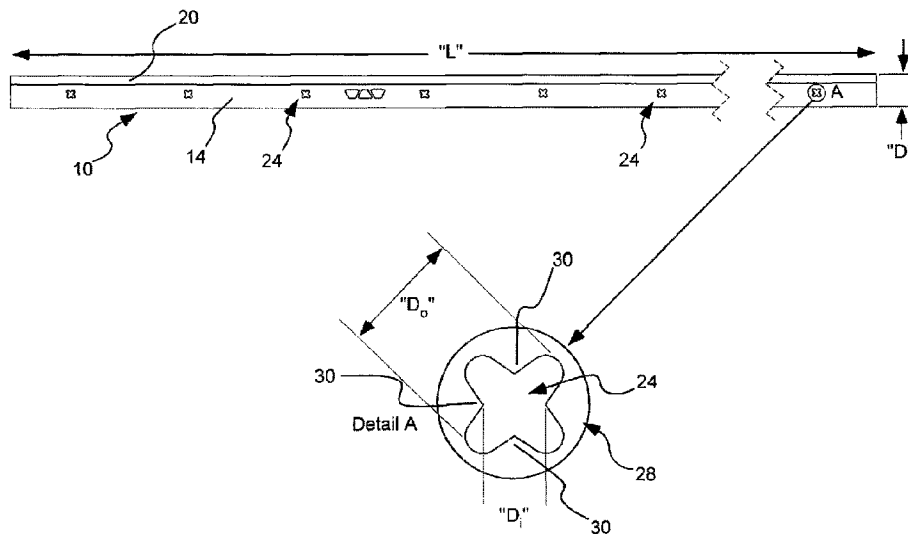




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(72) Inventeurs/Inventors:  
ERICKSON, KYLE, US;  
VAN BRUNT, K. BRADLEY, JR., US;  
ZALIS, ROY A., US;  
PLANK, PETER, US  
(73) Propriétaire/Owner:  
SCHLUTER SYSTEMS (CANADA) INC., CA  
(74) Agent: BERESKIN & PARR LLP/S.E.N.C.R.L.,S.R.L.

(54) Titre : PROFIL DE PLACAGE AVEC DISPOSITIF DE FIXATION ET PROCESSES CONNEXES  
(54) Title: VENEER PROFILE WITH FASTENING FEATURE AND RELATED METHODS



(57) **Abrégé/Abstract:**

An elongate profile for terminating a veneer component includes a fastening leg configured to be installed against a base surface. An edge leg extends from the fastening leg and is configured to provide a covering edge for a veneer component installed against the fastening leg. The fastening leg includes at least one fastener opening formed therethrough, the fastener opening configured to receive a fastener therethrough such that the fastener can couple the fastening leg to the base surface as it extends through the fastener opening and engages the base surface. A deformation region is formed in the fastening leg adjacent the fastener opening and is operable to deform as the fastener is driven into the base surface through the fastener opening such that at least a portion of material of the deformation zone extends into the base surface as the fastener is driven into the base surface.

## **ABSTRACT OF THE DISCLOSURE**

An elongate profile for terminating a veneer component includes a fastening leg configured to be installed against a base surface. An edge leg extends from the fastening leg and is configured to provide a covering edge for a veneer component installed against the fastening leg. The fastening leg includes at least one fastener opening formed therethrough, the fastener opening configured to receive a fastener therethrough such that the fastener can couple the fastening leg to the base surface as it extends through the fastener opening and engages the base surface. A deformation region is formed in the fastening leg adjacent the fastener opening and is operable to deform as the fastener is driven into the base surface through the fastener opening such that at least a portion of material of the deformation zone extends into the base surface as the fastener is driven into the base surface.

## Veneer Profile with Fastening Feature and Related Methods

### BACKGROUND OF THE INVENTION

#### Field of the Invention

The present invention relates generally to profiles used to provide a finished  
5 edge to veneer materials.

#### Related Art

Profiles have been used for some time to provide an aesthetically appealing and  
structurally sound edge for veneer components. While such profiles are known in the  
10 art, existing profiles suffer from a variety of problems. In particular, it can be difficult to  
properly position some profiles atop some base surfaces and beneath some veneer  
components during installation of the materials.

### SUMMARY OF THE INVENTION

15 In accordance with one aspect of the technology, an elongate profile for  
terminating a veneer component is provided. The profile can include a fastening leg  
configured to be installed against a base surface. An edge leg can extend from the  
fastening leg and can be configured to provide a covering edge for a veneer component  
installed against the fastening leg. The fastening leg can include at least one fastener  
20 opening formed therethrough. The fastener opening can be configured to receive a  
fastener therethrough such that the fastener can couple the fastening leg to the base  
surface as it extends through the fastener opening and engages the base surface. A

deformation region can be formed in the fastening leg adjacent the fastener opening. The deformation region can be operable to deform as the fastener is driven into the base surface through the fastener opening such that at least a portion of material of the deformation zone extends into the base surface as the fastener is driven into the base surface.

