



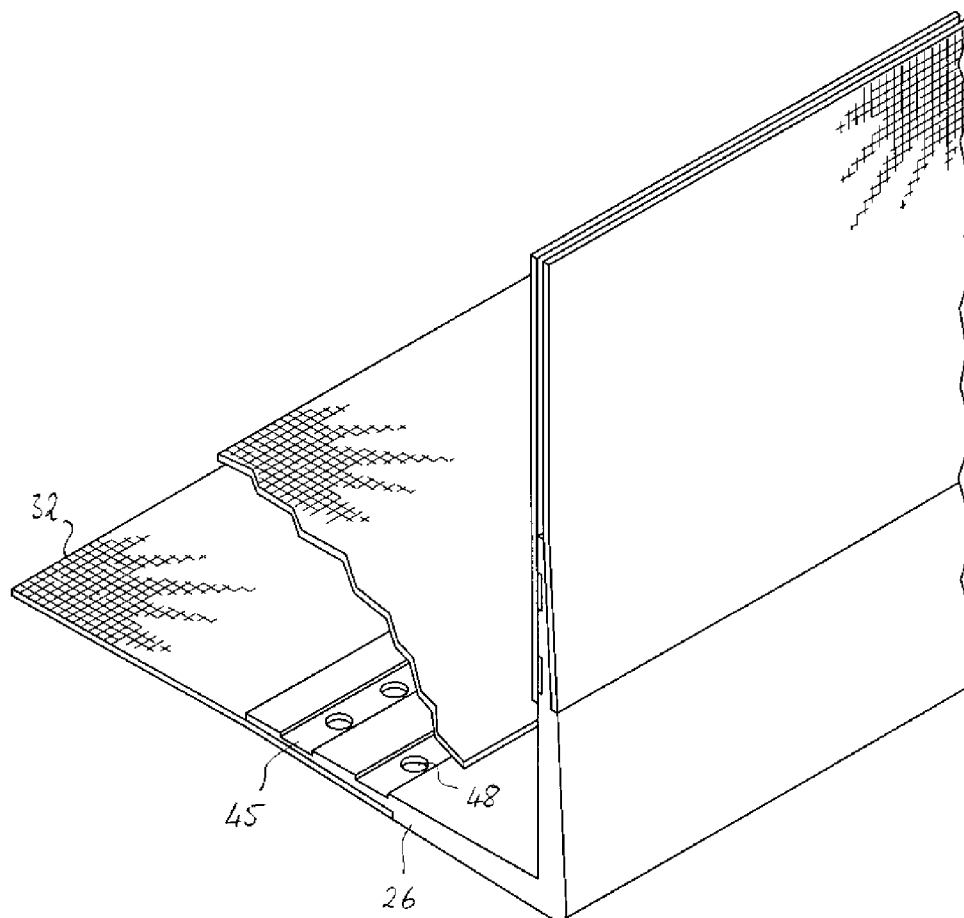
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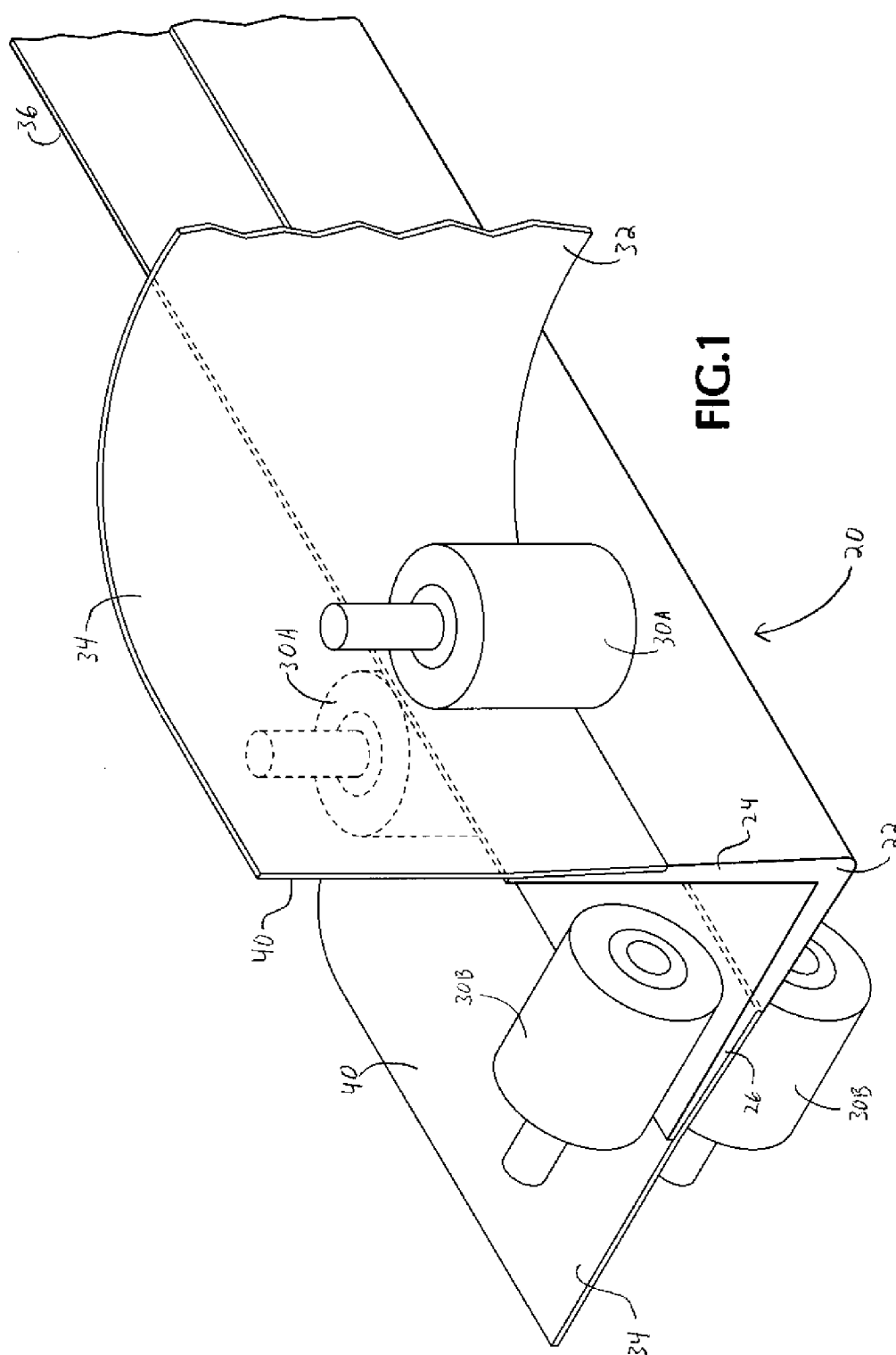
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Robertson(10) **Pub. No.: US 2006/0283115 A1**(43) **Pub. Date: Dec. 21, 2006**(54) **FIBERGLASS MESH