Aug. 1, 1961 J. F. SHUMAKER 2,994,254

PLASTIC SIDEWALK

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FIG. 1

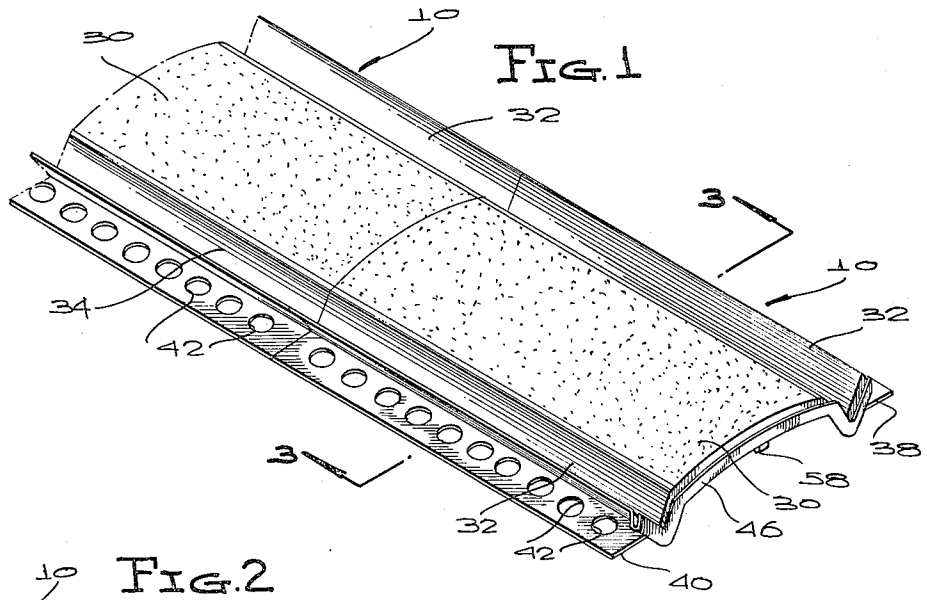
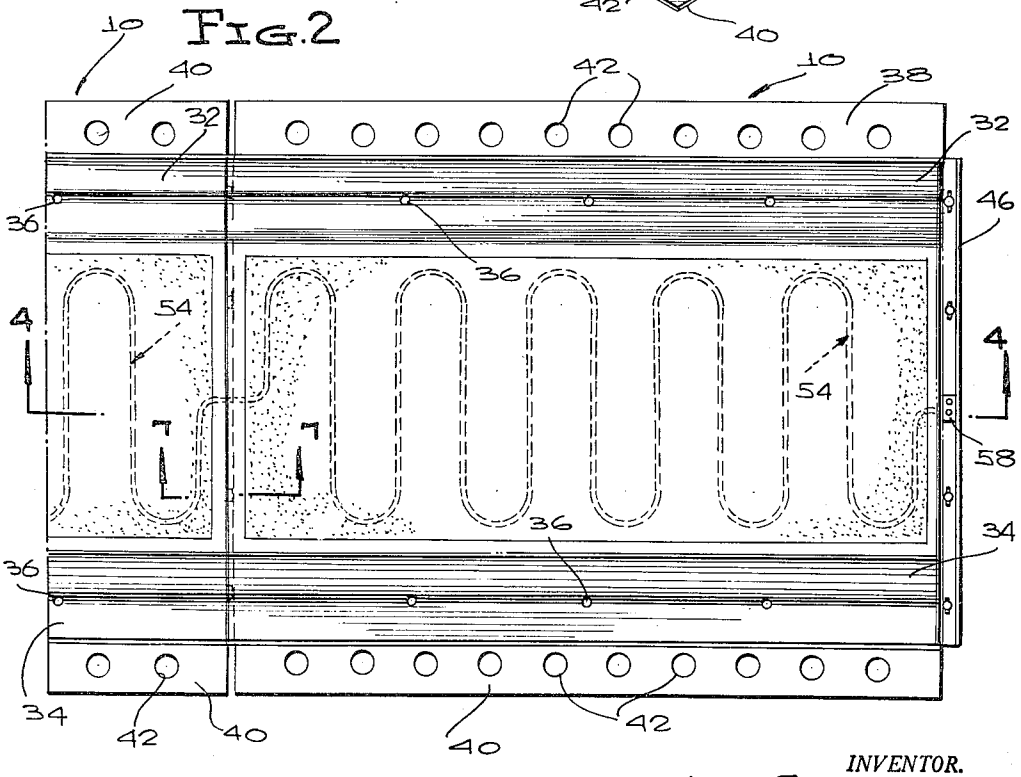


