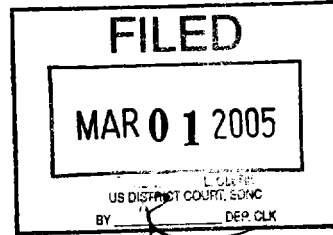


IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA



PERGO, INC.)
3128 Highwood Boulevard)
Suite 100)
Raleigh, North Carolina 27604)

and)

PERGO (EUROPE) AB)
Strandridaregatan 8)
S-23125 Trelleborg, Sweden)

Plaintiffs,)

v.)

FAUS GROUP, INC.)
1706 Highway 41 South)
Dalton, Georgia 30720)

and)

INDUSTRIAS AUXILIARES FAUS S.L.)
Avda De Almansa S/N)
46700 Gandia Valencia)
Spain)

Defendants.)

Civil Action No.:5:05-CV-50-FL(1)

AMENDED COMPLAINT

Pergo, Inc. and Pergo (Europe) AB (collectively “Pergo” or “plaintiffs”), by and through its attorneys, bring this action for patent and copyright infringement under federal law against Faus Group, Inc. and Industrias Auxiliares Faus S.L. (collectively “Faus” or “defendants”), and state as its Amended Complaint the following:

THE PARTIES

1. Pergo, Inc. is a corporation organized and existing under the laws of the State of Delaware, having a principal place of business at 3128 Highwood Boulevard, Suite 100, Raleigh, North Carolina 27604.
2. Pergo (Europe) AB is a Swedish corporation having its principal place of business at Strandridaregatan 8, S-23125 Trelleborg, Sweden.
3. Defendant Faus Group, Inc. is a corporation organized and existing under the laws of Georgia, having a principal place of business at 1706 Highway 41 South, Dalton, Georgia 30720.
4. Defendant Industrias Auxiliares Faus, S.R.L. is an alien corporation having a principal place of business at Avda De Almansa S/N, 46700 Gandia Valencia, Spain and is the corporate parent of Defendant Faus Group, Inc.

JURISDICTION

5. This court has subject matter jurisdiction under 28 U.S.C. § 1331 and 1338, as the controversy between plaintiffs and defendants arise under the Acts of Congress relating to the patent and copyright laws. Jurisdiction over the defendants is proper as they have jointly and severally committed infringing acts within and outside this district and have placed the infringing products into the stream of commerce with reasonable certainty that they would be sold in this district, thereby inducing and contributing to the continuing infringement by the purchasers of the infringing product. Venue is proper in this district pursuant to 28 U.S.C. § 1391(b)(c) and/or (d).

BACKGROUND

6. Over the past decade, Pergo has made significant contributions to the community of this district, first, by employing hundreds of local citizens, and generating hundreds of millions of dollars in sales in the last year alone. See Press Release of Governor Michael Easley (Exhibit 1)

7. On February 11, 2003, Pergo was granted U.S. Patent No. 6,517,935 (Exhibit 2) (hereinafter “the ‘935 patent”), directed to a method of manufacturing a floor strip and the product made by the method.

8. In June 2004, Pergo publicized plans to greatly expand its facilities in this district in order to utilize its exclusive process defined by the ‘935 patent to manufacture its patented Four-In-One product. This investment includes expansion of Pergo Inc.’s manufacturing facilities in this district, including the construction of a new manufacturing facility, resulting in the expected hiring of a significant number of additional local residents as employees. (Exhibits 1 and 3)

9. Pergo’s contributions to the local communities have been recognized throughout this District and the State of North Carolina, and as a result, local, state, and private entities are making investments in the community of this district through Pergo’s utilization of its exclusive processes for making its patented product. An example of this recognition and investment is shown in an article from the Garner News of June 16, 2004 (“Pergo announces major Garner expansion”). Exhibit 3

10. Pergo's investment is important to North Carolina and this District. On speaking of Pergo's recent investment in this district, U.S. House of Representatives member Bob Etheridge (D-Lillington) stated, "This is great news for Garner! These high-quality jobs will bring opportunity to our community and hope to many working families. Pergo is investing not only in North Carolina, but in our workers, our families, and our communities." (Exhibit 4)

11. On October 19, 2004, Pergo was granted U.S. Patent No. 6,805,951 (Exhibit 5) (hereinafter "the '951 patent"), also directed to a method of manufacturing a floor strip and the product made by the method to be produced at Pergo's facilities in this district. Together with the rights guaranteed by the '935 patent, the '951 patent protects Pergo's investment in the exclusive processes and patented products to be manufactured at the new facilities in this district.