FACED CORNERBEAD****Publication Classification**(76) Inventor: **Frederick J. Robertson**, Vancouver,
WA (US)(51) **Int. Cl.**
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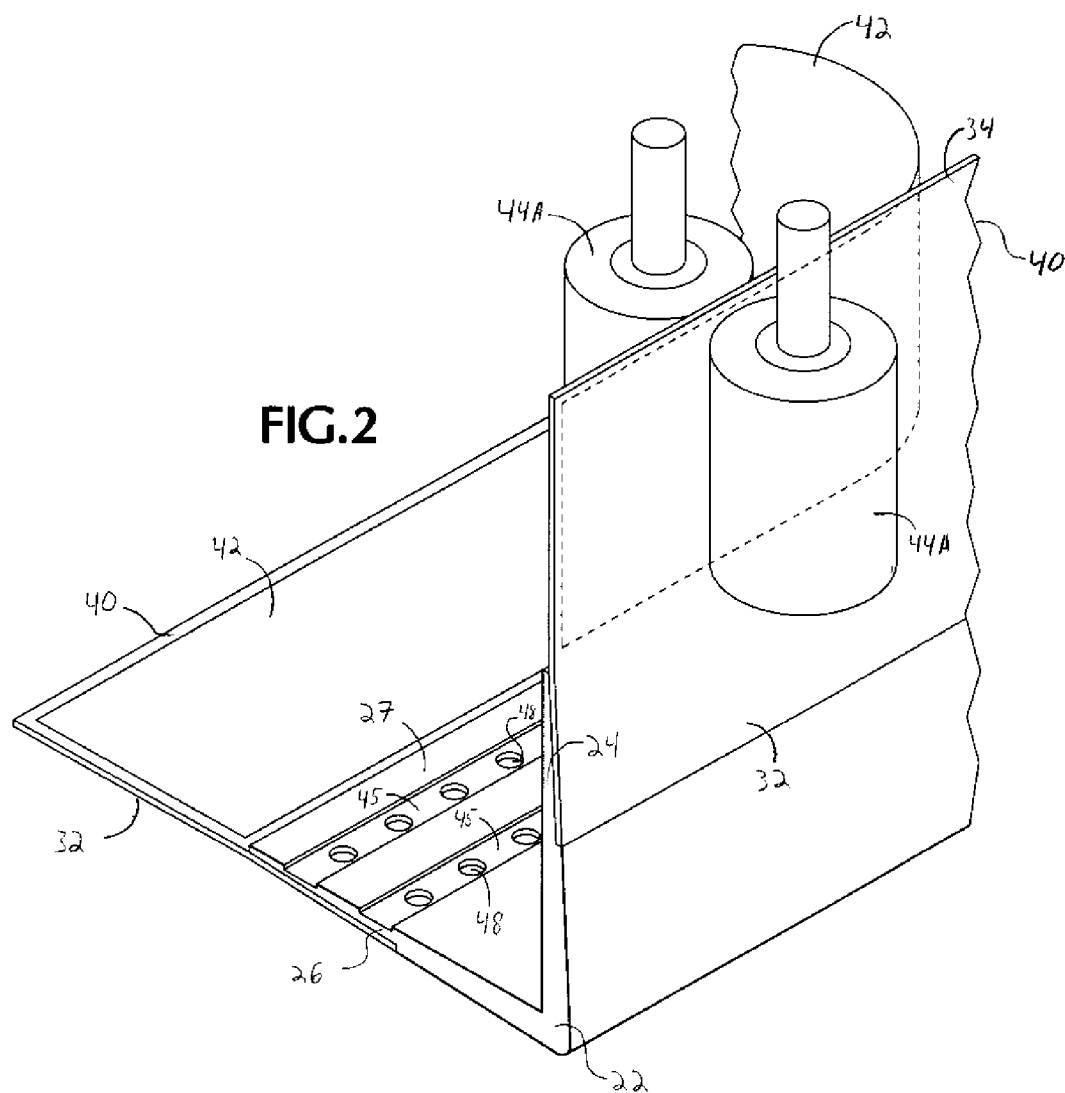
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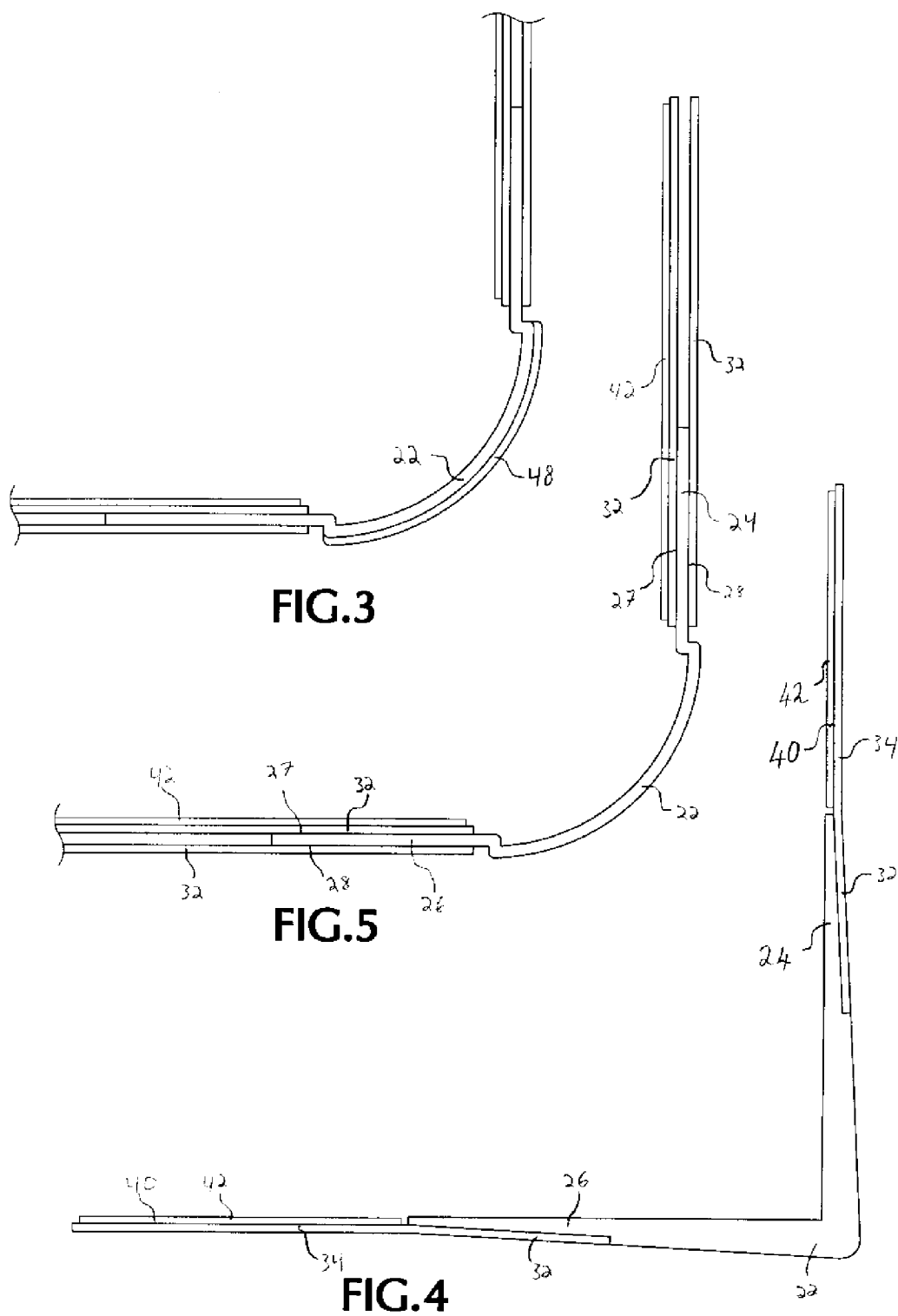
SMITH-HILL AND BEDELL, P.C.
16100 NW CORNELL ROAD, SUITE 220
BEAVERTON, OR 97006 (US)(21) Appl. No.: **11/466,882**(22) Filed: **Aug. 24, 2006****Related U.S. Application Data**(63) Continuation-in-part of application No. 11/116,991,
filed on Apr. 27, 2005.(57) **ABSTRACT**