5 In accordance with another aspect of the technology, an elongate profile for terminating a veneer component is provided, including a fastening leg configured to be installed against a base surface. An edge leg can extend from the fastening leg and can be configured to provide a covering edge for a veneer component installed against the fastening leg. The fastening leg can include at least one fastener opening formed therethrough. The fastener opening can be configured to receive a fastener therethrough such that the fastener can couple the fastening leg to the base surface as it extends through the fastener opening and engages the base surface. A deformation region can be formed in the fastening leg adjacent the fastener opening. The deformation region can be operable to deform as the fastener is driven into the base surface through the fastener opening such that at least a portion of material of the deformation zone extends into the base surface as the fastener is driven into the base surface. The deformation region can include a series of teeth extending from an outer section of the deformation region inwardly toward the fastener opening. The deformation region can include a flat profile prior to introduction of the fastener through the fastener opening such that substantially all material of the deformation region is flush with or above a lower surface of the fastener leg prior to engagement of the base surface with the fastener.

In accordance with another aspect of the technology, a method is provided of installing an elongate profile for terminating one or more veneer components above a base surface. The method can include positioning a fastening leg of the profile against a base surface, the profile including an edge leg extending from the fastening leg and  
5 being configured to provide a covering edge for a veneer component installed against the fastening leg. The fastener can be installed into the base surface through a fastener opening formed through the fastening leg. A head of the fastener can engage a deformation region formed in the fastening leg adjacent the fastener opening to thereby deform at least a portion of the deformation region as the fastener is driven into the  
10 base surface through the fastener opening such that at least a portion of material of the deformation region extends into and engages the base surface as the fastener is driven into the base surface.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

15 The following drawings illustrate exemplary embodiments for carrying out the invention. Like reference numerals refer to like parts in different views or embodiments of the present invention in the drawings.

FIG. 1A is a top view of a profile in accordance with an aspect of the technology;

FIG. 1B is an end view of the profile of FIG. 1;

20 FIG. 2 is a partially sectioned view of the profile of FIG. 1, shown attached to a base surface with a veneer component installed therein;

FIG. 3A is an end view of a section of another profile in accordance with an embodiment of the technology;

FIG. 3B is a top view of a portion of one embodiment of a profile in accordance with FIG. 3A;

FIG. 3C is a top view of a portion of another embodiment of a profile in accordance with FIG. 3A;

5 FIG. 4A is an end view of a section of another profile in accordance with an embodiment of the technology;

FIG. 4B is a top view of a portion of a profile in accordance with one embodiment of FIG. 4A;

10 FIG. 5 is an end view of another profile in accordance with an aspect of the technology;

FIG. 6 is an end view of another profile in accordance with an aspect of the technology; and

FIG. 7 is an end view of another profile in accordance with an aspect of the technology.

15

### **DETAILED DESCRIPTION**

Reference will now be made to the exemplary embodiments illustrated in the drawings, and specific language will be used herein to describe the same. It will nevertheless be understood that no limitation of the scope of the invention is thereby intended. Alterations and further modifications of the inventive features illustrated herein, and additional applications of the principles of the inventions as illustrated herein, which would occur to one skilled in the relevant art and having possession of this disclosure, are to be considered within the scope of the invention.

## **Definitions**

As used herein, the singular forms “a” and “the” can include plural referents unless the context clearly dictates otherwise. Thus, for example, reference to “a fastener opening” can include one or more of such openings, if the context so dictates.

As used herein, the term “substantially” refers to the complete or nearly complete extent or degree of an action, characteristic, property, state, structure, item, or result. As an arbitrary example, an object that is “substantially” enclosed is an article that is either completely enclosed or nearly completely enclosed. The exact allowable degree of deviation from absolute completeness may in some cases depend upon the specific context. However, generally speaking the nearness of completion will be so as to have the same overall result as if absolute and total completion were obtained. The use of “substantially” is equally applicable when used in a negative connotation to refer to the complete or near complete lack of an action, characteristic, property, state, structure, item, or result. As another arbitrary example, a composition that is “substantially free of” an ingredient or element may still actually contain such item so long as there is no measurable effect as a result thereof.

As used herein, the term “about” is used to provide flexibility to a numerical range endpoint by providing that a given value may be “a little above” or “a little below” the endpoint.

Relative directional terms can sometimes be used herein to describe and claim various components of the present invention. Such terms include, without limitation, “upward,” “downward,” “horizontal,” “vertical,” etc. These terms are generally not

intended to be limiting, but are used to most clearly describe and claim the various features of the invention. Where such terms must carry some limitation, they are intended to be limited to usage commonly known and understood by those of ordinary skill in the art in the context of this disclosure. In some instances, dimensional information may be included in the figures. This information is intended to be exemplary only, and not limiting. In some cases, the drawings are not to scale and such dimensional information may not be accurately translated throughout the figures.

As used herein, a plurality of items, structural elements, compositional elements, and/or materials may be presented in a common list for convenience. However, these lists should be construed as though each member of the list is individually identified as a separate and unique member. Thus, no individual member of such list should be construed as a *de facto* equivalent of any other member of the same list solely based on their presentation in a common group without indications to the contrary.

