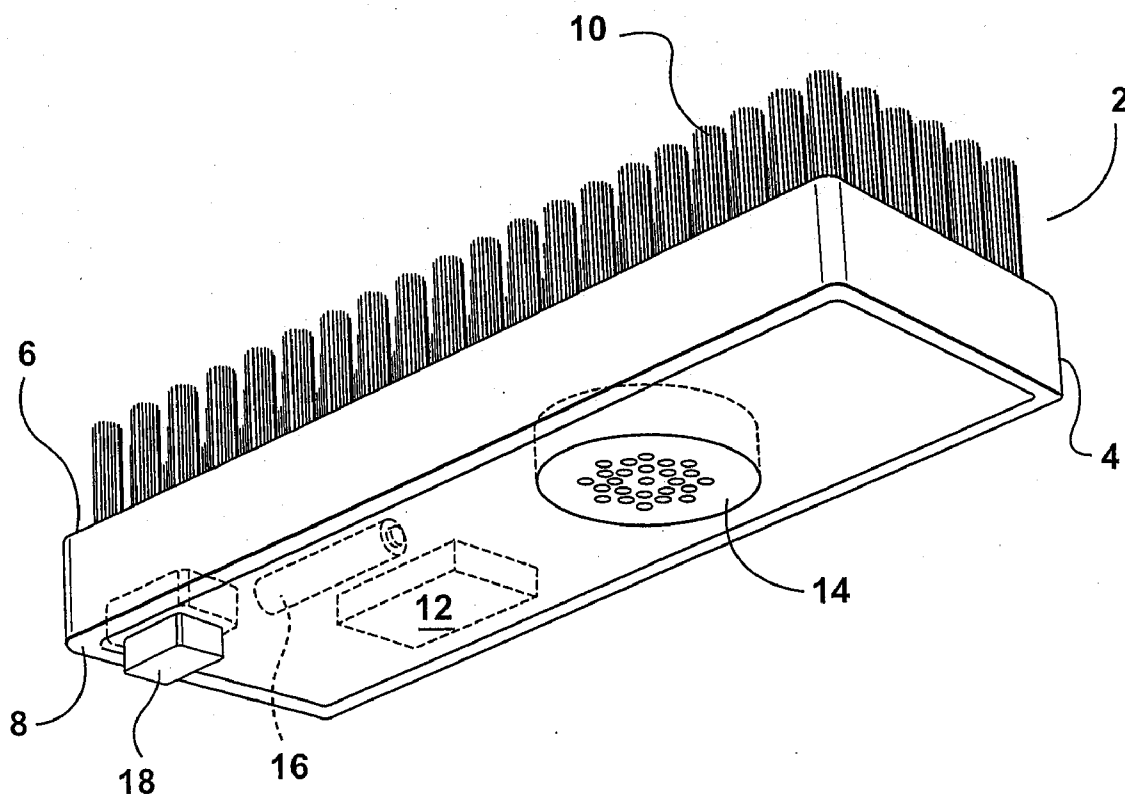


FIG. 1

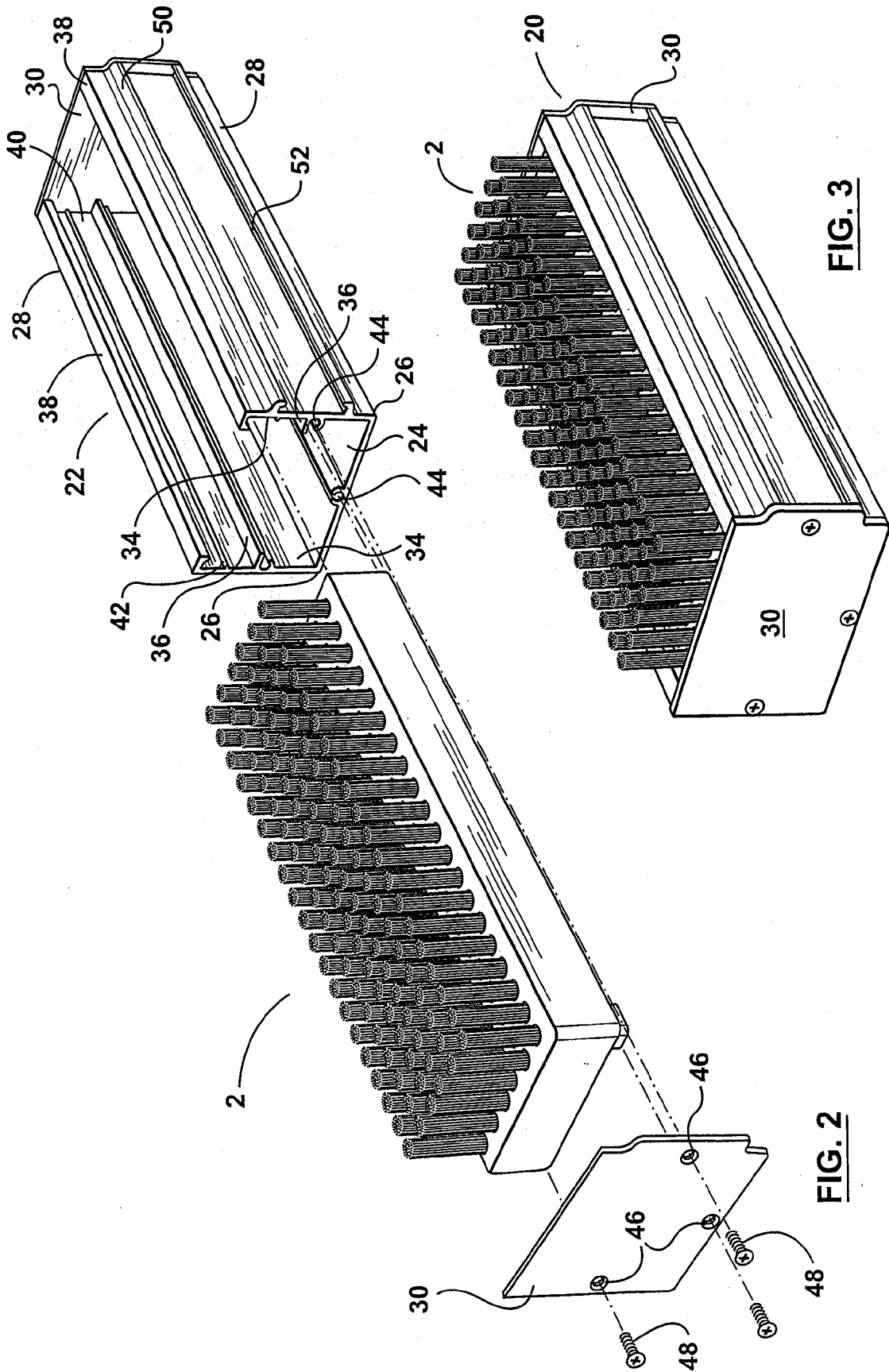


FIG. 3

FIG. 2

AUDIBLE FOOTWEAR BRUSH

FIELD OF THE INVENTION

[0001] The present invention relates to footwear brushes. In particular, the present invention relates to a footwear brush having a user activated sound producing module.

BACKGROUND OF THE INVENTION

[0002] It is known to provide footwear brushes. For example, U.S. Pat. No. 6,301,739 issued Oct. 16, 2001 to Cazaux teaches a shoe cleaning device for a vehicle. In Cazaux, a tray for receiving a wearer's shoe is lined with abrasive material and is mountable on a vehicle. A motorized gear assembly extends and retracts the tray. Cazaux does not teach activation of an audio chip upon use of the shoe cleaning device.

[0003] It is also known to provide a toothbrush having an audio component. For example, U.S. Pat. No. 4,866,807 issued Sep. 19, 2006 to Kreit et al. provides a toothbrush having a detachable head. The head incorporates a sound producing module having a pushbutton, a speaker, a digital sound generator and a battery. Depression of the pushbutton produces a tune.

[0004] In U.S. Pat. No. 5,864,288 issued Jan. 26, 1999 to Hogan, a toothbrush holder is provided with circuitry such that removal of a toothbrush from the holder will activate a sound producing device. The sound producing device may comprise either a pre-recorded audio chip, or a recordable audio chip.

While there are also several other prior art patents in the field of audible toothbrushes, none of the prior art appears to contemplate use of an audio component in a footwear brush.

[0005] It is an object of the present invention to provide a footwear brush for cleaning footwear which entertains or educates the user, during use, through playback of audio recordings. It is a further object of the present invention to provide such a footwear brush which is mountable on a vehicle or other support surface, thereby permitting convenient footwear cleaning use, without handling by the user.