12. On March 1, 2005, Pergo was granted U.S. Patent No. 6,860,074 (Exhibit 6) (hereinafter "the '074 patent") directed to a floor strip to be produced at Pergo's facilities within this district, and a method of use thereof. Together with the rights guaranteed by the '935 and '951 patents, the '074 patent protects Pergo's investment in the exclusive patented products and method.

13. In the absence of an injunction, the actions of defendants, as detailed below, jeopardize Pergo's investment, and the impact to Pergo's reputation, market foreclosure, distribution channels and a separate impact on the and the local community which cannot be fully compensated with monetary damages.

FACTUAL ALLEGATIONS SUPPORTING ALL COUNTS

14. Pergo, Inc. is the owner of a federal copyright registration, Registration No. TX-5-965-851, for packaging containing copyrighted matter in the form of a “backerboard” for its Simple Solutions™ Four-In-One product.

15. Pergo (Europe) AB is the owner of U.S. Patent Nos. 6,517,935, issued February 11, 2003, 6,805,951, issued October 19, 2004, and 6,860,074, issued March 1, 2005, protecting the Four-In-One product.

16. U.S. Patent Nos. 6,517,935, 6,805,951 and 6,860,074 are valid.

17. U.S. Patent Nos. 6,517,935, 6,805,951 and 6,860,074 are in force.

18. Defendants have been aware of Pergo (Europe) AB’s patent rights and have been on notice of Pergo, Inc.’s rights in the copyrighted matter of their backerboard for their Four-In-One product.

19. With knowledge of plaintiff’s rights, defendants manufactured the patented product via the patented method and copied the copyrighted material of plaintiffs’ backerboard in the sale of a product manufactured in Spain and sold this product in the United States under the FasTrim brand.

COUNT 1
(Patent Infringement of U.S. Patent No. 6,517,935)

20. Plaintiffs incorporate by reference the allegations in paragraphs 1 through 19 as though fully set forth herein.

21. Industrias Auxiliares Faus S.L. manufactures the FasTrim product in Spain by a process which infringes the claims of U.S. Patent No. 6,517,935.

22. Defendants, jointly and severally, by themselves or through the use of their agents, import into the United States the products made by the patented process of the '935 patent.

23. Defendant, jointly and severally, by themselves or through the use of their agents, placed products infringing the claims of the '935 patent into the stream of commerce with reasonable certainty that they would be sold in this district.

24. The FasTrim brand product is sold in this district.

25. The sale by defendants of the FasTrim product induces the purchasers to also infringe the '935 patent by the use of the FasTrim product in violation of plaintiff's patent rights.

26. The sale by defendants of the FasTrim product also contributes to the use of the FasTrim products thereby infringing plaintiff's rights.

27. The infringement by defendants of plaintiff's the '935 patent is willful.

28. The infringement is continuing, and will continue until the defendants, jointly and severally, are enjoined from further infringing acts.

COUNT 2
(Patent Infringement of U.S. Patent No. 6,805,951)

29. Plaintiffs incorporate by reference the allegations in paragraphs 1 through 28 as though fully set forth herein.

30. Industrias Auxiliares Faus S.L. manufactures the FasTrim product in Spain by a process which infringes the claims of the '951 patent.

31. Defendants, jointly and severally, by themselves or through the use of their agents, import into the United States the products made by the patented process of the '951 patent.

32. Defendant, jointly and severally, by themselves or through the use their agents, placed products infringing the claims of the '951 patent into the stream of commerce with reasonable certainty that they would be sold in this district.

33. The FasTrim brand product is sold in this district.

34. The sale by defendants of the FasTrim product induces the purchasers to also infringe U.S. Patent No. 6,805,951 by the use of the FasTrim product in violation of plaintiff's patent rights.

35. The sale by defendants of the FasTrim product also contributes to the use of the FasTrim products thereby infringing plaintiff's rights.

36. The infringement by defendants of plaintiff's the '951 patent is willful.

37. The infringement by defendants will continue until the defendants, jointly and severally, are enjoined from further infringing acts.