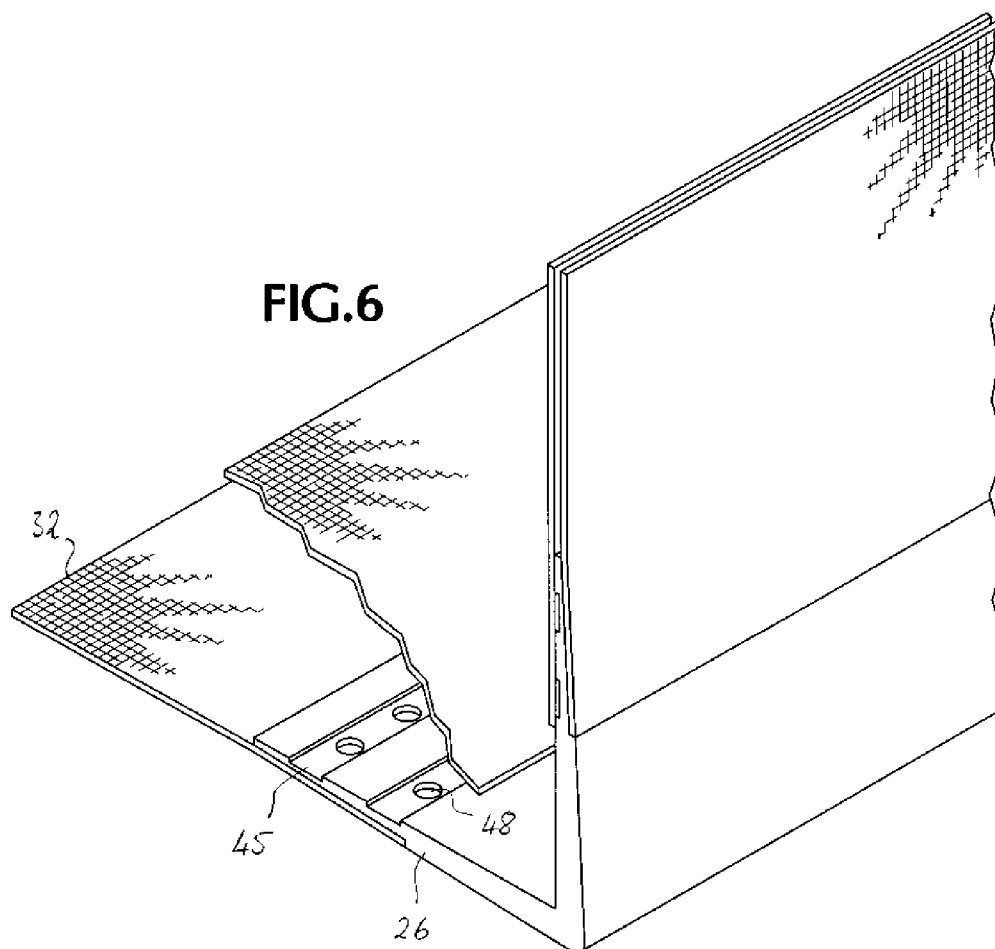
A cornerbead for installation at a drywall outside corner, the cornerbead includes a substrate forming a nose and first and second elongated flanges. A first strip of perforated tape is adhered to the first flange at its exterior surface. The first strip of tape extends longitudinally of the first flange and a portion of the first strip of tape extends past the outer edge of the first flange. A second strip of perforated tape is adhered to the first elongated flange at its interior surface. The second strip of tape extends longitudinally of the first flange. The first strip has a coating of adhesive material on a side that faces towards the first flange and the second strip has a coating of adhesive material on a side that faces away from the first flange.











