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(54) **ACCESSORY ROOF PANEL AND HANGER**

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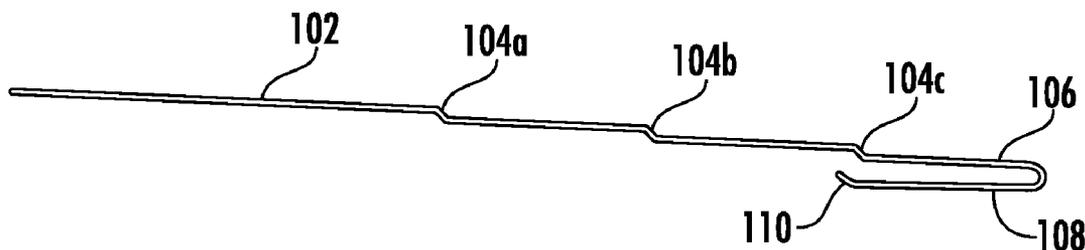
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(57) **ABSTRACT**

An accessory roof panel/hanger for a gutter protector system is provided. A hanger adapted to couple to a roof and gutter protector to be secured on top of a rain gutter includes: a generally horizontal elongate member adapted to couple to both a roof and gutter protector, the elongate member further comprising a hanger upper lateral at a distal end and a hanger lower lateral folded back under the hanger upper lateral at the distal end, wherein the hanger upper lateral and the hanger lower lateral are integrally formed with the elongate member, and wherein the upper lateral and the hanger lower lateral are adapted to couple to a gutter protector there between; and an interlock channel defined within the upper lateral and the hanger lower lateral, wherein the interlock channel is adapted as a receiving area to receive and securely hold the gutter protector.



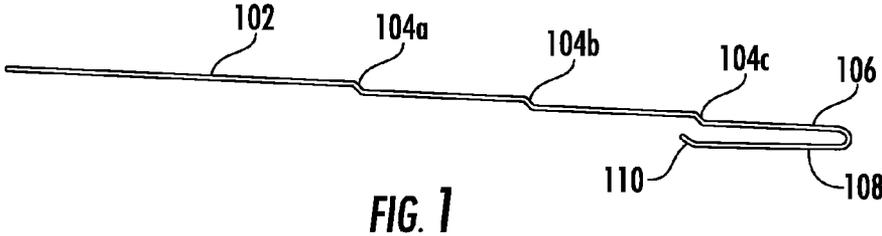


FIG. 1

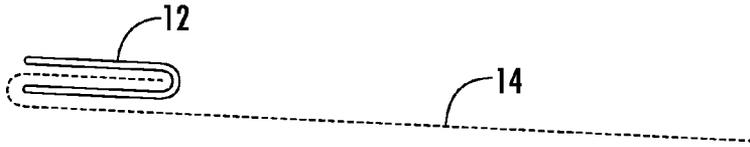


FIG. 2

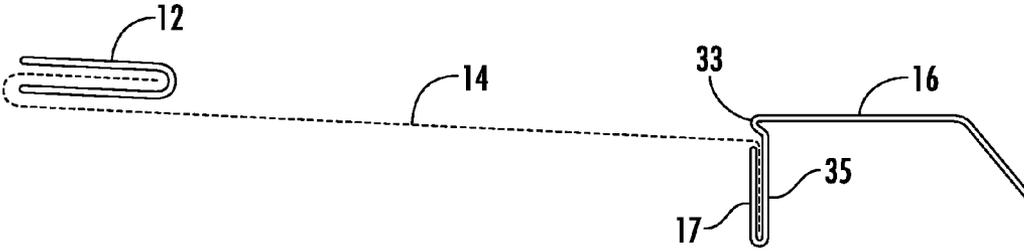


FIG. 3

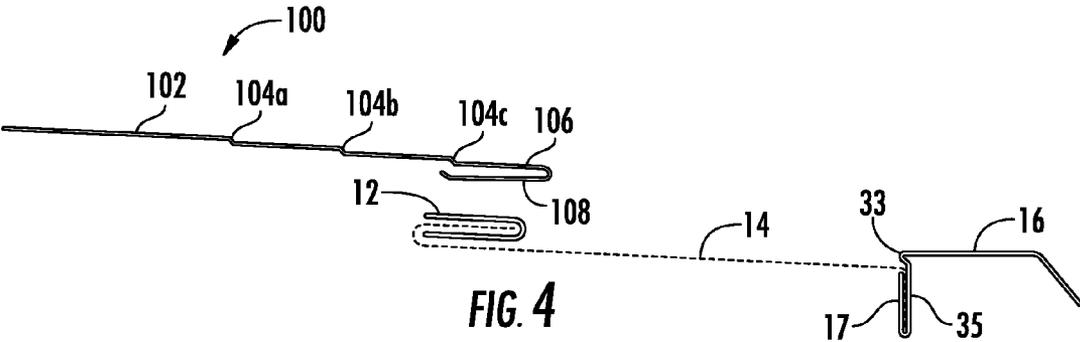
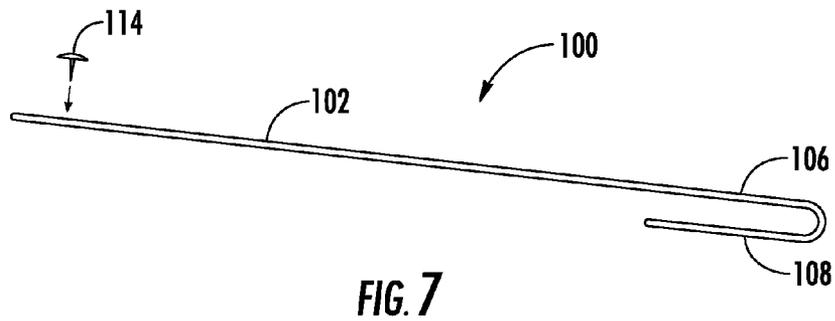
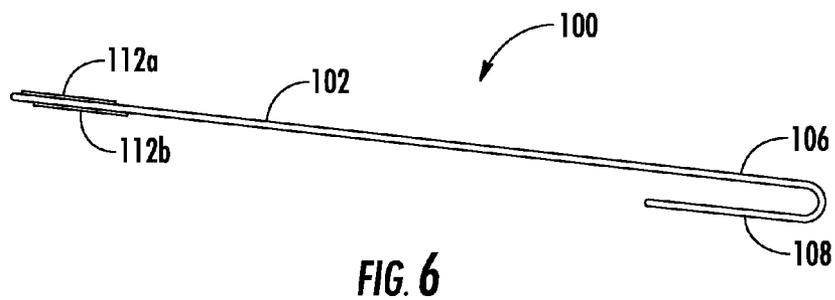
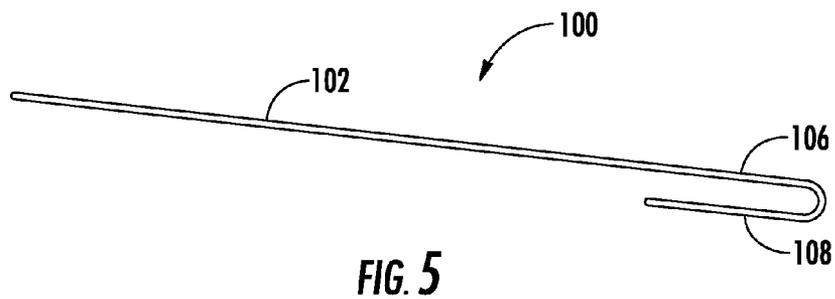