Numerical data may be expressed or presented herein in a range format. It is to be understood that such a range format is used merely for convenience and brevity and thus should be interpreted flexibly to include not only the numerical values explicitly recited as the limits of the range, but also to include all the individual numerical values or sub-ranges encompassed within that range as if each numerical value and sub-range is explicitly recited. As an illustration, a numerical range of "about 1 to about 5" should be interpreted to include not only the explicitly recited values of about 1 to about 5, but also include individual values and sub-ranges within the indicated range. Thus, included in this numerical range are individual values such as 2, 3, and 4 and sub-ranges such as from 1-3, from 2-4, and from 3-5, etc., as well as 1, 2, 3, 4, and 5,

individually.

This same principle applies to ranges reciting only one numerical value as a minimum or a maximum. Furthermore, such an interpretation should apply regardless of the breadth of the range or the characteristics being described.

5

### **Invention**

The present technology relates generally to profile systems used to terminate edges of veneer components installed against base surfaces. Examples of veneer materials with which the present technology can be beneficially used include, without  
10 limitation, vinyl flooring or wall products, wood or simulated wood flooring or wall products, ceramic, stone or porcelain tiles, etc. Generally, the present profiles are designed to be fastened to a base surface, after which a veneer material is installed above a leg of the profile.

FIGs. 1A and 1B illustrate an exemplary embodiment of the present technology.  
15 In this example, an elongate profile 10 is provided for terminating a veneer component or material (12 in FIG. 2). The profile can include a fastening leg 14 that can be configured to be installed against a base surface (16 in FIG. 2). The base surface can be, for example, a subfloor, a stair riser, a stair tread, a countertop, etc. Generally, the base surface is formed from a material suitable for receiving a threaded fastener (see  
20 26, for example, in FIGs. 2, 3A, 4A, 5, 6 and 7) therein, such as wood, composite materials, etc. Generally, the fastening leg 14 is installed against the base surface 16, after which the veneer component 12 is installed against the base surface and against (or atop, in a horizontal installation) the fastening leg 14.

The profile 10 can also include an edge leg 18 that can extend from the fastening leg. The edge leg can be configured to provide a covering edge for the veneer component installed against the fastening leg. The edge leg can serve to both provide an aesthetically pleasing finished edge to the veneer material and to provide a

5 structurally sound edge that is more durable than the generally unfinished edge of the veneer component. In some embodiments, the profile 10 can also include a cover leg 20. The cover leg can extend from the edge leg 18 in a direction substantially parallel with the fastening leg 14. In this manner, the cover leg and the fastening leg can collectively define a receiving pocket 22 in which the veneer component 12 can be

10 positioned. As the veneer component is positioned within the receiving pocket, adhesive 38 (FIG. 2) can attach the veneer component to the base surface 16. In this arrangement, the fastening leg, edge leg and cover leg create an envelope in which an unfinished edge of the veneer component or material is secured once the installation is complete.

15 The fastening leg 14 can include at least one fastener opening 24 formed therethrough. The fastener opening can be configured to receive a fastener 26 therethrough such that the fastener can couple the fastening leg to the base surface 16 as it extends through the fastener opening and engages the base surface. A variety of fasteners can be used with the present technology, but in one embodiment the fastener

20 can include threads that threadably engage the base surface against which the fastening leg is installed. The type of fastener can be selected based upon the material from which the base surface is formed. In the case the base surface is wood, or a similar material, the fastener can be a wood screw.

The fastening leg 14 can include a deformation region or zone 28 formed therein. The deformation region, which may or may not be visible from casual inspection of the fastening leg, can be formed in an area adjacent to or surrounding the fastener opening 24. The deformation region is generally operable to deform as the fastener 26 is driven into the base surface 16 through the fastener opening. In this manner, at least a portion of material of the deformation region can extend into the base surface as the fastener is driven into the base surface. As the material of the deformation region is forced into the base surface by the fastener, a secure interface is created between the fastening leg and the base surface. This can aid in preventing unwanted movement of the fastening leg relative to the base surface during or after installation of the veneer component 12.

In the embodiment illustrated in FIG. 2, the material of the deformation region 28 has been deformed during installation of the fastener 26. In this manner, portions 29 of the deformation region are securely embedded in the base surface 16 during installation of the fastener 26. After the fastener has been so secured, the veneer component 12 can be installed within the receiving pocket 22. As best shown in Detail A of FIG. 1A, in the embodiment shown in FIGs. 1A and 3B, the deformation region can include a series of teeth 30 extending from an outer section of the deformation region inwardly toward the fastener opening 24. In the initial condition (e.g., prior to securing the fastener through the fastener opening) the teeth assume the same planar arrangement of the fastener leg 14. As the fastener is rotated and forced downward due to the threaded engagement with base surface 16, an underside 34 of the head of the fastener 32 (see FIG. 3A) contacts the deformation region and forces it downward. This results in

material deformation in that region, achieving optimal engagement with the base surface.

Material selection and size of the profile 10, as well as the fastener openings 24 and deformation region 28, can vary. In one exemplary embodiment, the profile is provided with a length "L" on the order of about 2500 mm (98.4 inches). A thickness "T" of the fastener leg 14, measured near the deformation region, can be about 0.7 mm (0.028 inches). A depth "D" of the profile can be on the order of about 22 mm (0.87 inches). As shown in Detail A of FIG. 1A, the fastener opening can have a diameter "Di" of about 3.5 mm (0.138 inches). Bases of the teeth 30 can be arranged on a diameter "Do" of about 7 mm (0.276 inches). In one aspect, the profile can be formed from anodized aluminum. Using these exemplary dimensions, it has been found that a number 6 wood screw performs well in both securing the fastening leg 14 to the base surface 16 and at deforming the material of the deformation region 28 as intended.