COUNT 3
(Patent Infringement of U.S. Patent No. 6,860,074)

38. Plaintiffs incorporate by reference the allegations in paragraphs 1-37 as though fully set forth herein.

39. Defendants, jointly and severally, by themselves, or through the use of their agents, import into the United States the FastTrim product which infringes the claims of the '074 patent.

40. Defendants, jointly and severally, by themselves or through the use of their agents, placed the FasTrim product into the stream of commerce with reasonable certainty that they would be sold in this District.

41. The FasTrim product is sold in this district.

42. Defendant's instructions for use of the FasTrim product induces the purchasers to also infringe the '074 patent by the use of the FasTrim product in violation of Plaintiff's patent rights.

43. Defendant's webpage, available at <http://www.fausinc.com/fastrim.html> (Exhibit 7), also induces purchasers to infringe, or otherwise contributes to the infringement of, the '074 patent by the use of the FasTrim product in violation of Plaintiff's patent rights.

44. Defendants sale of the FasTrim product also contributes to the use of the FasTrim product also infringing Plaintiff's patent rights.

45. The filing of this Amended Complaint constitutes notice pursuant to 35 USC § 287 of Plaintiff's patent rights in the '074 patent.

46. The infringement of the '074 patent by defendants is willful.

47. The infringement of the '074 will continue until the defendants, jointly and severally, are enjoined from further infringing acts.

COUNT 4
(Copyright Infringement)

48. Plaintiffs incorporate by reference the allegations in paragraphs 1 though 47 as though fully set forth herein.

49. Defendants, jointly and severally, had access to the copyright backerboard of plaintiff.

50. Defendants copied the printed matter protected by plaintiff's registered copyright.

51. Defendants were aware of plaintiff's rights in the copyrighted material at the time they copied the printed matter.

52. The defendants will continue to infringe plaintiff's copyright until they are jointly and severally enjoined from further infringing activities.

PRAYER FOR RELIEF

Whereby, plaintiffs seek a preliminary and permanent injunction preventing defendants , and all those in concert with them, from continuing infringement of plaintiffs' patents and copyright;

A finding that the infringement of plaintiffs' patents was willful;

An accounting of the profits obtained by defendants, and each of them, as a consequence of defendants' infringement of plaintiff's patent rights;

Damages in the form of plaintiffs' lost profits or defendants' profits, but not less than a reasonable royalty for patent infringement;

A declaration that this case is exceptional permitting enhanced damages up to a trebling of damages for patent infringement;

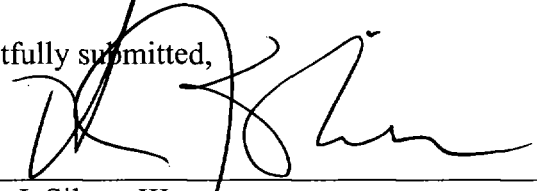
Statutory and/or actual damages for copyright infringement;

Pre- and post-judgment interest;

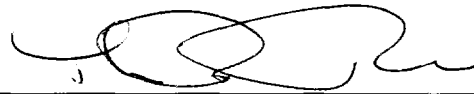
An award of attorney's fees and costs; and

Such other relief as the court may deem just and proper

Respectfully submitted,



Hayden J. Silver, III
N.C. State Bar No. 10037
W. Swain Wood
N.C. State Bar No. 32037
KILPATRICK STOCKTON LLP
3727 Glenwood Avenue
Suite 400
Raleigh, North Carolina 27607
Telephone: 919 420-1700
Facsimile: 919-420-1800



OF COUNSEL
STEVENS, DAVIS, MILLER & MOSHER, L.L.P.
Thomas P. Pavelko
Eric Robins
1615 L Street, N.W.
Suite 850
Washington, D.C. 20036
Telephone: 202-785-0100
Facsimile: 202-785-0200

Attorney for Plaintiffs

Michael F. Easley
Governor



North Carolina Office of the Governor

Release: **IMMEDIATE**
Date: June 9, 2004

Contact: Samantha Slapnik
Phone: 919 733-5082

GOV. EASLEY ANNOUNCES 86 NEW JOBS FOR WAKE COUNTY

RALEIGH – Gov. Mike Easley announced today that Pergo Inc., a laminate flooring company, will expand its Garner operations creating 86 new jobs and investing \$36 million in the state.