FIBERGLASS MESH FACED CORNERBEAD

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This is a continuation-in-part of co-pending patent application Ser. No. 11/116,991 filed Apr. 27, 2005, the entire disclosure of which is hereby incorporated herein by reference for all purposes, and claims benefit of U.S. Provisional Application No. 60/565,904 filed on Apr. 27, 2004, the entire disclosure of which is hereby incorporated herein by reference for all purposes.

BACKGROUND OF THE INVENTION

[0002] In building construction, interior walls are generally formed by attaching preformed sheets of gypsum wallboard to a supporting frame. These sheets of wallboard are susceptible to damage, especially at outside corners. In order to protect an outside corner of a wall, a cornerbead is often installed on the corner prior to painting. A conventional cornerbead is typically a thin, elongate strip of metal or plastic with a right angle bend along the strip's longitudinal axis. The right angle bend forms a nose and two flanges extend from opposite sides of the nose. Holes are provided for nailing or screwing the cornerbead to the drywall.

[0003] During the construction process an installer must place the cornerbead on the desired outside corner, hold the cornerbead in place with one hand and attach the cornerbead to the drywall using nails or screws with his or her other hand. Joint compound is then applied over the seam between the edge of the flanges and the wallboard to provide a smooth surface transition for painting. This process is very time consuming and must be repeated many times in a typical new construction project.

[0004] Other techniques for attaching cornerbead to the drywall have been used. For example, U.S. Pat. No. 5,045,374 discloses a plastic cornerbead in which each flange is provided with a double-sided pressure sensitive adhesive tape strip adhering to the interior surface of the flange. The side of the strip that is inward relative to the flange, i.e. towards the drywall, is covered with a non-adhesive ribbon coated with a release agent. To install the cornerbead at a drywall outside corner, the ribbons are removed from the adhesive strips and the cornerbead is placed in position at the drywall outside corner. The adhesive strips hold the cornerbead in position without need for nails. The installer covers the flanges of the cornerbead and the adjacent drywall with joint compound, in conventional fashion. The adhesive tape strips prevent the joint compound from penetrating between the flanges and the drywall and accordingly the double-sided adhesive strips provide the permanent connection between the cornerbead and the drywall and the joint compound is simply a coating over the flange of the cornerbead and the adjacent drywall. Since the plastic cornerbead is flexible, and the adhesive strips allow limited movement of the flanges, significant movement of the flanges can occur in the event that the cornerbead is struck, for example when moving furniture. Accordingly, the joint compound, when dried, is prone to cracking along the outer edge of the flange.

[0005] Cracking of drywall joint compound along the outer edge of the flange of a cornerbead is a significant problem for drywall installation and offsets many of the gains that have been made in use of alternative materials,

such as plastic rather than metal, and alternative attachment techniques, such as adhesive rather than nails.

[0006] What is needed is a cornerbead that is easier and faster to install than a conventional metal cornerbead yet does not result in cracking of the joint compound along the outer edge of the flange.

SUMMARY OF THE INVENTION

[0007] In accordance with a first aspect of the invention there is provided a cornerbead for installation at a drywall outside corner, the cornerbead comprising a substrate forming a nose and first and second elongated flanges, each flange having an exterior surface and an interior surface, being formed with holes penetrating from the exterior surface to the interior surface, and having an inner edge and an opposing outer edge, each flange joining an opposing side of the nose at the flange's respective inner edge, a first strip of perforated tape adhered to the first elongated flange at the exterior surface thereof, the first strip of tape extending longitudinally of the first flange and a portion of the first strip of tape extending past the outer edge of the first flange, and a second strip of perforated tape adhered to the first elongated flange at the interior surface thereof, the second strip of tape extending longitudinally of the first flange, and wherein the first strip has a coating of adhesive material on a side that faces towards the first flange and the second strip has a coating of adhesive material on a side that faces away from the first flange.

[0008] In accordance with a second aspect of the invention there is provided a method of manufacturing a self-adhering cornerbead, the method comprising the steps of forming an elongate substrate of uniform cross-section, said substrate including a nose, a first flange and a second flange, each flange having an exterior surface and an interior surface, being formed with holes penetrating from the exterior surface to the interior surface, and having an inner edge and an outer edge, each flange joining an opposing side of the nose at the flange's respective inner edge, and adhering a first strip of perforated tape longitudinally along the exterior surface of the first flange such that a portion of the first strip extends beyond the outer edge of the first flange, and adhering a second strip of perforated tape longitudinally along the interior surface of the first flange, and wherein the first strip has a coating of adhesive material on a side that faces towards the first flange and the second strip has a coating of adhesive material on a side that faces away from the first flange.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] For a better understanding of the invention, and to show how the same may be carried into effect, reference will now be made, by way of example, to the accompanying drawings, in which

[0010] **FIG. 1** is a perspective view of a stage in the manufacture of a cornerbead embodying the present invention wherein strips of fiberglass mesh tape are being applied to the flanges of the cornerbead,

[0011] **FIG. 2** is a perspective view of a stage in the manufacture of a cornerbead embodying the present invention wherein a protective paper backing is being applied to the exposed portion of one of the strips of fiberglass mesh tape,

[0012] FIG. 3 shows a cross-sectional view of a bullnose cornerbead embodying the present invention wherein a layer of coating material, which could be either polyurethane foam or paper, has been applied to the nose of the cornerbead,

[0013] FIG. 4 is a cross-sectional view of a right-angle cornerbead embodying the present invention,

[0014] FIG. 5 shows a cross-sectional view of a bullnose cornerbead embodying the present invention, and

[0015] FIG. 6 shows a modification of the method described with reference to FIG. 2.