As possibly best seen in FIG. 1B, in one aspect of the technology, the deformation region 28 has a flat profile prior to introduction of the fastener 26 through the fastener opening 24. In this manner, substantially all material of the deformation region is flush with or above a lower surface 14b of the fastener leg prior to engagement of the base surface 16 with the fastener 26. As this lower surface of the fastener leg is smooth across the deformation region, the fastener leg can be smoothly slid across the base surface and easily positioned where desired.

Similarly, substantially all material of the deformation region 28 can be flush with or below an upper surface 14a of the fastener leg 14 prior to engagement of the base surface 16 with the fastener. As this upper surface of the fastener leg is smooth across

the deformation region, a veneer component or material can be smoothly slid across the fastener leg and easily positioned where desired before attachment of the fastener leg. In the example shown, the fastener can be installed such that an uppermost portion of the fastener head 32 is installed flush with or below the upper surface of the fastener leg. Thus, even after attachment of the fastening leg to the base surface, the veneer component can be easily slid into the receiving pocket 22 and easily adjusted lengthwise or laterally within the receiving pocket.

While not so required, in one aspect of the invention, the fastener opening 24 can include an inside diameter "Di" that is about equal to or larger than an outside diameter of the threads or shank portion of the fastener 26. In this manner, the deformation region is not deformed by installation of the fastener through the fastener opening, but is rather deformed by pressure applied to the deformation zone by the underside 34 of the head 32 of the fastener as the fastener is forced into the base surface 16.

The deformation region 28 can be created in the fastening leg 14 in a variety of manners. In the embodiment illustrated in FIGs. 1A and 3B, the deformation region includes a series of teeth 30 that deform as the fastener is driven into the base surface 16. These teeth can be formed in the fastening leg via a punch process, taking care in some embodiments to maintain the overall flatness of the fastening leg. In the embodiment illustrated in FIG. 3C, for example, profile 10a includes a deformation region 28a that can include a series of weakened zones 36 formed in the fastening leg adjacent the fastener opening. These weakened zones can be formed in a variety of manners and can include a series of slits formed in the fastener leg material, or a series of perforations. These weakened zones may or may not form clearly visible breaks in

the material of the fastening leg. However, sufficient weakness is introduced by their presence in the material of the fastening leg so as to result in the deformation region deforming as the fastener 26 is driven into the base surface 16.

As referenced earlier, the deformation region 28 can include a thickness that is substantially the same as a thickness of the fastening leg 14 adjacent the fastener opening 24. In the embodiment illustrated in FIG.s 4A and 4B, however, profile 10b includes a deformation zone 28b that includes a thickness that is smaller than a thickness of the fastening leg 14 adjacent the fastener opening 24. This smaller cross section can achieve deformation without requiring that teeth or weakened slots or perforations be formed in the fastening leg material. In addition to, or alternately, the deformation region can include a material differing from a material of the fastening leg adjacent the fastener opening. For example, the deformation region can be formed by inserting into the deformation region a material weaker than the surrounding fastening leg material.

FIGs. 5-7 illustrate varying arrangements of profiles in accordance with alternate embodiments of the technology. In the example shown in FIG. 5, profile 10c includes a pair of edge legs 18a, 18b. Profile 10c can be advantageously used in applications where veneer components are installed on two base surfaces that meet in an outside corner. In the example shown in FIG. 6, profile 10d includes an edge leg 18c that extends downwardly from an upper portion of edge leg 18. This embodiment can be advantageously used in applications where the veneer component is installed at a higher elevation than an adjacent surface. In the example shown in FIG. 7, profile 10e can be advantageously used in applications such as stair treads. The cover leg 20a in

this example can include a series of ridges or serrations 40 that can improve a frictional interface for a user walking on the profile. Edge leg 18d can extend below fastening leg 14 to provide a more secure engagement with an edge of a base surface (e.g., stair tread).

5            In addition to the structural features discussed above, the present technology can also provide a method of installing an elongate profile for terminating one or more veneer components above a base surface. The method can include positioning a fastening leg of the profile against a base surface, the profile including an edge leg extending from the fastening leg and being configured to provide a covering edge for a  
10 veneer component installed against the fastening leg. A fastener can be installed into the base surface through a fastener opening formed through the fastening leg. A head of the fastener can engage a deformation region formed in the fastening leg adjacent the fastener opening to thereby deform at least a portion of the deformation region as the fastener is driven into the base surface through the fastener opening such that at  
15 least a portion of material of the deformation region extends into and engages the base surface as the fastener is driven into the base surface.

          In one aspect, the deformation region can include a flat profile prior to introduction of the fastener through the fastener opening such that substantially all material of the deformation region is flush with or above a lower surface of the fastener  
20 leg prior to engagement of the base surface with the fastener. Installing the fastener can include positioning an uppermost portion of the fastener substantially flush with or below an upper surface of the fastener leg. The fastener opening can include an inside diameter larger than an outside diameter of the fastener. The base surface can be at

least partially formed from a wooden material, and installing the fastener can include installing a wood screw in the base surface.