FIG. 2



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FIG. 3

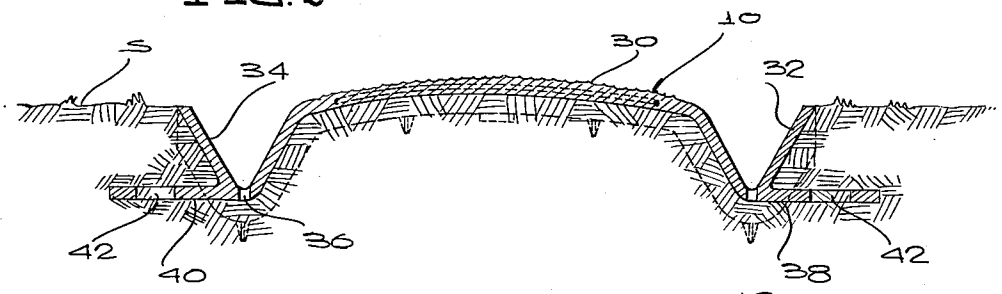


FIG. 4

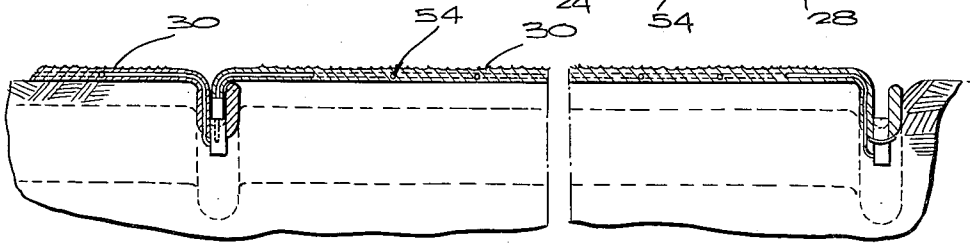


FIG. 6

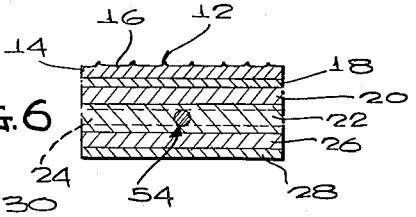


FIG. 5

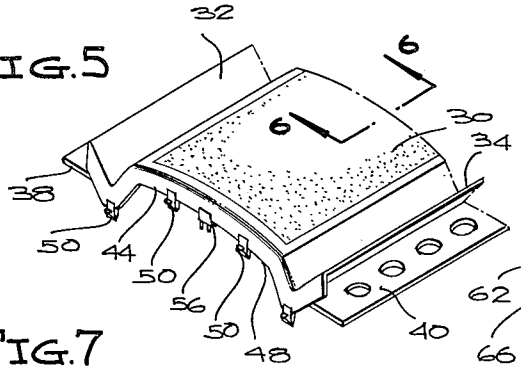


FIG. 8

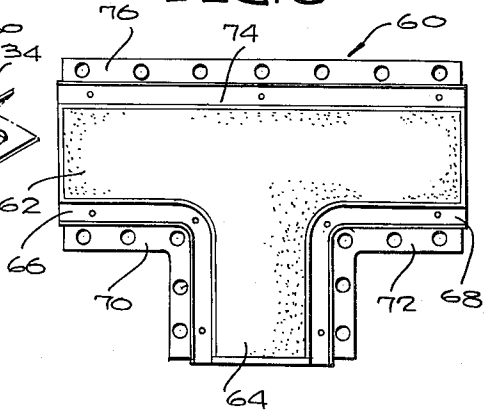
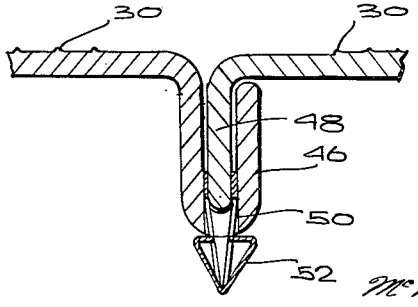


FIG. 7