FIG. 4



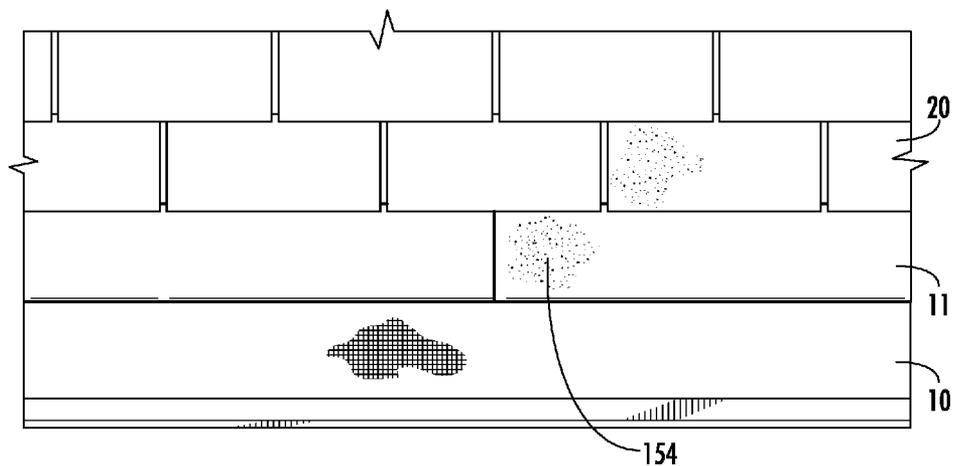


FIG. 10

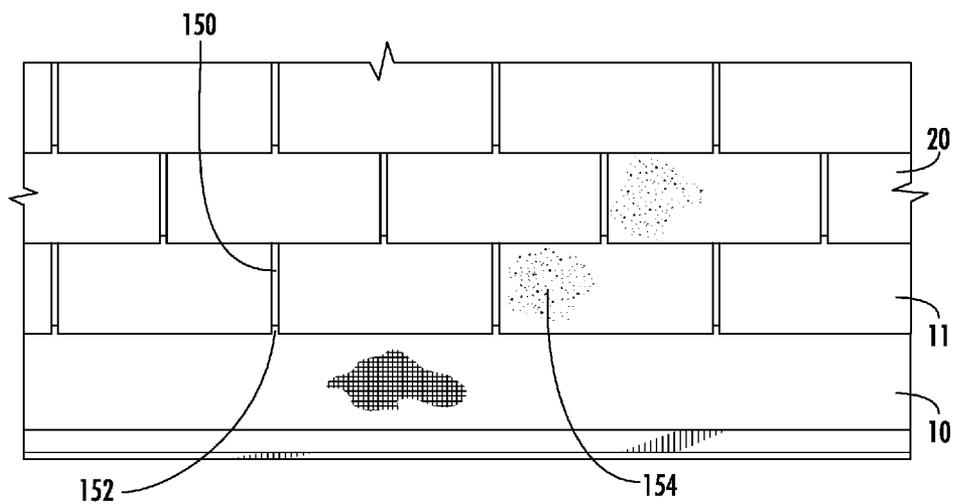


FIG. 11

ACCESSORY ROOF PANEL AND HANGER

CROSS-REFERENCE TO RELATED APPLICATION(S)

[0001] The present non-provisional patent application is a continuation-in-part of U.S. patent application Ser. No. 13/606,937, which is entitled "GUTTER PROTECTION SYSTEM", which was filed on Sep. 7, 2012, and which is incorporated in full by reference herein, and of U.S. patent application Ser. No. 13/748,175, which is entitled "GUTTER PROTECTION SYSTEM", which was filed on Jan. 23, 2013, and which is incorporated in full by reference herein.

FIELD OF THE INVENTION

[0002] The technology described herein relates generally to gutters for roofs and other structures, and covers, screens, protection systems, guards, debris eliminators, screen guards, debris shields, and the like, to be mounted upon such gutters. More specifically, this technology relates to an accessory roof panel and hanger for a gutter protection system that is configured to provide zero clogging of leafs, debris, and the like, and that utilizes no underlying structural support system and that utilizes no edges or areas in which debris can snag or restrict debris movement across its surface.

BACKGROUND OF THE INVENTION

[0003] Rain gutters are well-known structures found along roof eaves for diverting rainwater runoff. Such gutters are open and are known to become clogged because of debris accumulation over time. Many devices have been developed to overcome these deficiencies; however, these devices have been found also to have various shortcomings.