It is to be understood that the above-referenced arrangements are illustrative of the application for the principles of the present invention. Numerous modifications and  
5 alternative arrangements can be devised without departing from the spirit and scope of the present invention while the present invention has been shown in the drawings and described above in connection with the exemplary embodiments(s) of the invention. It will be apparent to those of ordinary skill in the art that numerous modifications can be made without departing from the principles and concepts of the invention as set forth in  
10 the examples.

## **CLAIMS**

We claim:

1. An elongate profile installation for terminating a veneer component,

comprising:

5 a fastening leg installed against a base surface;

an edge leg, extending from the fastening leg and being configured to provide a covering edge for a veneer component installed against the fastening leg;

the fastening leg including at least one fastener opening formed therethrough prior to the introduction of a fastener, the fastener opening receiving a fastener

10 therethrough such that the fastener couples the fastening leg to the base surface as it extends through the fastener opening and engages the base surface, an uppermost portion of a head of the fastener being substantially flush with an upper surface of the fastening leg; and

a deformation region formed in the fastening leg adjacent the fastener opening,  
15 the deformation region being deformed by the fastener as it was driven into the base surface through the fastener opening such that at least a portion of material of the deformation zone extends into the base surface after the fastener has been driven into the base surface; wherein

a lower surface of the deformation region has a flat profile prior to introduction of  
20 the fastener through the fastener opening such that substantially all material of the deformation region is flush with or above a lower surface of the fastening leg prior to engagement of the base surface with the fastener.

2. The profile of claim 1, wherein substantially all material of the deformation region is flush with or below an upper surface of the fastening leg prior to engagement of the base surface with the fastener.

5

3. The profile of claim 1, further comprising a cover leg, extending from the edge leg in a direction substantially parallel with the fastening leg, the cover leg and the fastening leg collectively defining a receiving pocket in which a veneer component can be positioned.

10

4. The profile of claim 1, wherein the deformation region includes a series of teeth extending from an outer section of the deformation region inwardly toward the fastener opening.

15

5. The profile of claim 1, wherein the deformation region includes a series of weakened zones formed in the fastening leg adjacent the fastener opening.

6. The profile of claim 1, wherein the deformation region includes a thickness, and wherein the thickness of the deformation region is substantially the same as a thickness of the fastening leg adjacent the fastener opening.

20

7. The profile of claim 1, wherein the deformation region includes a thickness, and wherein the thickness of the deformation region is smaller than a thickness of the fastening leg adjacent the fastener opening.

5           8. The profile of claim 1, wherein the deformation region includes a material differing from a material of the fastening leg adjacent the fastener opening.

9. An elongate profile installation for terminating a veneer component, comprising:

10           a fastening leg installed against a base surface;

              an edge leg, extending from the fastening leg and being configured to provide a covering edge for a veneer component installed against the fastening leg;

              the fastening leg including at least one fastener opening formed therethrough, the fastener opening receiving a fastener therethrough such that the fastener couples  
15 the fastening leg to the base surface as it extends through the fastener opening and engages the base surface, an uppermost portion of a head of the fastener being substantially flush with an upper surface of the fastening leg;

              a deformation region formed in the fastening leg adjacent the fastener opening, the deformation region being deformed by the fastener as it was driven into the base  
20 surface through the fastener opening such that at least a portion of material of the deformation zone extends into the base surface after the fastener has been driven into the base surface;

the deformation region including a series of teeth extending from an outer section of the deformation region inwardly toward the fastener opening; and

a lower surface of the deformation region including a flat profile prior to introduction of the fastener through the fastener opening such that substantially all material of the deformation region is flush with or above a lower surface of the fastener leg prior to engagement of the base surface with the fastener.

10. The profile of claim 9, wherein substantially all material of the deformation region is flush with or below an upper surface of the fastener leg prior to engagement of the base surface with the fastener.

11. The profile of claim 9, further comprising a cover leg, extending from the edge leg in a direction substantially parallel with the fastening leg, the cover leg and the fastening leg collectively defining a receiving pocket in which a veneer component can be positioned.

12. The profile of claim 9, wherein the deformation region includes a series of weakened zones formed in the fastening leg adjacent the fastener opening.

13. The profile of claim 9, wherein the deformation region includes a thickness, and wherein the thickness of the deformation region is substantially the same as a thickness of the fastening leg adjacent the fastener opening.

14. The profile of claim 9, wherein the deformation region includes a thickness, and wherein the thickness of the deformation region is smaller than a thickness of the fastening leg adjacent the fastener opening.