SUMMARY OF THE INVENTION

[0006] According to one aspect of the present invention, there is provided an audible footwear brush having a base with upper and lower surfaces, a plurality of bristles projecting outwardly from the upper surface, and sound producing means. The sound producing means may include an audio chip, a speaker, an electrical source, and an activation button.

[0007] In a preferred embodiment of the invention, the speaker may be located on the lower surface of the base. In another embodiment, the speaker may be located on the upper surface of the base.

[0008] According to another of its aspects, there is provided an audible footwear brush assembly having a footwear brush with a base having opposed ends, opposed sides, an upper surface, a lower surface, bristles projecting from the upper surface; a brush receptacle for removable insertion therein of the audible footwear brush, the receptacle attachable to a support surface; and sound producing means located on the lower surface of the footwear brush.

[0009] In one embodiment of the assembly of the invention, the brush receptacle may have a metal extrusion having a generally planar lower surface with opposed longitudinal edges, and opposed walls extending upwardly from corre-

sponding longitudinal edges to form a channel; two endplates, each releasably attachable to a corresponding opposed end of the extrusion; and means for releasably attaching the endplates to the extrusion.

[0010] In a preferred embodiment of the invention, the metal of the receptacle extrusion is aluminum. In another embodiment, the sound producing module may be located in the receptacle.

[0011] In the preferred embodiment of the assembly of the invention, the inner side of each opposed wall has a medial lateral projection extending parallel to the lower surface along the length of the wall at a medial position, and an upper lateral projection extending parallel to the lower surface along the length of the wall at a position distal to the lower surface, the medial and upper lateral projections defining a slot for removable insertion therein of the audible footwear brush. The inner side of each opposed wall may also have a convex retaining projection extending parallel to the lower surface along the length of the wall at a position between the medial and upper lateral projections; the extent of projection of each retaining projection being less than the extent of projection of either the medial or upper lateral projections.

[0012] In one embodiment, the means for releasably attaching the endplates further comprises at least one fastener receiving receptacle on each end of the lower surface and each end of the opposed walls, a plurality of openings in each of the endplates positioned to correspond to the fastener receiving receptacles, and a plurality of fasteners, each for releasable insertion through an opening in an endplate to a corresponding fastener receiving receptacle.

[0013] In one embodiment of the assembly of the invention, an upper longitudinal projection may extend along the outer surface of one wall, outwardly and downwardly, to form an upper lip, a lower longitudinal projection may extend along the outer surface of the one wall, outwardly and upwardly, to form a lower lip, and a rectangular panel may be releasably insertable along the outer surface of the one wall between the upper lip and lower lip, the panel adapted to display information printed, embossed or otherwise presented thereon. The panel may be made of plastic, metal or cardboard.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] The invention will be better understood when consideration is given to the following detailed description thereof. Such description makes reference to the annexed drawings wherein:

[0015] FIG. 1 is a bottom perspective view of the brush of the invention, showing the sound producing module incorporated into the base of the brush;

[0016] FIG. 2 is an exploded view of a preferred embodiment of the assembly of the invention;

[0017] FIG. 3 is a perspective view of a preferred embodiment of the assembly of the invention.

[0018] The same reference numerals refer to the same parts throughout the various figures.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0019] As shown in FIG. 1, the present invention provides an audible footwear brush 2 having a base 4 having upper and lower surfaces (6, 8), a plurality of bristles 10 projecting outwardly from the upper surface 6 of the base, and sound producing means. The sound producing means may include a

module comprising an audio chip **12**, a speaker **14**, an electrical source **16**, and an activation button **18**.

[0020] As depicted in FIGS. **2** and **3**, there is also provided an audible footwear brush assembly. The assembly may include an audible footwear brush **2** and a brush receptacle **20** for housing the footwear brush. The brush receptacle of the assembly may be mountable on a vehicle or other support surface to permit hands-free use. The receptacle may be mounted on a vehicle, for example, by welding or fastening with screws or bolts.

[0021] The brush receptacle component of the assembly of the invention comprises an aluminum extrusion **22** having a generally planar lower surface **24** with opposed longitudinal edges **26**; opposed walls **28** extending upwardly from corresponding opposed longitudinal edges to form a channel; a pair of opposed endplates **30** releasably attachable to corresponding opposed ends of the extrusion; and means for releasably attaching the endplates to the extrusion.