[0004] Related utility patents known in the art include the following:

- [0005]** U.S. Pat. No. 2,209,741, issued to Sullivan et al. on Feb. 17, 1939, discloses a roofing gutter and guard therefor.
- [0006]** U.S. Pat. No. 3,741,398, issued to Abramson on Jun. 26, 1973, discloses a roof gutter and protector.
- [0007]** U.S. Pat. No. 4,644,704, issued to Pedgonay on Feb. 24, 1987, discloses a rain gutter debris eliminator.
- [0008]** U.S. Pat. No. 4,750,300, issued to Winger, Jr. on Jun. 14, 1988, discloses a gutter screen guard.
- [0009]** U.S. Pat. No. 4,841,686 issued to Rees on Jun. 27, 1989, discloses a rain gutter assembly.
- [0010]** U.S. Pat. No. 4,907,318, issued to Ealer on Mar. 13, 1990, discloses a gutter screen.
- [0011]** U.S. Pat. No. 4,959,932, issued to Pfeifer on Oct. 2, 1990, discloses a rain gutter screen.
- [0012]** U.S. Pat. No. 5,072,551, issued to Manoogian, Jr. on Dec. 17, 1991, discloses a gutter guard.
- [0013]** U.S. Pat. No. 5,095,666, issued to Williams, Jr. on Mar. 17, 1992, discloses a device for protecting roof gutters.
- [0014]** U.S. Pat. No. 5,109,640, issued to Creson on May 5, 1992, discloses a screen for a rain gutter.
- [0015]** U.S. Pat. No. 5,271,192, issued to Nothum, Sr. et al. on Dec. 21, 1993, discloses a rain gutter screen.
- [0016]** U.S. Pat. No. 5,388,377, issued to Faulkner on Feb. 14, 1995, discloses a gutter assembly for roofs.
- [0017]** U.S. Pat. No. 5,406,754, issued to Cosby on Apr. 18, 1995, discloses a drain gutter debris guard and method of making.
- [0018]** U.S. Pat. No. 5,438,803, issued to Blizzard, Jr. on Aug. 8, 1995, discloses a rain gutter guard.

- [0019]** U.S. Pat. No. 5,555,680, issued to Sweers on Sep. 17, 1996, discloses a guard screen for a rain gutter having flanges for gripping the front lip of a gutter.
- [0020]** U.S. Pat. No. 5,619,825, issued to Lerony et al. on Apr. 15, 1997, discloses a gutter screen.
- [0021]** U.S. Pat. No. 5,813,173, issued to Way, Sr. on Sep. 29, 1998, discloses a gutter protector.
- [0022]** U.S. Pat. No. 5,842,311, issued to Morin on Dec. 1, 1998, discloses a gutter screen of cover.
- [0023]** U.S. Pat. No. 5,893,240, issued to Ealer, Sr. on Apr. 13, 1999, discloses a gutter screen.
- [0024]** U.S. Pat. No. 5,956,904, issued to Gentry on Sep. 28, 1999, discloses a gutter debris shield.
- [0025]** U.S. Pat. No. 6,016,31, issued to Lowrie, III on Jan. 25, 2000, discloses rain gutter devices.
- [0026]** U.S. Pat. No. 6,412,228, issued to Meckstroth on Jul. 2, 2002, discloses a leaf and debris deflecting cover device for a rain gutter.
- [0027]** U.S. Pat. No. 6,463,700, issued to Davis on Oct. 15, 2002, discloses a composite gutter guard.
- [0028]** U.S. Pat. No. 6,951,077, issued to Higginbotham on Oct. 4, 2005, discloses a non-clogging screen.
- [0029]** U.S. Pat. No. 7,627,991, issued to Feldhaus on Dec. 8, 2009, discloses a gutter debris cover
- [0030]** U.S. Pat. No. 7,913,458, issued to Higginbotham, on Mar. 29, 2011, discloses a self-cleaning gutter shield.
- [0031]** U.S. Pat. No. 8,006,438, issued to Higginbotham on Aug. 30, 2011, discloses a non-clogging screen.
- [0032]** Related non-patent literature known in the art includes the following:
- [0033]** LeafSout, online at <http://www.leafsout.com/>, discloses a gutter guard system.
- [0034]** SuperCleanGutterScreen, online at <http://www.supercleangutterscreen.com/>, discloses a gutter guard system.
- [0035]** LeafBlaster, online at <http://www.leafblaster.com/>, discloses a gutter guard system.
- [0036]** Mastershield, online at <http://www.gutterhelmet.com/gutters/mastershield-gutter-protection.cfm>, discloses a gutter guard system.
- [0037]** LeafFilter, online at <http://www.leaffilter.com/>, discloses a gutter guard system.
- [0038]** GutterGlove, online at <http://www.gutterglove.com/>, discloses a gutter guard system.
- [0039]** Diamond Back Gutter Covers, online at <http://www.diamondbackguttercovers.com/>, discloses a gutter guard system.
- [0040]** Rhino Gutter Guard, online at <http://www.rhinogutterguard.com/>, discloses a gutter guard system.
- [0041]** Leaf Solution, online at <http://www.leafsolution.com/>, discloses a gutter guard system.
- [0042]** The foregoing patent and other information reflect the state of the art of which the inventor is aware and are tendered with a view toward discharging the inventor's acknowledged duty of candor in disclosing information that may be pertinent to the patentability of the technology described herein. It is respectfully stipulated, however, that the foregoing patent and other information do not teach or render obvious, singly or when considered in combination, the inventor's claimed invention.

BRIEF SUMMARY OF THE INVENTION

[0043] In various exemplary embodiments, the technology described herein provides an accessory roof panel and hanger for a gutter protection system that is configured to provide

zero clogging of leaves, debris, and the like, and that utilizes no underlying structural support system and that utilizes no edges or areas in which debris can snag or restrict debris movement across its surface.