5

15. A method of installing an elongate profile for terminating one or more veneer components above a base surface, the method comprising:

positioning a fastening leg of the profile against a base surface, the profile including an edge leg extending from the fastening leg and being configured to provide  
10 a covering edge for a veneer component installed against the fastening leg;

installing a fastener into the base surface through a fastener opening formed through the fastening leg such that an uppermost portion of a head of the fastener is substantially flush with an upper surface of the fastening leg, the fastener opening formed through the fastening leg prior to introduction of the fastener; and

15 engaging with a lower portion of the head of the fastener a deformation region formed in the fastening leg adjacent the fastener opening to thereby deform at least a portion of the deformation region as the fastener is driven into the base surface through the fastener opening such that at least a portion of material of the deformation region extends into and engages the base surface as the fastener is driven into the base  
20 surface;

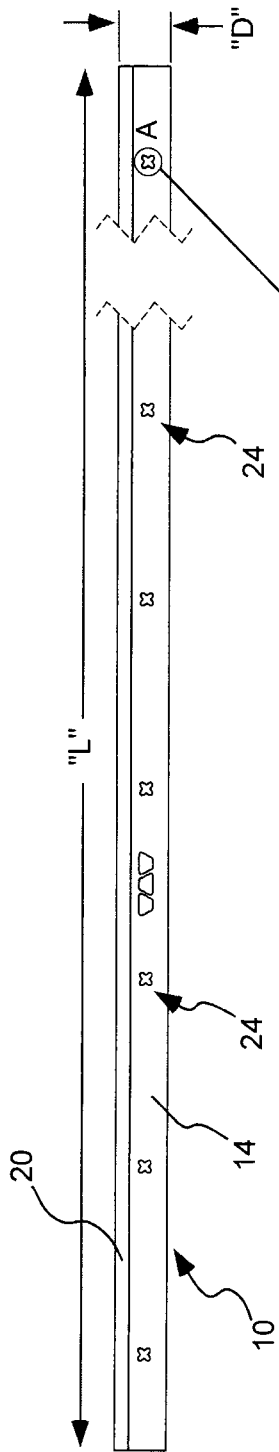
wherein a lower surface of the deformation region has a flat profile prior to introduction of the fastener through the fastener opening such that substantially all

material of the deformation region is flush with or above a lower surface of the fastener leg prior to deformation of the at least a portion of material of the deformation region into the base surface.

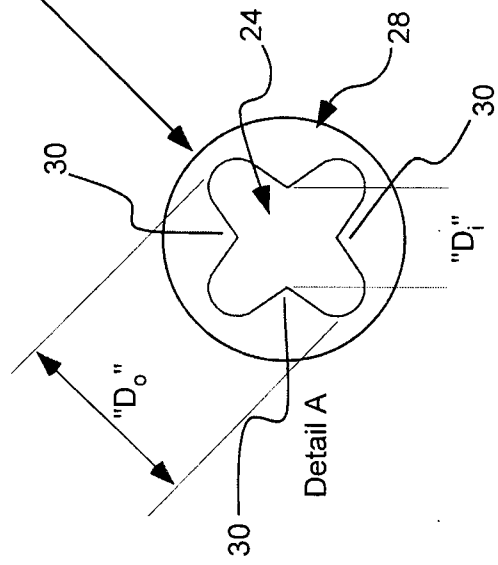
5            16. The method of claim 15, wherein the fastener opening includes an inside diameter equal to or larger than an outside diameter of the fastener shank or threads.

              17. The method of claim 15, wherein the base surface is at least partially formed from a wooden material, and wherein the fastener comprises a wood screw.

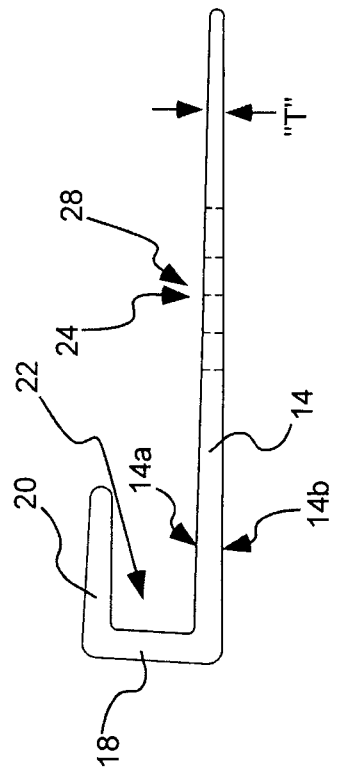
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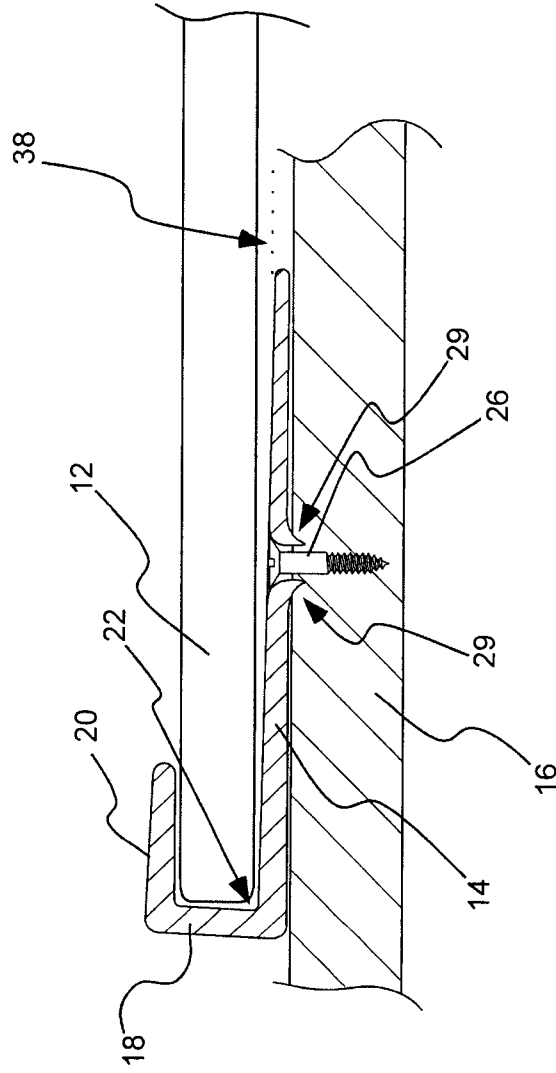