“Pergo’s decision to expand in the Triangle is proof that our economic development strategy is working,” said Easley. “By making smart, targeted investments in education, our workforce and in economic investment tools such as the One North Carolina fund, we have earned the nation’s best business climate and a reputation that sets North Carolina apart from other states.”

Pergo Inc. will receive \$100,000 in One N.C. Funds, as well as support from Wake Tech Community College, the Town of Garner and Progress Energy.

“In the past three years, the One North Carolina fund has resulted in the creation of more than 12,000 jobs and an additional \$1 billion in investment for North Carolina families,” Easley said. “This tool has become critical in our recruiting efforts and that is why I have asked the Senate to quickly approve an additional \$20 million to replenish the fund.”

The expansion facility, located in the Greenfield Industrial Park in Garner, will manufacture Four-In-One molding, an all-purpose accessory that can be used in four different applications in laminate work. Production will begin in August. The new plant will create 54 new positions. An additional 32 positions will be added to Pergo’s Paragon project, a new direct laminate line expansion at the Garner facility. Salaries for both Four-In-One employees and Paragon employees will average \$750 per week.

“Today’s opening of Pergo’s new manufacturing facility demonstrates the positive power of collaboration between the public and private sectors,” said Tony Sturris, president and CEO of Pergo, Inc. “Working together, we have created real opportunities and real jobs for North Carolinians. We are deeply appreciative of the guidance, help and support of various state and local officials and invigorated by the challenge inherent in providing such support.”

Pergo Inc. is a laminate flooring company with leading market positions. Net sales amounted to \$214 million last year. Pergo has more than 270 employees nationwide with 227 of those employees in North Carolina. Their North America corporate headquarters is in Raleigh off Highwoods Boulevard. The company’s current investment in the state is

about \$42 million.

For more information on how to apply for jobs, visit www.pergo.com or call 1-800-33-PERGO (1-800-337-3746).

###

[[Back](#)]

For more information, visit the [Governor's Home Page](#).



US006517935B1

(12) **United States Patent**
Kornfält et al.

(10) Patent No.: **US 6,517,935 B1**
(45) Date of Patent: **Feb. 11, 2003**

(54) **PROCESS FOR THE PRODUCTION OF A FLOOR STRIP**

(58) Field of Search 156/62.2, 250,
156/62.8, 245, 276; 428/331, 332, 526,
531, 918

(75) Inventors: **Sven Kornfält, Malmö (SE); Per Bengtsson, Ekeby (SE); Hans Sjölin, Perstorp (SE)**

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,671,369 A 6/1972 Kvalheim et al.
4,198,455 A 4/1980 Spiro et al.
4,504,347 A * 3/1985 Munk et al. 156/62.2
4,643,237 A 2/1987 Rosa
5,034,272 A * 7/1991 Lindgren et al. 428/331

(73) Assignee: **Pergo (Europe) AB, Trelleborg (SE)**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 710 days.

* cited by examiner

Primary Examiner—Jan H. Silbaugh

Assistant Examiner—Edmund H. Lee

(74) *Attorney, Agent, or Firm*—Stevens, Davis, Miller & Mosher, L.L.P.

(21) Appl. No.: **08/817,391**

(22) PCT Filed: **Oct. 17, 1995**

(86) PCT No.: **PCT/SE95/01206**

§ 371 (c)(1),
(2), (4) Date: **Apr. 25, 1997**

(87) PCT Pub. No.: **WO96/12857**

PCT Pub. Date: **May 2, 1996**

(57) **ABSTRACT**

A thin abrasion resistant decorative thermosetting laminate of postforming quality is glued to a longitudinal carrier. The carrier preferably consists of a fiberboard or a particle board with a rectangular cross section and at least two opposite rounded-off edges. One or more floor strips with the same or different cross section is machined from the laminate clad carrier.