[0044] In at least one exemplary embodiment, a hanger adapted to couple to a roof and a gutter protector to be secured on top of a rain gutter is disclosed. The hanger includes: a generally horizontal elongate member adapted to couple to both a roof and a gutter protector to be secured on top of a rain gutter, the elongate member further comprising a hangar upper lateral at a distal end and a hangar lower lateral folded back under the hanger upper lateral at the distal end, wherein the hangar upper lateral and the hangar lower lateral are integrally formed with the elongate member, and wherein the upper lateral and the hangar lower lateral are adapted to couple to a gutter protector there between; and an interlock channel defined within the upper lateral and the hangar lower lateral, wherein the interlock channel is adapted as a receiving area to receive and securely hold the gutter protector.

[0045] In at least one embodiment, the hanger also includes a plurality of ribbed tiers integrally formed along a portion of the elongate member, to provide a stair-stepped pattern on the elongate member to provide rigidity and to facilitate water flow.

[0046] In at least one embodiment, the hanger further includes an embossed pattern disposed within a top surface of the elongate member of the hanger, thereby adapted to closely resemble a pattern of a common roof shingle.

[0047] In at least one embodiment, the hanger also includes an granulized pattern disposed upon a top surface of the elongate member of the hanger, thereby adapted to closely resemble a granularity of a common roof shingle.

[0048] In at least one embodiment, the hanger further includes a plurality of tabs, defined upon a top surface of the elongate member of the hanger; and a plurality of cut-outs, defined upon a top surface of the elongate member of the hanger. The plurality of tabs and the plurality of cut-outs are adapted to dimensionally resemble the tabs, cut-outs, and appearance of a common roof tabbed shingle sheet.

[0049] In at least one embodiment, the elongate member is comprised of a metal material.

[0050] In at least one embodiment, the elongate member is comprised of a plastic material.

[0051] In at least one embodiment, the elongate member is comprised of a composite material.

[0052] In at least one embodiment, the elongate member is comprised of a color to closely resemble a shade of a common roof shingle.

[0053] In at least one embodiment, the elongate member is comprised of a substantially flat top surface to closely resemble that of a common roof shingle.

[0054] In at least one embodiment, a proximal end of the elongate member of the hanger is adapted for placement over a first row of shingles located on a roof closest to a gutter, and under a second row of shingles located immediately above the first row of shingles on a roof.

[0055] In at least one other exemplary embodiment, a gutter protector, to be secured on top of a rain gutter and coupled to a roof, is disclosed. The gutter protector includes: an upper fastener; a hanger adapted to couple to a roof and the upper fastener of the gutter protector to be secured on top of a rain gutter; a lower fastener configured to secure the gutter protector to a top of a front wall of the rain gutter; and a non-rigid permeable member extended tautly and smoothly, once

installed, between the upper fastener and the lower fastener, the gutter protector configured with a plurality of openings to permit the passage of water while substantially shedding organic debris, debris, and solid material.

[0056] In at least one embodiment, the gutter protector also includes a channel integrally formed within the gutter protector and configured to facilitate water deflection, for water running on an underside of the permeable member.

[0057] In at least one embodiment of the gutter protector, the lower fastener further comprises a bull nose protrusion extending over the channel.

[0058] In at least one embodiment, the gutter protector further includes: a plurality of tabs, defined upon a top surface of the elongate member of the hanger; and a plurality of cut-outs, defined upon a top surface of the elongate member of the hanger. The plurality of tabs and the plurality of cut-outs are adapted to dimensionally resemble the tabs, cut-outs, and appearance of a common roof tabbed shingle sheet.

[0059] In yet another other exemplary embodiment, a gutter protection system is disclosed. The gutter protection system includes: a rain gutter; an upper fastener; a hanger adapted to couple to a roof and the upper fastener of the gutter protector to be secured on top of the rain gutter; a lower fastener configured to secure the gutter protector to a top of a front wall of the rain gutter; and a non-rigid permeable member extended tautly and smoothly, once installed, between the upper fastener and the lower fastener, the gutter protector configured with a plurality of openings to permit the passage of water while substantially shedding organic debris, debris, and solid material.

[0060] In at least one embodiment, the gutter protection system also includes a channel integrally formed within the gutter protector and configured to facilitate water deflection, for water running on an underside of the permeable member.

[0061] In at least one embodiment of the gutter protection system, the lower fastener further comprises a bull nose protrusion extending over the channel.

[0062] In at least one embodiment, the gutter protection system further includes: a plurality of tabs, defined upon a top surface of the elongate member of the hanger; and a plurality of cut-outs, defined upon a top surface of the elongate member of the hanger. The plurality of tabs and the plurality of cut-outs are adapted to dimensionally resemble the tabs, cut-outs, and appearance of a common roof tabbed shingle sheet.

[0063] In at least one embodiment, the gutter protection system also includes: a flange integrally formed with the lower fastener and configured to provide a drip edge angled outwardly and away from an outside edge of the front wall of the gutter; and a riser integrally formed with the upper fastener and configured to provide a downward slope across the permeable member from the upper fastener to the lower fastener to shed organic debris and solid material from the rain gutter yet allow water to pass through the permeable member into the gutter. The gutter protector is configured to operate without an underlying support structure. The channel is integrally formed within the non-rigid permeable member of the gutter protector and the non-rigid permeable member further comprises a projection for placement downwardly into a gutter for water deflection for water running on an underside of the permeable member. The gutter protector is configured with no raised edge on an upper surface of the gutter protector thereby having no impediment to the flow of debris and water across a top surface area to eliminate any possibility of backup or debris. The channel is configured to be rotated and

utilized at one or more angles relative to a base of the lower fastener. The upper fastener is configured to fold inwardly on the non-rigid permeable member to shorten the width covered by the gutter protector over a gutter.

[0064] There has thus been outlined, rather broadly, the more important features of the technology in order that the detailed description thereof that follows may be better understood, and in order that the present contribution to the art may be better appreciated. There are additional features of the technology that will be described hereinafter and which will form the subject matter of the claims appended hereto. In this respect, before explaining at least one embodiment of the technology in detail, it is to be understood that the invention is not limited in its application to the details of construction and to the arrangements of the components set forth in the following description or illustrated in the drawings. The technology described herein is capable of other embodiments and of being practiced and carried out in various ways. Also, it is to be understood that the phraseology and terminology employed herein are for the purpose of description and should not be regarded as limiting.