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FIG. 9

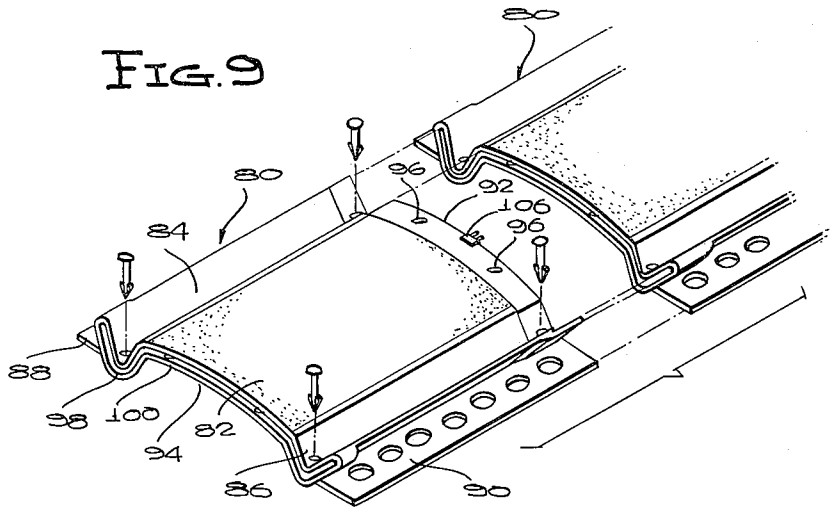


FIG. 10

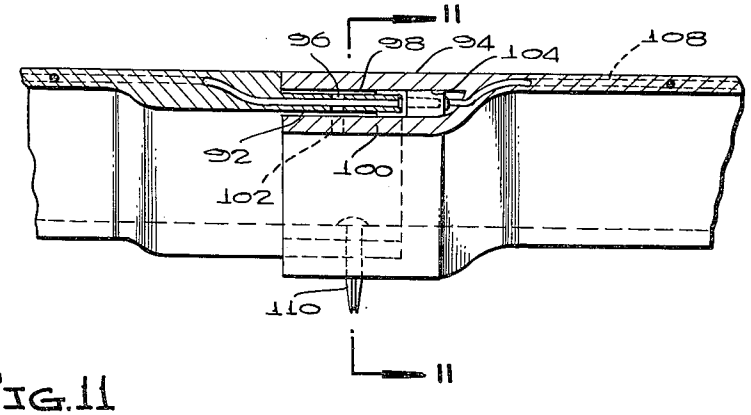
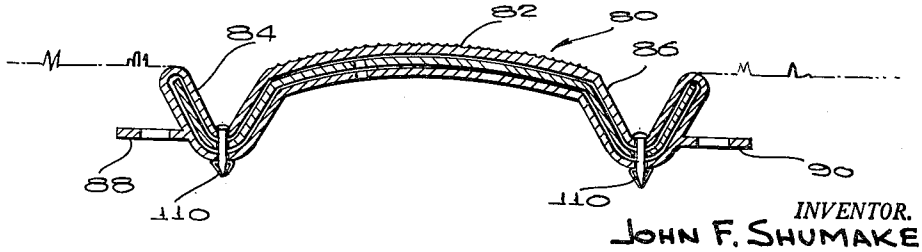


FIG. 11



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PLASTIC SIDEWALK

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3 Claims. (Cl. 94—26)

This invention relates generally to an improved sidewalk construction.