DETAILED DESCRIPTION

[0016] Referring to FIG. 1, the illustrated plastic cornerbead 20 is of uniform cross-section and is formed from a heated softened polymer extruded from a die (not shown). The cornerbead 20 includes a nose 22 and two perpendicular flanges 24, 26 joined by the nose 22. Each flange 24, 26 has a thicker portion proximal to the nose 22, a thinner portion distal to the nose 22, an interior surface 27 and an exterior surface 28. As the cornerbead 20 is extruded from the die, the flange 24 passes through a pair of rollers 30A. A strip of fiberglass mesh tape 32, from a tape supply roll (not shown), is fed through the pair of rollers 30A. Thus the rollers 30A apply the mesh tape 32 to the distal portion of the exterior side 28 of the flange 24. The mesh tape 32 is positioned such that a portion 34 of the mesh tape 32 extends beyond an outer edge 36 of the flange 24.

[0017] In an embodiment of the invention, the mesh tape 32 is adhered to the flange 24 by a coating of adhesive material on an interior side 40 of the tape 32.

[0018] In another embodiment of the invention, the tape 32 is applied to the flange 24 before the softened polymer material is fully hardened, immediately after the cornerbead 20 is extruded from the die. Pressure from the set of rollers 30A causes the tape to be embedded into the plastic and, as the plastic hardens, a bond is formed between the tape 32 and the flange 24. An adhesive material is then applied to the interior side 40 of the exposed portion 34 of the tape 32.

[0019] Referring to FIG. 2, a protective paper backing 42 is removeably applied to the exposed portion 34 of the tape 32 to protect the adhesive material during shipping and storage. This may be accomplished immediately downstream of the station shown in FIG. 1, using a second pair of rollers 44A in a manner similar to the application of the strip of fiberglass mesh tape shown in FIG. 1.

[0020] A third pair of rollers 30B, fed by a second tape supply roll (not shown), may apply a strip of fiberglass mesh tape 32 to the flange 26 in a manner similar to the one described above. Likewise, a fourth pair of rollers (not shown) may apply a protective paper backing to the strip of mesh tape 32 adhered to the flange 26 in a manner similar to the one described above.

[0021] The cornerbead 20 is produced in indeterminate lengths, then cut into standard lengths for storage and shipping purposes. In use, an installer can cut the cornerbead 20 to any desired length.

[0022] To install a cornerbead 20 embodying the present invention, an installer would remove the protective backing

42 from the exposed portions 34 of the tape 32 to expose the adhesive material and then place the cornerbead 20 into the desired position on a outside corner. Applying pressure along the length of the exposed portions 34 of the tape 32 will cause the cornerbead to adhere to the outside corner. The installer does not need to hold the cornerbead in place with one hand while securing it in position with nails or screws. Joint compound may then be applied to cover the tape 32 and provide a smooth transition surface from the drywall to the nose 22.

[0023] Referring to FIG. 2, in another embodiment of the invention, the flange 26 is formed with grooves 45 extending longitudinally along the interior surface 27 of the flange 26. Holes 48 are punched through the flange 26 and open into the groove 45. During installation joint compound applied to the cornerbead 20 will be forced through the holes 48 and will spread into the recess formed by the groove 45. This creates an improved bond between the joint compound and the cornerbead 20.

[0024] Referring to FIG. 3, in another embodiment of the invention, wherein the cornerbead 20 is formed from a polymer such as vinyl, a thin layer of closed-cell polyurethane foam 48 is applied to the exterior surface of the nose 22 and any portions of the flanges 24, 26 not covered by the mesh tape 32. The foam's surface is then subjected to abrasion, for instance via sandblasting, to provide improved bonding characteristics with paint or other finishing products likely to be applied after installation.

[0025] Fiberglass mesh tape provides a good bonding surface for joint compound. The fiberglass mesh tape comprises a plurality of longitudinal and transverse strands that intersect to define an array of apertures. When the cornerbead is installed, these apertures allow joint compound to bond with the tape as well as the surface of the wallboard beneath the tape thus reinforcing the joint compound as well as providing a smooth surface for painting.

[0026] FIG. 5 illustrates another embodiment of the invention. FIG. 5 not only shows that the invention is applicable to other configurations of cornerbead than right angle cornerbead and is applicable in particular to bullnose cornerbead, but also shows that the fiberglass mesh tape 32 may be attached to the interior surfaces 27 of the flanges 24, 26 in addition to the exterior surfaces 28 thereof. In the event that it is desired to attach the mesh tape to the interior surfaces of the flanges, as shown in FIG. 5, a coating of an adhesive that will bond to both the cornerbead material and the mesh tape is applied to the interior surfaces of the flanges after the extruded cornerbead has hardened and the mesh tape is applied to the adhesive-coated flanges using rollers in a manner similar to that described with reference to FIG. 1. The strip of mesh tape that is applied to a flange has a coating of adhesive on its interior surface (the surface remote from the flange), and this adhesive coating is covered with the protective backing 42. When the protective backing 42 is removed and the cornerbead is applied to a drywall outside corner, the adhesive material on the interior surface of the mesh tape provides a bond between the interior surface of the flange and the drywall. The FIG. 5 structure has the advantage that the cornerbead is secured more firmly to the gypsum wallboard and is therefore less likely to be accidentally dislodged or disturbed. Alternatively, the inner strip of mesh tape may be applied to the interior surface 27