[0065] As such, those skilled in the art will appreciate that the conception, upon which this disclosure is based, may readily be utilized as a basis for the designing of other structures, methods and systems for carrying out the several purposes of the present invention. It is important, therefore, that the claims be regarded as including such equivalent constructions insofar as they do not depart from the spirit and scope of the technology described herein.

[0066] Further objects and advantages of the technology described herein will be apparent from the following detailed description of a presently preferred embodiment which is illustrated schematically in the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0067] The technology described herein is illustrated with reference to the various drawings, in which like reference numbers denote like device components and/or method steps, respectively, and in which:

[0068] FIG. 1 is a side view of the accessory roof panel and hanger for a gutter protection system, according to an embodiment of the technology described herein;

[0069] FIG. 2 is a side view of the upper fastener of a gutter protection system to couple with the permeable member, illustrating, in particular, a couple configuration and a rotation means by which the upper fastener is rolled inwardly with the permeable member, according to an embodiment of the technology described herein;

[0070] FIG. 3 is a side view of both an upper fastener and a lower fastener of a gutter protection system to couple with the permeable member for water deflection, illustrating, in particular, a varied formation of attachment having an inner edge bull nose to set back the water deflector, according to an embodiment of the technology described herein;

[0071] FIG. 4 is a side view of both the accessory roof panel and hanger for a gutter protection system, depicted in FIG. 1, and the upper fastener and a lower fastener of a gutter protection system to couple with the permeable member for water deflection, depicted in FIG. 3, illustrating, in particular the relationship between the components and illustrating how the upper faster of a gutter protection system can be clasped within the accessory roof panel and hanger, according to an embodiment of the technology described herein;

[0072] FIG. 5 is a side view of the accessory roof panel and hanger for a gutter protection system, according to an alternative embodiment of the technology described herein;

[0073] FIG. 6 is a side view of the accessory roof panel and hanger for a gutter protection system, illustrating, in particular a means of coupling the accessory roof panel and hanger to shingles, according to an alternative embodiment of the technology described herein;

[0074] FIG. 7 is a side view of the accessory roof panel and hanger for a gutter protection system, illustrating, in particular a means of coupling the accessory roof panel and hanger to shingles, according to an alternative embodiment of the technology described herein;

[0075] FIG. 8 is a front perspective view of the accessory roof panel and hanger and a gutter protection system, illustrating, in particular accessory roof panel and hanger coupled to the upper fastener of the gutter protection system, and illustrating a permeable member coupled to an upper fastener and a lower fastener and secured tautly, once installed, and having a channel formed within the permeable member to facilitate water deflection for water running on an underside of the permeable member, according to an embodiment of the technology described herein

[0076] FIG. 9 is a side cross-section view of the accessory roof panel and hanger and a gutter protection system depicted in FIG. 8, illustrating, in particular, the relationship of the accessory roof panel and hanger and the upper fastener and shingles placement, as well as the relationship of the gutter protection system to the gutter, fascia board, and shingles, according to an embodiment of the technology described herein;

[0077] FIG. 10 is a top view of the accessory roof panel and hanger and a gutter protection system illustrating, in particular, the relationship of the accessory roof panel and hanger to the upper fastener and the shingles, according to an embodiment of the technology described herein; and

[0078] FIG. 11 is a top view of the accessory roof panel and hanger and a gutter protection system illustrating, in particular, the relationship of the accessory roof panel and hanger to the upper fastener and the shingles, according to an alternative embodiment of the technology described herein.

DETAILED DESCRIPTION OF THE INVENTION

[0079] Before describing the disclosed embodiments of this technology in detail, it is to be understood that the technology is not limited in its application to the details of the particular arrangement shown here since the technology described is capable of other embodiments. Also, the terminology used herein is for the purpose of description and not of limitation.

[0080] In various exemplary embodiments, the technology described herein provides an accessory roof panel and hanger 100 for a gutter protection system 10 that is configured to provide zero clogging of leaves, debris, and the like, and that utilizes no underlying structural support system and that utilizes no edges or areas in which debris can snag or restrict debris movement across its surface.

[0081] Referring now to the Figures, an accessory roof panel and hanger 100 adapted to couple to a roof between shingles 20 and a gutter protector 10 to be secured on top of a rain gutter is shown. The hanger 100 includes a generally horizontal elongate member 102, as depicted in FIG. 1, adapted to couple to both a roof between shingles 20 and a gutter protector 10 to be secured on top of a rain gutter. The

elongate member **102** further includes a hangar upper lateral **106** at a distal end and a hangar lower lateral **108** folded back under the hangar upper lateral **106** at the distal end. The hangar upper lateral **106** and the hangar lower lateral **108** are integrally formed with the elongate member **102**. The hangar upper lateral **106** and the hangar lower lateral **108** are adapted to couple to a gutter protector **10** there between. An interlock channel is defined within the hangar upper lateral **106** and the hangar lower lateral **108**. The interlock channel is adapted as a receiving area to receive and securely hold the gutter protector **10**.

[0082] In at least one embodiment, the hangar **100** also includes multiple ribbed tiers **104a**, **104b**, and **104c**, for example. The multiple ribbed tiers **104a**, **104b**, and **104c** are integrally formed along a portion of the elongate member **102**, to provide a stair-stepped pattern on the elongate member **102** and to provide rigidity and to facilitate water flow.

[0083] In at least one embodiment, the hangar **100** also includes a tip **110** at the end of hangar lower lateral **108**. The tip **110** is inwardly and upwardly facing toward the hangar upper lateral **106**. The tip **110** is adapted to provide an additional means by which to secure the upper fastener of a gutter protector **10** to the hangar **100** such that the gutter protector is not easily removed.

[0084] In at least one embodiment, the hangar **100** further includes an embossed pattern disposed within a top surface of the elongate member **102** of the hangar **100**. Element **154** is representative of an embossed pattern, granularity, and/or color disposed upon the top surface of the elongate member **102** of the hangar **100**. As such the hangar **100** is thereby adapted to closely resemble a pattern of a common roof shingle.