Present-day sidewalks are generally constructed from poured concrete, the pouring of which necessitating extensive preparation of the terrain and subgrade, and the concrete sidewalk unless properly reinforced will generally deteriorate due to changing weather conditions in relatively harsh climates, for example, are relatively expensive to install due to the cost of materials utilized and the amount of time and labor required during their installation.

A primary object of invention is to provide a novel plastic sidewalk incorporating a plurality of sidewalk sections molded from a suitable plastic material, said sections incorporating means whereby adjacent sections may be secured in linear or intersecting relationship, further including means for accommodating drainage of water from the crown or walking-surface portion of the sidewalk, and further including anchor flanges on opposite side edges thereof for receiving adjacent sod or the like thereon, wherein the sidewalk is substantially retained against displacement.

Another object of invention in conformance with that set forth is to provide in a plastic sidewalk of the character involved means for heating the various sidewalk sections for preventing the accumulation of ice and snow thereon.

And yet another object of invention in conformance with that set forth is to provide in combination a plastic sidewalk section including a radiation detection medium embedded therein for the purpose of visually apprising individuals of the presence of radio-active material.

A still further object of invention in conformance with that set forth is to provide in a plastic sidewalk of the character involved, plastic sidewalk sections which are readily and economically manufactured, easily installed and maintained, and highly satisfactory and practical for the purpose intended.

These together with other objects and advantages which will subsequently become apparent reside in the details of construction and operations 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 a pair of connected plastic sidewalk sections of the invention;

FIGURE 2 is a top plan view of a pair of connected sidewalk sections, one of which being broken away;

FIGURE 3 is a transverse section taken substantially on the plane of line 3—3 of FIGURE 1;

FIGURE 4 is a longitudinal section taken substantially on the plane of line 4—4 of FIGURE 2, an intermediate portion thereof being broken away;

FIGURE 5 is a fragmentary perspective view of one of the sidewalk sections looking at the end thereof opposite that shown in FIGURE 1;

FIGURE 6 is an enlarged fragmentary section taken substantially on the plane of line 6—6 of FIGURE 5, showing a typical lamination used in the construction of the sidewalk sections of the invention;

FIGURE 7 is an enlarged fragmentary section taken substantially on the plane of line 7—7 of FIGURE 2.

FIGURE 8 is a plan view, on a reduced scale, showing an adapter sidewalk section utilized at intersecting portions of a sidewalk formed when utilizing the invention;

FIGURE 9 is an exploded perspective view showing another embodiment of the novel sidewalk;

FIGURE 10 is an enlarged fragmentary vertical section taken substantially on the longitudinal axis of the pair of sidewalk sections of FIGURE 9 when the same are assembled in linear relationship; and

FIGURE 11 is a sectional view, on a reduced scale, taken substantially on the plane of line 11—11 of FIGURE 10.