[0022] The inner sides **34** of the opposed walls **28** may further comprise a medial lateral projection **36** extending parallel to the lower surface **24** along the length of the wall at a medial position, and an upper lateral projection **38** extending parallel to the lower surface along the length of the wall at a position distal to the lower surface.

[0023] The medial and upper lateral projections of the inner sides of the opposed walls define a slot **40** for the removable insertion therein of the footwear brush of the assembly.

[0024] The inner sides **34** of the opposed walls **28** may further comprise a convex retaining projection **42** extending parallel to the lower surface **24** along the length of the wall at a position between the medial and upper lateral projections (**36**, **38**). The extent of projection of the retaining projection should be less than the extent of projection of either the medial or upper lateral projections. The medial and upper retaining projections (**36**, **38**) are adapted to retain the footwear brush **2** in the slot **40** through friction fit, while permitting sliding along the length of the sides of the footwear brush when a user inserts or removes the brush.

[0025] The means for releasably attaching the endplates **30** may further comprise at least one fastener receiving receptacle **44** on each end of the lower surface **24** and each end of the opposed walls **28**, a plurality of openings **46** in each endplate positioned to correspond to the fastener receiving receptacles, and a plurality of fasteners **48**, each for releasable insertion through an opening **46** in an endplate to a corresponding fastener receiving receptacle **44** in an end of the lower surface or the opposed walls.

[0026] An upper longitudinal projection **50** may extend along the outer surface of at least one wall, outwardly and downwardly, to form an upper lip. A lower longitudinal projection **52** may extend along the outer surface of the at least one wall, outwardly and upwardly, to form a lower lip disposed below the upper lip. A rectangular panel (not shown) may be releasably insertable between the upper lip and lower lip along the outer surface of the at least one wall, the panel adaptable to display information printed, embossed or otherwise presented thereon. The panel may be manufactured of thin plastic, metal, cardboard or other material permitting the display of information such as advertisements, trademarks, or usage instructions.

[0027] In the preferred embodiment of the invention shown in FIG. **1**, the sound producing module may form the base of the footwear cleaning brush. Alternatively, the sound producing module may be a separate component housed within the

base. In still another embodiment, the sound producing module may be housed within the lower surface of the receptacle of the footwear brush assembly.

[0028] Each of the audio chip, speaker, electrical source, and activation button components of the sound producing module is well known in the art and has been incorporated into various devices, including greeting cards, toys and games. The pre-recorded message generated by the audio chip may serve a variety of purposes. It may serve an educational purpose, for example by playing a message encouraging the cleaning of footwear for safety or hygiene purposes. Alternatively, it may serve an entertainment purpose by playing a humorous sound or a musical tune. The audio chip may be adapted to randomly or sequentially play one of a variety of possible messages.

[0029] The source of electrical power for operation of the sound producing module may be provided in a variety of forms. Rechargeable or disposable batteries may be used, or, in the embodiment having a sound producing module housed in the receptacle of the assembly, the footwear brush assembly may be wired into the electrical circuitry of the vehicle on which it may be mounted. The assembly may also be adapted to incorporate a solar panel power source.

[0030] As shown in FIG. **1**, in the preferred embodiment, the speaker **12** of the sound producing module is positioned on the lower surface **8** of the footwear brush base to project sound downwardly from the base **4**, in order to reduce entry of dirt and debris cleaned from a user's footwear. Alternatively, the speaker may be positioned on the upper surface **6** of the base **4**, or in the lower surface **24** of the receptacle, to play sound upwardly for improved audibility. The endplates **30** may also be provided with additional openings to further improve audibility.

[0031] In use, the audible footwear brush may be used while held in the user's hand or placed on the ground and stepped upon. Alternatively, the audible footwear brush assembly may be mounted on a vehicle or other support surface to permit a user to conveniently clean footwear without having to handle the assembly.

[0032] Upon depression of the activation button **16**, either by pressure exerted by the user's hand, in the case of manual use of the footwear brush, or by downward pressure against a support surface or against the medial lateral projection **36** of one of the opposed walls of the receptacle, caused by placement of the user's foot on the brush, in the case of the footwear brush assembly, the sound producing module may be activated. The pre-recorded sound or voice may be then played through the speaker of the sound producing module until pressure on the activation button is released upon removal of the hand, in the manual use case, or the foot, in the hands-free case.