[0085] In at least one embodiment, the hangar **100** also includes a granulated pattern, such as element **154**, disposed upon a top surface of the elongate member **102** of the hangar **100**. Element **154** is representative of an embossed pattern, granularity, and/or color disposed upon the top surface of the elongate member **102** of the hangar **100**. As such the hangar **100** is thereby adapted to closely resemble a granularity of a common roof shingle.

[0086] In at least one embodiment, the hangar **100** further includes a plurality of tabs **152**, defined upon a top surface of the elongate member **102** of the hangar **100**. The plurality of tabs **152** is adapted to dimensionally resemble the tabs and appearance of a common roof tabbed shingle sheet.

[0087] In at least one embodiment, the hangar **100** further includes a plurality of cut-outs **150**, defined upon a top surface of the elongate member **102** of the hangar **100**. The plurality of cut-outs **150** is adapted to dimensionally resemble the cut-outs and appearance of a common roof shingle sheet.

[0088] In at least one embodiment, the hangar **100** is comprised of a metal material. By way of example, and not of limitation, the metal of the hangar **100** can be aluminum.

[0089] In at least one embodiment, the hangar **100** is comprised of a plastic material.

[0090] In at least one embodiment, the hangar **100** is comprised of a composite material.

[0091] In at least one embodiment, the hangar **100** is comprised of a color to closely resemble a shade or color or appearance of a common roof shingle.

[0092] In at least one embodiment, the hangar **100** is comprised of a substantially flat top surface to closely resemble

that of a common roof shingle. By way of example, a substantially flat top surface of hangar **100** is depicted in FIGS. **5**, **6**, and **7**.

[0093] In at least one embodiment, and as depicted specifically in FIG. **6**, the hangar **100** is further comprised of an adhesive **112a** on the upper surface of the hangar **100**. Adhesive **112a** is adapted to adhere the hangar **100** to the underside of the second row of shingles on a roof.

[0094] In at least one embodiment, and as depicted specifically in FIG. **6**, the hangar **100** is further comprised of an adhesive **112b** on the lower surface of the hangar **100**. Adhesive **112b** is adapted to adhere the hangar **100** to the upper-side of the first row of shingles on a roof.

[0095] In at least one embodiment, and as depicted specifically in FIG. **7**, the hangar **100** can be coupled to a roof via a tack **114**, nail, mechanical fastener, or like device.

[0096] In at least one embodiment, a proximal end of the elongate member **102** of the hangar is adapted for placement over a first row of shingles **20** located on a roof closest to a gutter, and under a second row of shingles located immediately above the first row of shingles **20** on a roof.

[0097] In at least one other exemplary embodiment, a gutter protector **10**, to be secured on top of a rain gutter and coupled to a roof, is disclosed. The gutter protector **10** includes: an upper fastener **12**; a hangar **100** adapted to couple to a roof and the upper fastener **12** of the gutter protector to be secured on top of a rain gutter; a lower fastener **16** configured to secure the gutter protector **10** to a top of a front wall **18** of the rain gutter; and a non-rigid permeable member **14** extended tautly and smoothly, once installed, between the upper fastener **12** and the lower fastener **16**. The gutter protector **10** is configured with a plurality of openings to permit the passage of water while substantially shedding organic debris, debris, and solid material.

[0098] In at least one embodiment, the gutter protector **10** also includes a channel integrally formed within the gutter protector **10**, and between members **17** and **35**, and configured to facilitate water deflection, for water running on an underside of the permeable member **14**.

[0099] In at least one embodiment of the gutter protector **10**, the lower fastener **16** further comprises a bull nose protrusion **33** extending over the channel.

[0100] In at least one embodiment, the gutter protector **10** further includes: a plurality of tabs **152**, defined upon a top surface of the elongate member of the hangar **100**; and a plurality of cut-outs **150**, defined upon a top surface of the elongate member **102** of the hangar **100**. The plurality of tabs **152** and the plurality of cut-outs **150** are adapted to dimensionally resemble the tabs, cut-outs, and appearance of a common roof tabbed shingle sheet.

[0101] In yet another other exemplary embodiment, a gutter protection system is disclosed. The gutter protection system includes: a rain gutter, formed by members **22**, **24**, **18**, **26**, **32**; an upper fastener **12**; a hangar **100** adapted to couple to a roof and the upper fastener **12** of the gutter protector **10** to be secured on top of the rain gutter; a lower fastener **16** configured to secure the gutter protector **10** to a top of a front wall **18** of the rain gutter; and a non-rigid permeable member **14** extended tautly and smoothly, once installed, between the upper fastener **12** and the lower fastener **16**, the gutter protector **10** configured with a plurality of openings to permit the passage of water while substantially shedding organic debris, debris, and solid material.

[0102] In at least one embodiment, the gutter protection system also includes a channel integrally formed within the gutter protector **10** between elements **17** and **35** and configured to facilitate water deflection, for water running on an underside of the permeable member **14**.

[0103] In at least one embodiment of the gutter protection system, the lower fastener **16** further comprises a bull nose protrusion **33** extending over the channel formed between elements **17** and **35**.

[0104] In at least one embodiment, the gutter protection system further includes: a plurality of tabs **152**, defined upon a top surface of the elongate member **102** of the hanger **100**; and a plurality of cut-outs **150**, defined upon a top surface of the elongate member **102** of the hanger **100**. The plurality of tabs **152** and the plurality of cut-outs **150** are adapted to dimensionally resemble the tabs, cut-outs, and appearance of a common roof tabbed shingle sheet.