Referring to the drawings in detail, considering FIGURES 1 through 7, a plurality of plastic sidewalk sections are indicated generally at **10**, each of said sections being formed from a readily moldable material generally defined as a "Fiberglas" composition incorporating thermosetting resins providing a relatively stable sidewalk section, which when formed undergoes chemical changes due to the combination of heat and pressure accordingly rendering the same to be of a relatively permanent nature. Considering FIGURE 6, for example, a typical laminated section of the plastic utilized to form the sidewalk sections is shown, said plastic section being indicated generally at **12** and incorporating a top layer of material **14** of a suitable plastic, for example, the upper surface **16** of which being roughened and providing a friction surface to prevent one from accidentally slipping while walking over the plastic sidewalk. Juxtaposed beneath the material **14** are a plurality of layers of material, the next immediate layer being a resin material **18**, then a layer of glass cloth **20**, next a resin material **22** having extending therethrough a suitable electrical heating coil **24** and juxtaposed therebeneath a layer of glass cloth **26** and an underlying layer of a suitable resin **28**. The material is laminated in its raw state in a suitable mold and then with the application of heat and if necessary pressure, a predetermined shape is formed which is relatively stable and satisfactory to provide a sidewalk of a relatively permanent character. Any suitable plastic material of the desired wearing qualities and adaptability to being formed may be utilized in the invention.

Each of the plastic sidewalk sections **10** incorporate a substantially elongated walk surface panel **30**, the upper surface of which being suitably roughened to form a friction surface. The panel **30** incorporates, if desired, a suitable transverse arcuate crown, see FIGURE 3, to insure that water will be pitched off the walking surface **30**. Extending longitudinally of the walking-surface panel **30** for the entire length thereof are a pair of upwardly opening V-cross sectioned gutters **32** and **34**, incorporating through the apex portion thereof transverse apertures **36** facilitating the drainage of water through the gutter. The sidewalk formed by utilizing the panel sidewalk sections will have a suitable grade, wherein water accumulating in the gutters **32** and **34** will suitably drain to a desired collecting area, for example, the street gutter. Extending laterally and integrally from the gutters **32** and **34** and outwardly away from the walking-surface panel **30** are

anchoring flanges 38 and 40, respectively, which incorporate transversely therethrough in longitudinally spaced relationship apertures 42 facilitating the egress of the roots of grass therethrough for substantially anchoring the sidewalk sections on a support surface S.

Each of the sections 10 incorporate on opposite ends thereof complementary male and female connecting portions 44 and 46, see FIGURES 5 and 1, respectively. The male connecting portion 44 comprises a transverse depending flange 48 conforming to the cross sectional profile of the sidewalk sections which includes the walking-surface panel 30 and the drain gutters 32 and 34. The female connecting portion 46 comprises the depending upwardly opening reverse bend flange substantially normal to the general plane of the walking-surface panel 30 and having a U-shaped cross section receiving therin the flanges 48. The connecting portion 46 incorporates transversely through the lower surface thereof suitable aperture portions for receiving therethrough connecting portions 50 integral with the flanges 48 and including a resilient displaceable end portion 52 insuring the locking of the male flanges 48 in the female connecting portion 46, see FIGURE 7.

If desired, each of the sidewalk sections may incorporate therein a suitable resistance type heating coil 54, opposite ends of which terminating in the male connector 56 integral on the flange 48 for receipt in a female connector 58 depending from the female connecting portion 46. The terminal end of the sidewalk formed from the plastic sidewalk sections may be connected to a suitable source of current for applying a predetermined heat to the sidewalk accordingly melting residual ice and snow thereon wherein the melted ice or snow will drain in the gutters 32 and 34.

When laying a sidewalk incorporating a plurality of the novel plastic sidewalk sections, it is only necessary to dig into the terrain troughs of sufficient length and depth to accommodate the troughts and anchoring flanges of the sidewalk sections, and a transverse groove to accommodate the cooperating or complementary male and female connecting portions. The sod is stripped back for this purpose, and after a sidewalk incorporating the plastic sections is in place, the grade is established from the upper edge of the troughs 32 and 34 as seen in FIGURE 3. The roots of grass growing in the support surface S will penetrate through the apertures 42 in the anchoring flanges 38 and 40 siding in the retention of the sidewalk in a relatively fixed position.