(30) **Foreign Application Priority Data**

Oct. 24, 1994 (SE) 9403620

(51) Int. Cl.⁷ **B32B 5/16**

(52) U.S. Cl. **428/331; 428/332; 428/526; 428/531; 428/918; 156/250; 156/276**

11 Claims, 4 Drawing Sheets

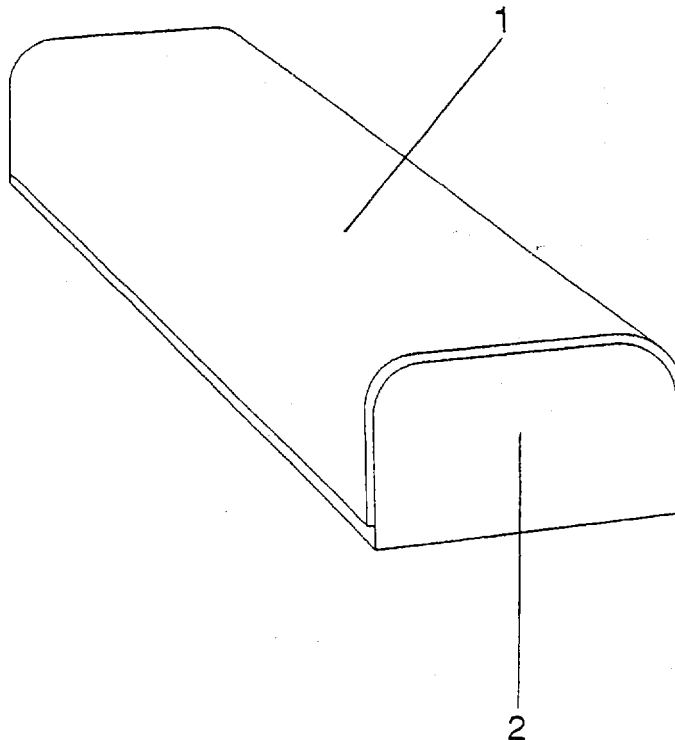


Fig. 1

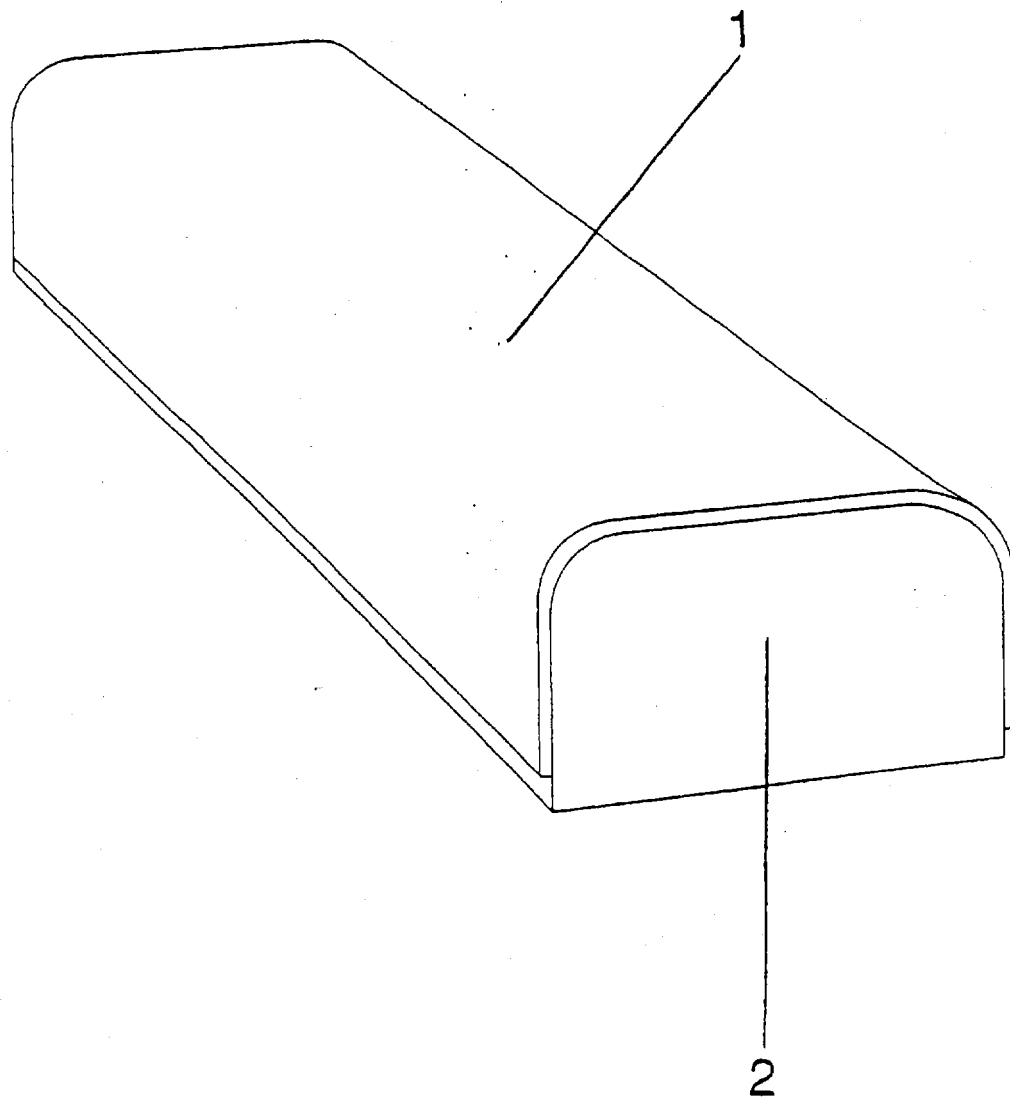


Fig. 2

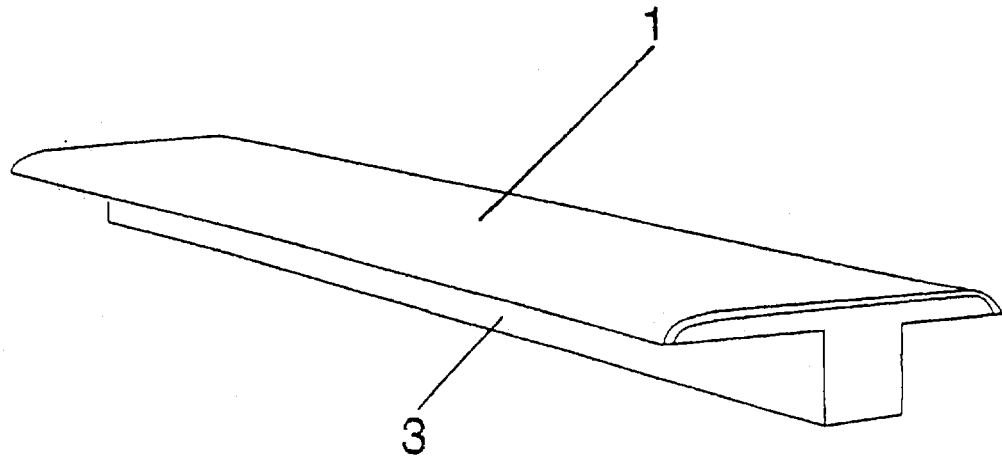


Fig. 3

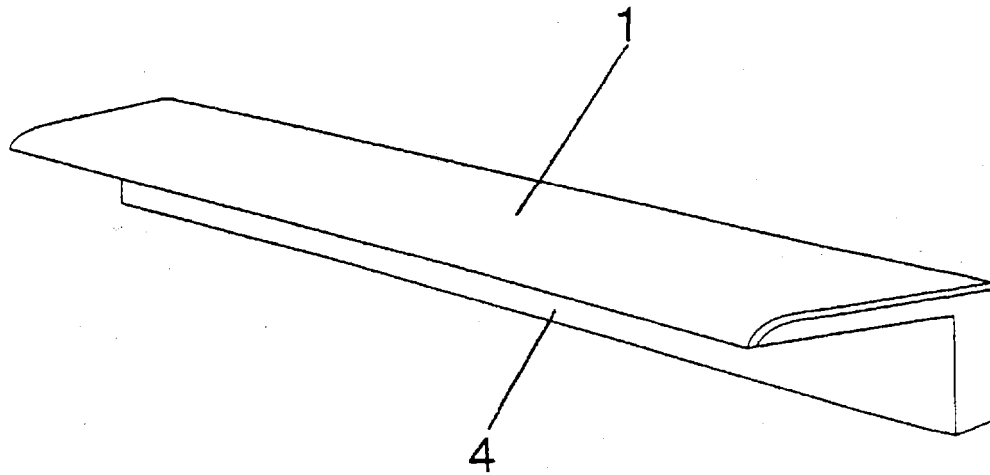
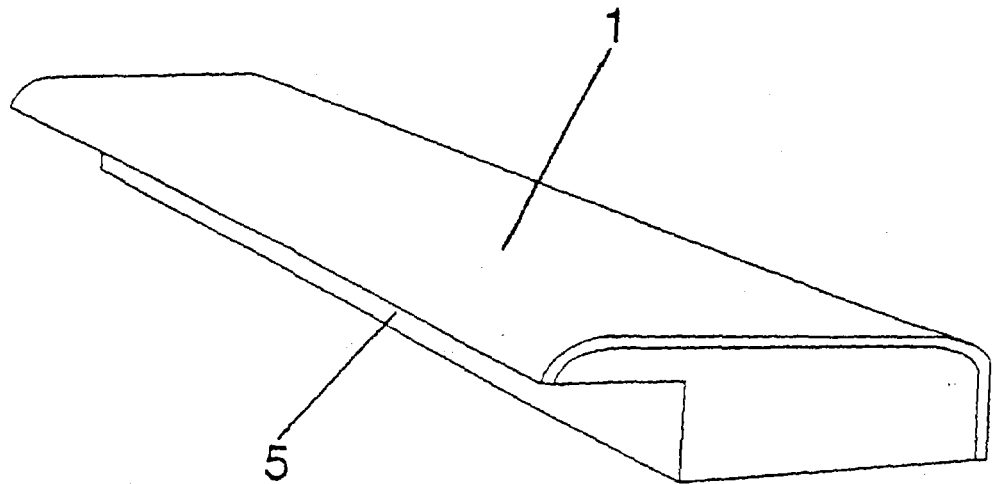