[0105] In at least one embodiment, the gutter protection system also includes: a flange integrally formed with the lower fastener **16** and configured to provide a drip edge angled outwardly and away from an outside edge of the front wall of the gutter; and a riser integrally formed with the upper fastener **12** and configured to provide a downward slope across the permeable member **14** from the upper fastener **12** to the lower fastener **16** to shed organic debris and solid material from the rain gutter yet allow water to pass through the permeable member into the gutter. The gutter protector **10** is configured to operate without an underlying support structure. The channel is integrally formed within the non-rigid permeable member of the gutter protector and the non-rigid permeable member further comprises a projection for placement downwardly into a gutter for water deflection for water running on an underside of the permeable member. The gutter protector **10** is configured with no raised edge on an upper surface of the gutter protector thereby having no impediment to the flow of debris and water across a top surface area to eliminate any possibility of backup or debris. The channel is configured to be rotated and utilized at one or more angles relative to a base of the lower fastener. The upper fastener **12** is configured to fold inwardly on the non-rigid permeable member to shorten the width covered by the gutter protector over a gutter.

[0106] The gutter protector **10** is configured to be secured on top of a rain gutter or above the gutter fastened to the fascia board, rafter tail, or the like, of a building. The gutter protector **10** is configured to work with a K-style, Ogee, or conventional gutters as an add-on or retrofit solution. The gutter protector **10** also is configured to be prefabricated and/or preassembled with a gutter at a point of manufacture for later installation as a complete gutter system. The gutter protector **10** is configured to operate without an underlying support structure. The gutter protector **10** is configured with no raised edge on an upper surface of the gutter protector **10** thereby having no impediment to the flow of debris and water that would create clogs.

[0107] A rain gutter typically has a rear wall **22**, front wall **18**, and a base, or channel **24**. Additionally the front wall **18** can further include upper lip **26** and flange **32**. Depending on the gutter, the upper lip **26** can be flat or rounded. As is well known in the art, the various components used to create the underlying gutter can vary. However, the gutter protector **10** disclosed herein is configured to protect gutters in many variations from debris entering, yet allow water to enter.

[0108] The gutter protector **10** typically is fastened on a building up against a fascia board **30**. The shingles **20** on the building overhang the gutter and gutter protector **10** enough to ensure that no debris and/or water flow backwardly toward the building or into the building.

[0109] The gutter protector **10** includes an upper fastener **12** in various configurations. The upper fastener **12** is configured to secure the gutter protector **10** above a rear wall **22** of the rain gutter to the fascia board **30**.

[0110] In at least one embodiment, the upper fastener **12** is aluminum. In at least one embodiment, the upper fastener **12** is polyvinyl chloride (PVC). As will be apparent to one of ordinary skill in the art upon reading this disclosure, alternative materials can be utilized based upon the application.

[0111] The gutter protector **10** includes a lower fastener **16**. The lower fastener **16** is configured to secure the gutter protector **10** to a top of a front wall **18** of the rain gutter.

[0112] In at least one embodiment, the lower fastener **16** is aluminum. In at least one embodiment, the lower fastener **16** is polyvinyl chloride (PVC). As will be apparent to one of ordinary skill in the art upon reading this disclosure, alternative materials can be utilized based upon the application.

[0113] The gutter protector **10** includes a non-rigid permeable member **14**. The non-rigid permeable member **14** is extended tautly and smoothly, once installed, between the upper fastener **12** and the lower fastener **16**. The non-rigid permeable member **14**, in various embodiments, includes fabric, mesh, screen, and micro stainless steel fabric. The non-rigid permeable member **14**, in various embodiments, is metal. The non-rigid permeable member **14**, in various embodiments, is plastic. The non-rigid permeable member **14**, in various embodiments, is fabric. As will be apparent to one of ordinary skill in the art upon reading this disclosure, alternative materials, such as graphite or titanium, for example, can be utilized based upon the application.

[0114] In at least one embodiment, the gutter protector **10** also includes a channel **17**, configured to facilitate water deflection for water running on an underside of the non-rigid permeable member **14**. As water hits or runs over the non-rigid permeable member **14**, the channel **17** ensures that the water will be deflected into the gutter trough **24**. The channel includes an inner edge **17**, outer edge **35**, and in some embodiments a bull nose **33**. The channel protrusion formed by the combined inner edge **17** and the outer edge **35** is a multi-purpose crimped channel that holds the front of the non-rigid permeable member **14**, gives rigidity to the lower support, diverts water flowing under the permeable member **14** to be diverted into the gutter, and aids in the proper positioning of the permeable member **14** depending on its intended secure position. The bull nose **33** protrusion is a bull nose crimp used to put the top surface of the lower fastener **16** above and over the non-rigid permeable member **14** as it is crimped into the channel. The inner edge **17** and the outer edge **35** that form channel are set back under the bull nose **33** protrusion.

[0115] In at least one embodiment of the gutter protector **10**, the channel **17** is integrally formed within the lower fastener **16** of the gutter protector. The channel **17** and lower fastener **16** can vary in material, size, width and length.

[0116] In at least one embodiment of the gutter protector **10**, the channel **17** is integrally formed within the non-rigid permeable member **14** of the gutter protector **10**. As will be apparent to one of ordinary skill in the art upon reading this

disclosure, the angle of the channel 17 to the non-rigid member 14 can vary based upon application and other factors and circumstances.

[0117] In at least one embodiment of the gutter protector 10, the channel 17 is integrally formed within the non-rigid permeable member of the gutter protector 10 and the non-rigid permeable member 14 further includes a projection for placement downwardly into a gutter for water deflection for water running on an underside of the permeable member.

[0118] In at least one embodiment of the gutter protector 10, the channel 17 is integrally formed with the coupled non-rigid permeable member 14 and lower fastener 16 of the gutter protector 10.

[0119] The gutter protector 10 configured with a plurality of openings to permit the passage of water while substantially shedding organic debris, debris, and solid material. See for example, mesh 15 close-up of the permeable member in FIG. 8. Visually the gutter protector 10 may appear to be a solid surface, but the gutter protector 10 includes openings such that the gutter protector 10 is permeable. By way of example, the gutter protector 10 is a micro stainless steel mesh in one embodiment. Also by way of example, one embodiment includes a weave pattern of a certain number of longitudinal cross pieces for a certain number of latitudinal cross pieces. Weave patterns can be selected and used in alternative embodiments dependent on user selection and need in a particular installation.