of the flange **24** before the softened polymer material is fully hardened. Pressure from a set of rollers causes the tape to be embedded into the still soft plastic and, as the plastic hardens, a bond is formed between the tape and the flange's interior surface in a manner similar to that described with reference to **FIG. 1**.

[0027] Referring again to **FIG. 3**, in another embodiment of the invention, wherein the cornerbead **20** is formed from a polymer such as acrylic and fiberglass mesh tape has been attached to both the interior surfaces of the flanges **24**, **26** and the exterior surfaces thereof, a thin sheet of paper **48** is adhered to the exterior surface of the nose **22**.

[0028] **FIG. 4** illustrates another embodiment of the present invention that is the result of the manufacturing process shown in **FIG. 2**.

[0029] **FIG. 6** shows a modification of the method described with reference to **FIG. 2**. In accordance with this modification, the protective paper backing tape **42** is not applied to the interior surface of the mesh tape **32** adhering to the exterior surfaces of the flanges, but an adhesive that will bond to both the cornerbead and fiberglass mesh tape is applied to the interior surfaces of the flanges of the cornerbead, a second strip of fiberglass mesh tape is applied (adhesive side inward) to the adhesive on the interior surface of each flange, as described with reference to **FIG. 5**, and a paper backing tape (not shown) is applied over the interior surface of the second strip of fiberglass mesh tape, as also described with reference to **FIG. 5**. Such a construction ensures that the cornerbead will be held in place after being positioned over the gypsum wallboard but nevertheless permits the cornerbead to be removed and repositioned should adjustment be necessary. When the installer is satisfied with the position of the cornerbead, the installer applies joint compound over the flanges and the adjacent wallboard, in conventional fashion. The joint compound penetrates through the apertures in the mesh tape and the holes **48** in the flanges and spreads between the flanges and the drywall in the grooves **45**. When the joint compound has dried, the mesh tape is firmly integrated into the joint compound and the joint compound provides a firm permanent bond between the cornerbead and the wallboard. The mesh tape reinforces the joint compound and virtually eliminates the danger that the joint compound will crack under normal circumstances.

[0030] It will be appreciated that the invention is not restricted to the particular embodiment that has been described, and that variations may be made therein without departing from the scope of the invention as defined in the appended claims and equivalents thereof. For example, although it is preferred that strips of apertured tape be attached to both the exterior surface and the interior surface of the flange, it is not essential to the invention to employ a strip of apertured tape at the interior surface of the flange. In particular, it would be possible to apply a film of adhesive to the interior surface of the flange. The holes in the flange would still allow the joint compound to penetrate the flange and bond the cornerbead to the drywall. Unless the context indicates otherwise, a reference in a claim to the number of instances of an element, be it a reference to one instance or more than one instance, requires at least the stated number of instances but is not intended to exclude from the scope of the claim a structure having more instances of that element than stated.

1. A cornerbead for installation at a drywall outside corner, the cornerbead comprising:

a substrate forming a nose and first and second elongated flanges, each flange having an exterior surface and an interior surface and having an inner edge and an opposing outer edge, each flange joining an opposing side of the nose at the flange's respective inner edge, and the first flange being formed with holes penetrating from the exterior surface to the interior surface,

a strip of apertured tape adhered to the first elongated flange at the exterior surface thereof, the strip of tape extending longitudinally of the first flange and a portion of the strip of tape extending past the outer edge of the first flange, and

a layer of adhesive at the interior surface of the first flange, whereby upon placing the cornerbead at a drywall outside corner the layer of adhesive attaches the cornerbead to the drywall,

and wherein the strip of apertured tape has a coating of adhesive material on a side that faces towards the first flange and the layer of adhesive at the interior surface of the first flange is penetrated by apertures, whereby joint compound that is applied to the first flange over the strip of apertured tape penetrates the apertured tape, the first flange and the layer of adhesive and bonds the cornerbead to the drywall.

2. A cornerbead according to claim 1, wherein the cornerbead further comprises a layer of coatable material on areas of the substrate's exterior surface not covered by the first strip of tape, and the layer of coatable material provides an improved surface for retaining paint compared to said exterior surface.

3. A cornerbead according to claim 2, wherein the substrate comprises vinyl plastic and the coatable material comprises a polyurethane foam.

4. A cornerbead according to claim 1, wherein said strip of apertured tape is a strip of self-adhesive fiberglass mesh tape.