Fig. 4



PROCESS FOR THE PRODUCTION OF A FLOOR STRIP

The present invention relates to a process for the production of a floor strip such as a dilatation profile, a transition profile or a finishing profile.

It is previously known to produce floor strips such as metal strips, wood veneer coated strips and strips of homogeneous wood.

There is a strong desire to bring about a floor strip with the same pattern as on a floor of thermosetting laminate. During the last years these floors have become very usual. For instance they are made with wood pattern, marble pattern and phantasy pattern. Possibly you can use a homogeneous wood strip or a wood veneer coated strip for a few of the wood patterned floors. Previously known strips do not go well together with all the other floor patterns.

In addition the purpose of the present invention is to provide a floor strip with improved abrasion resistance.

According to the present invention it has quite surprisingly been possible to meet the above needs and bring about a process for the production of floor strips such as a dilatation profile, a transition profile or a finishing profile. The process comprises glueing, preferably under heat and pressure a thin decorative thermosetting laminate of postforming quality having an abrasion resistance measured as IP-value >3000 revolutions, preferably >6000 revolutions, on a longitudinal carrier, which carrier preferably consists of a fibre board or a particle board with a rectangular cross-section and at least two opposite rounded-off edges. The postforming laminate is glued in one piece on the upper side and two long sides of the carrier via the rounded-off edges, whereupon one or more floor profile's having the same or different cross-section is machined from the laminate coated carrier.

According to one embodiment the carrier can be provided with a rectangular cross-section with three rounded-off edges.

One great advantage of the process for the production according to the invention is that it is very rational. From the same body, the laminate clad carrier, several profiles with varying shape can be machined. Usually a milling machine is used for machining the different kinds of profiles from the laminate coated carrier.

Preferably the carrier is water resistant. At a preferred embodiment the carrier consists of a high density fibre board made of fine fibres.

At a preferred embodiment the postforming laminate is glued in one piece on three of the four longitudinal sides of the carrier, preferably on the upper side and two long sides via the rounded-off edges. Advantageously, a heat and moisture resistant glue is used at the glueing. Preferably the glueing is carried out under heat and pressure. For instance the pressure can be regulated by means of rollers which press the laminate against the carrier. The temperature can for instance be regulated with heating nozzles which can give an even current of warm air.

At another embodiment the carrier can be provided with a rectangular cross-section and three rounded-off edges. The postforming laminate is then glued in one piece on all four sides of the carrier via the rounded-off edges.

Suitably the postforming laminate consists of at least one monochromatic or patterned paper sheet impregnated with a thermosetting resin, preferably melamine-formaldehyde resin and preferably one or more sheets for instance of parchment, vulcanized fibres or glass fibres. The last mentioned sheets are preferably not impregnated with any ther-

mosetting resin, but the thermosetting resin from the sheets situated above will enter these sheets at the laminating step, where all sheets are bonded together.

Generally the term postforming laminate means a laminate which is so flexible that it can be formed at least to a certain extent after the production thereof. Ordinary qualities of thermosetting decorative laminates are rather brittle and cannot be regarded as postforming laminates.