[0033] Throughout this specification, unless the context requires otherwise, the word "comprise", or variations thereof such as "comprises" or "comprising", or the term "includes", or variations thereof, or the term "having", or variations thereof, will be understood to imply the inclusion of a stated element or integer or group of elements or integers but not the exclusion of any other element or integer or group of elements or integers. In this regard, in construing the claim scope, an embodiment where one or more features is added to any of the claims is to be regarded as within the scope of the invention given that the essential features of the invention as claimed are included in such an embodiment.

[0034] Those skilled in the art will appreciate that the invention described herein is susceptible to variations and modifications other than those specifically described. It is to be understood that the invention includes all such variations and modifications which fall within its spirit and scope.

- 1. An audible footwear brush comprising:
 - (a) a footwear brush comprising a base having upper and lower surfaces, a plurality of bristles projecting outwardly from the upper surface; and
 - (b) sound producing means.
- 2. The audible footwear brush of claim 1, wherein the sound producing means comprises an audio chip, a speaker, an electrical source, and an activation button.
- 3. The audible footwear brush of claim 2, wherein the speaker is disposed on the lower surface of the base.
- 4. The audible footwear brush of claim 2, wherein the speaker is disposed on the upper surface of the base.
- 5. An audible footwear brush assembly comprising:
 - (a) a footwear brush comprising a base having opposed ends, opposed sides, an upper surface, and a lower surface, wherein a plurality of bristles projects outwardly from the upper surface;
 - (b) a brush receptacle for removable insertion therein of the audible footwear brush, the receptacle attachable to a support surface; and
 - (c) sound producing means disposed on the lower surface of the footwear brush.
- 6. The audible footwear brush assembly of claim 5, wherein the sound producing means comprises an audio chip, a speaker, an electrical source, and an activation button.
- 7. The audible footwear brush assembly of claim 6, wherein the brush receptacle comprises:
 - (a) a metal extrusion comprising a generally planar lower surface having opposed longitudinal edges, and opposed walls extending upwardly from corresponding longitudinal edges to form a channel;
 - (b) two endplates, each releasably attachable to a corresponding opposed end of the extrusion; and
 - (c) means for releasably attaching the endplates to the extrusion.
- 8. The audible footwear brush assembly of claim 7, wherein the metal is aluminum.
- 9. The audible footwear brush assembly of claim 8, wherein:

- (a) the inner side of each opposed wall further comprises a medial lateral projection extending parallel to the lower surface along the length of the wall at a medial position and an upper lateral projection extending parallel to the lower surface along the length of the wall at a position distal to the lower surface, wherein the medial and upper lateral projections define a slot for removable insertion therein of the audible footwear brush.
- 10. The audible footwear brush assembly of claim 9, wherein:
 - (a) the inner side of each opposed wall further comprises a convex retaining projection extending parallel to the lower surface along the length of the wall at a position between the medial and upper lateral projections;
 - (b) wherein the extent of projection of each retaining projection is less than the extent of projection of either the medial or upper lateral projections.
- 11. The audible footwear brush assembly of claim 7, wherein the means for releasably attaching the endplates further comprises:
 - (a) at least one fastener receiving receptacle on each end of the lower surface and each end of the opposed walls;
 - (b) a plurality of openings in each of the endplates positioned to correspond to the fastener receiving receptacles; and
 - (c) a plurality of fasteners, each for releasable insertion through an opening in the endplates to a corresponding fastener receiving receptacle.
- 12. The audible footwear brush assembly of claim 11, further comprising:
 - (a) an upper longitudinal projection extending along the outer surface of at least one wall, outwardly and downwardly, to form an upper lip;
 - (b) a lower longitudinal projection extending along the outer surface of the at least one wall, outwardly and upwardly, to form a lower lip; and
 - (c) a rectangular panel releasably insertable along the outer surface of the at least one wall between the upper lip and lower lip, the panel adapted to display information printed, embossed or otherwise presented thereon.
- 13. The audible footwear brush assembly of claim 12, wherein the panel is comprised of a material selected from the group consisting of plastic, metal or cardboard.

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