Considering FIGURE 8, indicated generally at 60 is a T-shaped sidewalk panel section incorporating an elongated walking-surface panel portion 62 intersected by a walking-surface panel portion 64. The walking-surface panel portions 62 and 64 incorporate at the intersection thereof L-shaped gutter portions 66 and 68 of a character similar to those on sidewalk panel sections 10, and extending laterally from the lower edge of the gutters 66 and 68 are suitable L-shaped anchor flanges 70 and 72, respectively, utilized for the same purpose and functioning in the same manner as the anchoring flanges 38 and 40 of sidewalk panel section 10. Extending longitudinally of the walking-surface panel 62 opposite the gutters 66 and 68 is a longitudinally extending gutter 74 incorporating in laterally extending relationship from the lower apex portion thereof a suitable anchor flange 76. The sidewalk panel section 60 cooperates with a plurality of the sidewalk panel sections 10 to form a complete plastic sidewalk.

Considering FIGURES 9 through 11, a plurality of modified plastic sidewalk sections are indicated generally at 80, each of which incorporating an intermediate longitudinally extending walk-surface panel portion 82, having integral at opposite side edge portions V-shaped upwardly opening troughs 84 and 86. The walking-surface panel portion 82 may have a suitable transverse crown, see

FIGURE 11, to facilitate the drainage of water therefrom. Furthermore, the upper surface of the walking-surface panel portion 82 may be suitably roughened to provide a friction-surface to prevent an individual from slipping thereon. Extending laterally and longitudinally from the apex portion of the troughs 84 and 86 are suitable transversely apertured anchor flanges 88 and 90, respectively, see FIGURE 11. The sidewalk sections 80 are utilized in the identical manner as those of FIGURES 1 through 7, and incorporated at opposite ends thereof are complementary male and female connecting portions 92 and 94.

The male flange 92 extends transversely of one end of the walking surface of panel portion 82 and the troughs 84 and 86, being disposed in substantial parallel offset relationship relative to the general plane thereof. The male flange 92 incorporates transverse apertures 96 therethrough. The female connecting portion 94 comprises an integral transverse socket portion 98 conforming to the male flange 92, said socket portion 98 being formed by an underlying flange 100 which incorporates therethrough transverse apertures 102 which align with the apertures 96 to facilitate drainage of moisture therethrough. Incorporated in the socket portion 98 is a female connector 104 engageable with a male connector 106 extending rearwardly from the male connecting flanges 92. The connectors 104 and 106 are suitably secured to a resistance type electric heating coil 108. The sidewalk sections 80 are retained against longitudinal displacement with respect to each other by means of suitable connectors 110 extending through transverse aligned apertures in the trough portions 84 and 86 in the respective sidewalk sections 80.

The foregoing is considered as illustrative only of the principles of the invention. Further, 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 and operation 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 is:

1. A plastic sidewalk section comprising a horizontally disposed panel having parallel side edges and an end edge extending between each of the complemental ends of said side edges, the upper face of said panel being provided throughout with a walk surface, a V-shaped gutter arranged outwardly of each of said panel side edges so that the apex base is below the adjacent panel side edge with one of the legs extending along the adjacent panel side edge from one end edge to the other end edge of said panel, a horizontally disposed anchoring flange positioned exteriorly of and adjacent the other of the legs of each of said gutters and extending along the base of each of said gutters from one end edge of the other end edge of said panel and adapted to rest upon a supporting surface, a male connector embodying a vertically disposed plate extending wholly along one of the end edges of said panel and of said gutters, and a female U-shaped connector extending wholly along the other of the end edges of said panel and of said gutters and adapted to receive a male connector of an adjacent walk section when at least two walk sections are laid in end to end relation.

2. The sidewalk section according to claim 1 wherein said panel is upwardly bowed from one side edge to the other side edge thereof.

3. The sidewalk section according to claim 1 wherein each of said anchoring panels is provided with a plurality of spaced apertures extending therealong for passage of grass roots therethrough, and the bight of said female connector is provided with spaced aperatures for extension of fastening elements therethrough.

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