5. A cornerbead according to claim 1, wherein said strip of apertured tape is a first strip of apertured tape, the cornerbead further comprises a second strip of apertured tape adhered to the first elongated flange at the interior surface thereof, the second strip of tape extending longitudinally of the first flange, and said layer of adhesive is a coating of adhesive material on a side of the second strip that faces away from the first flange.

6. A cornerbead according to claim 5, wherein the second flange is formed with holes penetrating from the exterior surface of the second flange to the interior surface thereof.

7. A cornerbead according to claim 6, comprising:

a third strip of apertured tape adhered to the second elongated flange at the interior surface thereof, the third strip of tape extending longitudinally of the second flange and a portion of the third strip of tape extending past the outer edge of the second flange, and

a fourth strip of apertured tape adhered to the second elongated flange at the exterior surface thereof, the fourth strip of tape extending longitudinally of the second flange and a portion of the fourth strip of tape extending past the outer edge of the second flange,

and wherein the third strip has a coating of adhesive material on a side that faces away from the second flange and the fourth strip has a coating of adhesive material on a side that faces towards the second flange.

8. A cornerbead according to claim 7, wherein the substrate comprises plastic material, the cornerbead further comprises a layer of coatable material on areas of the substrate's exterior surface not covered by the second and fourth strips of tape, and the layer of coatable material provides an improved surface for retaining paint compared to said exterior surface.

9. A cornerbead according to claim 8, wherein the substrate comprises vinyl plastic and the coatable material comprises a polyurethane foam.

10. A cornerbead according to claim 7, wherein said third and fourth strips of tape are strips of self-adhesive fiberglass mesh tape.

11. A cornerbead according to claim 7, wherein the cornerbead further comprises a layer of paper on areas of the substrate's exterior surface not covered by the second and fourth strips of tape, the substrate comprises acrylic plastic, and the layer of paper provides an improved surface for retaining paint compared to said exterior surface.

12. A cornerbead according to claim 1, wherein the substrate comprises synthetic resin material and the first flange is formed with recesses at its interior surface and the holes in the first flange open into the recesses.

13. A cornerbead according to claim 12, wherein the recesses are grooves that extend longitudinally of the first flange.

14. A method of manufacturing a self-adhering cornerbead, the method comprising the steps of:

forming an elongate substrate of uniform cross-section, said substrate including a nose, a first flange and a second flange, each flange having an exterior surface and an interior surface, and having an inner edge and an outer edge, each flange joining an opposing side of the nose at the flange's respective inner edge, and the first flange being formed with holes penetrating from the exterior surface to the interior surface,

adhering a strip of apertured tape longitudinally along the exterior surface of the first flange such that a portion of the strip extends beyond the outer edge of the first flange, and

applying a layer of adhesive to the interior surface of the first flange, whereby upon placing the cornerbead at a drywall outside corner the layer of adhesive attaches the cornerbead to the drywall,

and wherein the strip of apertured tape has a coating of adhesive material on a side that faces towards the first flange and the layer of adhesive at the interior surface of the first flange is penetrated by apertures, whereby joint compound that is applied to the first flange over

the strip of apertured tape penetrates the apertured tape, the first flange and the layer of adhesive and bonds the cornerbead to the drywall.

15. A method according to claim 14, wherein said strip of apertured tape is a first strip of apertured tape, the cornerbead further comprises a second strip of apertured tape adhered to the first elongated flange at the interior surface thereof, the second strip of tape extending longitudinally of the first flange, and said layer of adhesive is a coating of adhesive material on a side of the second strip that faces away from the first flange.

16. A method according to claim 14, wherein the step of adhering the strip of apertured tape to the first flange comprises:

passing the first flange through a set of opposing rollers, and

simultaneously passing the strip of tape through the set of opposing rollers,

wherein the opposing rollers exert pressure on the first flange and the strip of tape, causing the strip of tape to adhere to the first flange.

17. A method according to claim 16, wherein the strip of tape comprises a layer of adhesive material on a side of the strip of tape and the opposing pressure from said set of opposing rollers causes the adhesive material to adhere the strip of tape to the first flange.

18. A method according to claim 16, wherein the substrate is made of plastic and the opposing pressure from said set of opposing rollers causes the first strip of tape to be embedded in the first flange.

19. A method according to claim 16, further comprising the step of removeably applying a protective backing to the coating of adhesive material on the side of the first strip of tape that faces said first flange.

20. A method according to claim 19, wherein the step of removeably applying the protective backing comprises the steps of:

passing said first strip of tape through a set of opposing rollers, and

simultaneously passing the protective backing through the set of opposing rollers,

wherein the opposing rollers exert opposing pressure on said first strip of tape and the protective backing, causing the protective backing to adhere to said first strip of tape.

21. A method according to claim 14, wherein the substrate is made of plastic and the method further comprises the step of applying a layer of a coatable material to areas of the substrate not covered by the first strip of tape, wherein the layer of coatable material provides an improved surface for retaining paint compared to the plastic substrate's exterior surface.

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