[0120] Although this technology has been illustrated and described herein with reference to preferred embodiments and specific examples thereof, it will be readily apparent to those of ordinary skill in the art that other embodiments and examples can perform similar functions and/or achieve like results. All such equivalent embodiments and examples are within the spirit and scope of the invention and are intended to be covered by the following claims.

What is claimed is:

1. A hanger adapted to couple to a roof and a gutter protector to be secured on top of a rain gutter, the hanger comprising:

a generally horizontal elongate member adapted to couple to both a roof and a gutter protector to be secured on top of a rain gutter, the elongate member further comprising a hanger upper lateral at a distal end and a hanger lower lateral folded back under the hanger upper lateral at the distal end, wherein the hanger upper lateral and the hanger lower lateral are integrally formed with the elongate member, and wherein the upper lateral and the hanger lower lateral are adapted to couple to a gutter protector there between; and

an interlock channel defined within the upper lateral and the hanger lower lateral, wherein the interlock channel is adapted as a receiving area to receive and securely hold the gutter protector.

2. The hanger of claim 1, further comprising:

a plurality of ribbed tiers integrally formed along a portion of the elongate member, to provide a stair-stepped pattern on the elongate member to provide rigidity and to facilitate water flow.

3. The hanger of claim 1, further comprising:

an embossed pattern disposed within a top surface of the elongate member of the hanger, thereby adapted to closely resemble a pattern of a common roof shingle.

4. The hanger of claim 1, further comprising:

an granulized pattern disposed upon a top surface of the elongate member of the hanger, thereby adapted to closely resemble a granularity of a common roof shingle.

5. The hanger of claim 1, further comprising:

a plurality of tabs, defined upon a top surface of the elongate member of the hanger; and

a plurality of cut-outs, defined upon a top surface of the elongate member of the hanger;

wherein the plurality of tabs and the plurality of cut-outs are adapted to dimensionally resemble the tabs, cut-outs, and appearance of a common roof tabbed shingle sheet.

6. The hanger of claim 1, wherein the elongate member is comprised of a metal material.

7. The hanger of claim 1, wherein the elongate member is comprised of a plastic material.

8. The hanger of claim 1, wherein the elongate member is comprised of a composite material.

9. The hanger of claim 1, wherein the elongate member is comprised of a color to closely resemble a shade of a common roof shingle.

10. The hanger of claim 1, wherein the elongate member is comprised of a substantially flat top surface to closely resemble that of a common roof shingle.

11. The hanger of claim 1, wherein a proximal end of the elongate member of the hanger is adapted for placement over a first row of shingles located on a roof closest to a gutter, and under a second row of shingles located immediately above the first row of shingles on a roof.

12. A gutter protector, to be secured on top of a rain gutter and coupled to a roof, the gutter protector comprising

an upper fastener;

a hanger adapted to couple to a roof and the upper fastener of the gutter protector to be secured on top of a rain gutter;

a lower fastener configured to secure the gutter protector to a top of a front wall of the rain gutter; and

a non-rigid permeable member extended tautly and smoothly, once installed, between the upper fastener and the lower fastener, the gutter protector configured with a plurality of openings to permit the passage of water while substantially shedding organic debris, debris, and solid material.

13. The gutter protector of claim 12, further comprising:

a channel integrally formed within the gutter protector and configured to facilitate water deflection, for water running on an underside of the permeable member.

14. The gutter protector of claim 13, wherein the lower fastener further comprises a bull nose protrusion extending over the channel.

15. The gutter protector of claim 12, wherein the hanger further comprises:

a plurality of tabs, defined upon a top surface of the elongate member of the hanger; and

a plurality of cut-outs, defined upon a top surface of the elongate member of the hanger;

wherein the plurality of tabs and the plurality of cut-outs are adapted to dimensionally resemble the tabs, cut-outs, and appearance of a common roof tabbed shingle sheet.

16. A gutter protection system, to be secured on top of a rain gutter and to a roof, the gutter protection system comprising:

- a rain gutter;
 - an upper fastener;
 - a hanger adapted to couple to a roof and the upper fastener of the gutter protector to be secured on top of the rain gutter;
 - a lower fastener configured to secure the gutter protector to a top of a front wall of the rain gutter; and
 - a non-rigid permeable member extended tautly and smoothly, once installed, between the upper fastener and the lower fastener, the gutter protector configured with a plurality of openings to permit the passage of water while substantially shedding organic debris, debris, and solid material.
- 17.** The gutter protection system of claim **16**, further comprising:
- a channel integrally formed within the gutter protector and configured to facilitate water deflection, for water running on an underside of the permeable member.
- 18.** The gutter protection system of claim **17**, wherein the lower fastener further comprises a bull nose protrusion extending over the channel.
- 19.** The gutter protection system of claim **16**, wherein the hanger further comprises:
- a plurality of tabs, defined upon a top surface of the elongate member of the hanger; and
 - a plurality of cut-outs, defined upon a top surface of the elongate member of the hanger;
- wherein the plurality of tabs and the plurality of cut-outs are adapted to dimensionally resemble the tabs, cut-outs, and appearance of a common roof tabbed shingle sheet.
- 20.** The gutter protection system of claim **16**, further comprising:

- a flange integrally formed with the lower fastener and configured to provide a drip edge angled outwardly and away from an outside edge of the front wall of the gutter; and
 - a riser integrally formed with the upper fastener and configured to provide a downward slope across the permeable member from the upper fastener to the lower fastener to shed organic debris and solid material from the rain gutter yet allow water to pass through the permeable member into the gutter;
- wherein the gutter protector is configured to operate without an underlying support structure;
- wherein the channel is integrally formed within the non-rigid permeable member of the gutter protector and the non-rigid permeable member further comprises a projection for placement downwardly into a gutter for water deflection for water running on an underside of the permeable member;
- wherein the gutter protector is configured with no raised edge on an upper surface of the gutter protector thereby having no impediment to the flow of debris and water across a top surface area to eliminate any possibility of backup or debris;
- wherein the channel is configured to be rotated and utilized at one or more angles relative to a base of the lower fastener; and
- wherein the upper fastener is configured to fold inwardly on the non-rigid permeable member to shorten the width covered by the gutter protector over a gutter.

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