**FIG. 1A**

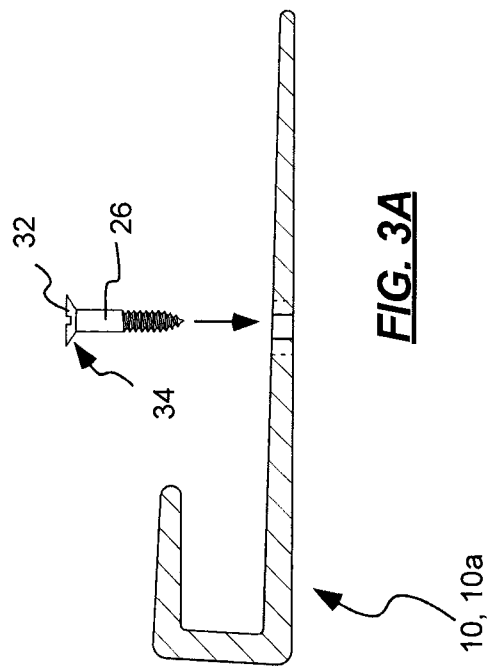


**FIG. 1B**

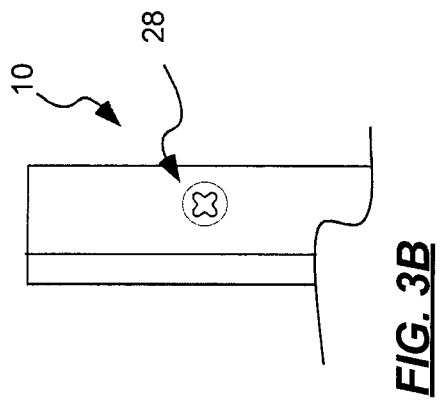




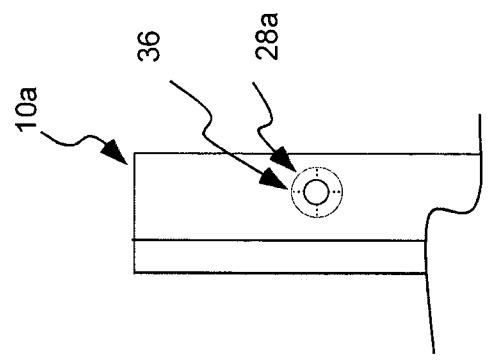
**FIG. 2**



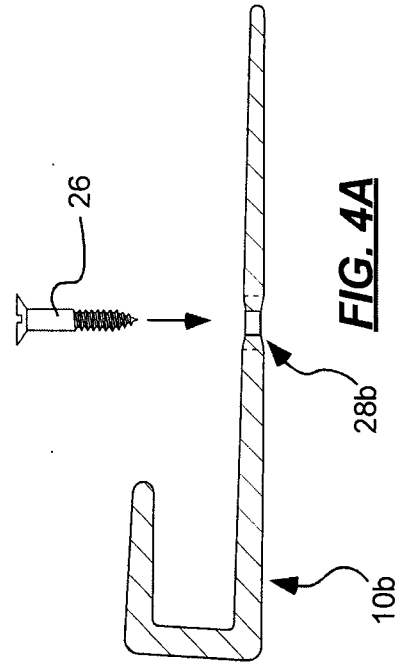
**FIG. 3A**



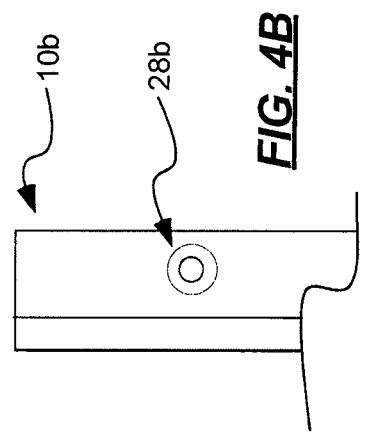
**FIG. 3B**



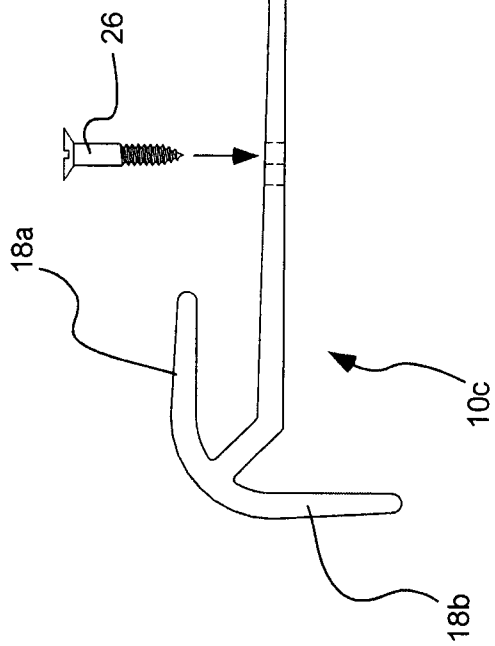
**FIG. 3C**



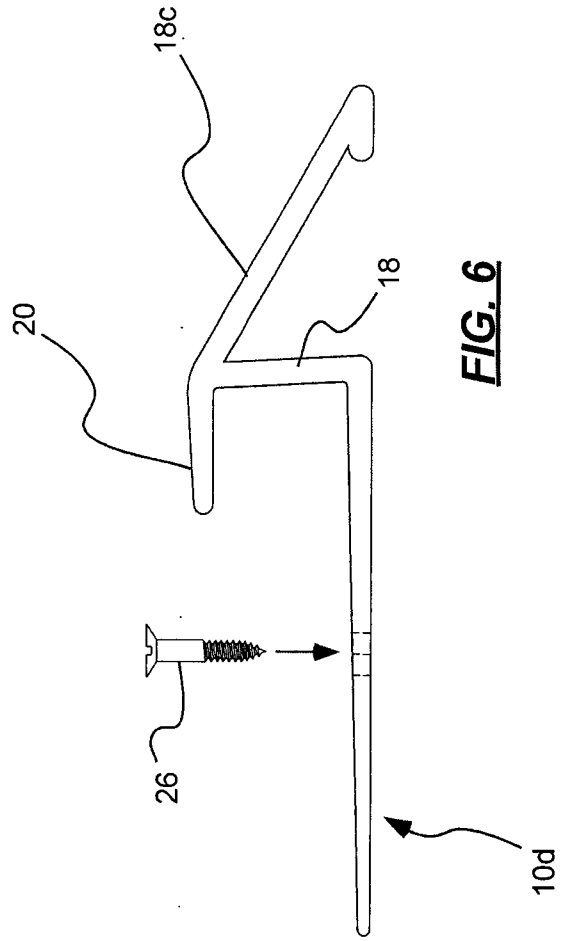
**FIG. 4A**



**FIG. 4B**

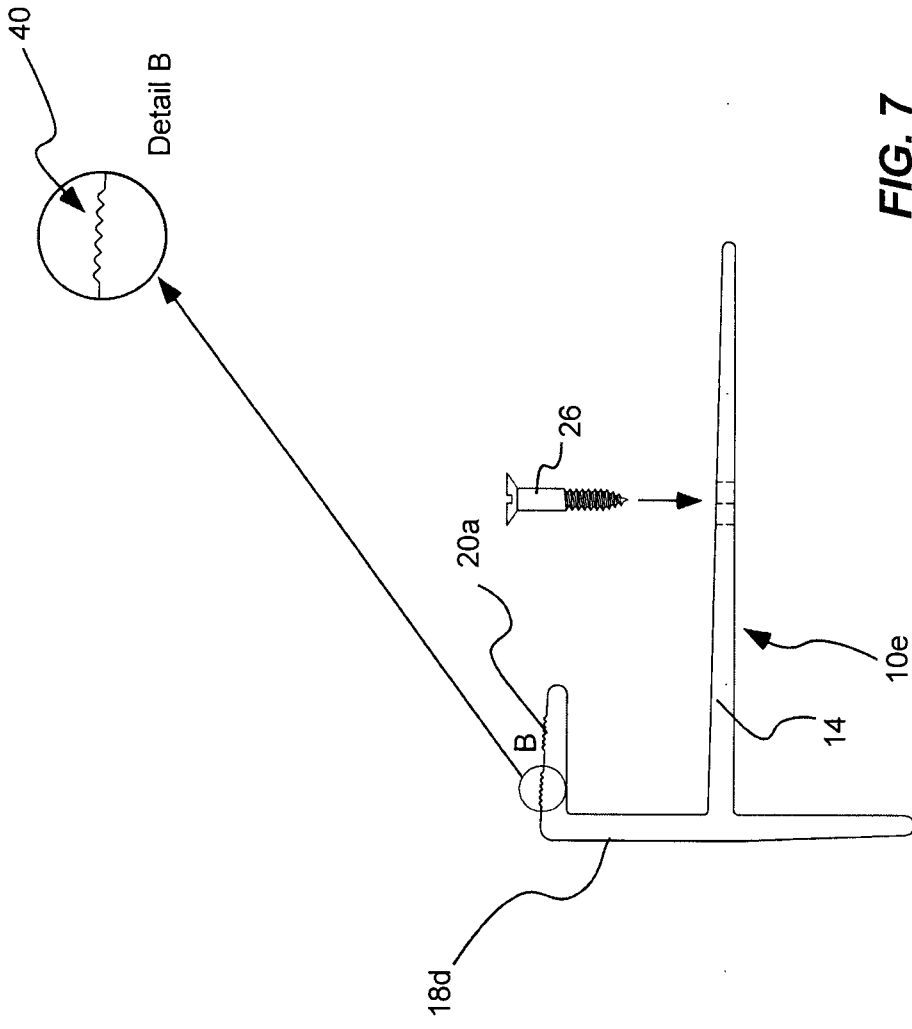


**FIG. 5**



**FIG. 6**

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**FIG. 7**