Usually the postforming laminate includes at least one uppermost transparent paper sheet made of α -cellulose and impregnated with a thermosetting resin, preferably melamine-formaldehyde resin. This so-called overlay is intended to protect an underlying decor sheet from abrasion.

Often at least one of the paper sheets of the postforming laminate impregnated with thermosetting resin, preferably the uppermost one is coated with hard particles for instance silica, aluminium oxide and/or silicon carbide with an average particle size of about 1-80 μm , preferably about 5-60 μm evenly distributed over the surface of the paper sheet.

In a preferred embodiment the hard particles are applied on the resin impregnated paper surface before the resin has been dried.

The hard particles improve the abrasion resistance of the laminate. Hard particles are used in the same way at the production of laminates which are subject to a hard wear such as flooring laminates.

The abrasion resistance of the postforming laminates are tested according to the European standard EN 438-2/6:1991. According to this standard the abrasion of the decor sheet of the finished laminate to the so-called IP-point (initial-point) is measured, where the starting abrasion takes place.

The IP-value suitably lies within the interval 3000-20000, preferably 3000-10000 revolutions.

Thus, the manufacturing process according to the invention makes it possible to produce laminate clad profiles with the same surface pattern and about the same abrasion resistance as the laminate floorings they are intended to go together with.

Of course the pattern of the profiles can also be adapted to other flooring materials than laminate floorings, such as parquet floorings and soft plastic floorings.

The present invention will be explained further in connection with the embodiment example below and the enclosed figures of which FIG. 1 shows a postforming laminate 1 glued to a longitudinal carrier 2. FIG. 2 shows dilatation profile 3 with a postforming laminate 1 glued thereto, while FIG. 3 illustrates a finishing profile 4 with a postforming laminate 1 glued thereto. Finally FIG. 4 shows a transition profile 5 with a postforming laminate 1 glued thereto.

On the figures the thickness of the postforming laminate 1 has been magnified as compared to the size of the carrier 2 and the profiles 3-5 respectively to better illustrate that a postforming laminate 1 is glued to the carrier 2 and the profiles 3-5 respectively.

Of course the FIGS. 1-4 only show one embodiment of the carrier 2 and the profiles 3-5 respectively which can be produced according to the invention. Various other designs are possible.

EXAMPLE

A roll of transparent so-called overlay paper of α -cellulose with a surface weight of 25 g/m^2 was impregnated with an aqueous solution of melamine-formaldehyde resin to a resin content of 70 percent by weight calculated on dry impregnated paper. Immediately after the impregnation, aluminium oxide particles with an average particle size of 50

μm were applied to the upper side of the paper in an amount of 7 g/m^2 by means of a doctor-roll placed above the paper web.

Thus, the hard aluminium particles were applied in the melamine-formaldehyde resin which had not been dried yet.

The impregnated paper web was then fed continuously into a heating oven, where the solvent was evaporated. At the same time the resin was partially cured to so-called B-stage. Thereby the aluminium oxide particles were enclosed in the resin layer and accordingly concentrated to the surface of the product obtained which is usually called prepreg. The prepreg web obtained was then rolled again.

A roll of conventional nontransparent so-called decor paper with a decor pattern printed thereon and having a surface weight of 80 g/m^2 was treated in the same way as the overlay paper except for the fact that no aluminium oxide particles were applied and that the resin content was 50 percent by weight calculated on dry impregnated paper.

A roll of unimpregnated parchment with a surface weight of 120 g/m^2 was used at the production of the postforming laminate.

The two prepreg webs impregnated with melamine-formaldehyde resin and the unimpregnated parchment web were pressed between two press bands of a continuous laminating press to a decorative postforming laminate.

At the pressing a prepreg web of α -cellulose was placed on top with the side with the hard particles directed upwards. Underneath followed a prepreg web of decor paper and at the bottom a web of parchment. The prepreg webs and the parchment web were pressed together at a pressure of 35 kp/cm^2 and at a temperature of 170° C .

The decorative postforming laminate obtained was cut with roller knives to strips of suitable length and width.

A longitudinal carrier 2 with a rectangular cross-section and two opposite rounded-off edges according to FIG. 1 was machined from a fibre board by means of a milling machine. The fibre board was a water resistant board of so-called MDF-quality (medium density fibre board quality) of high density made of finely divided fibres.

A strip of postforming laminate 1 was glued under heat and pressure to the longitudinal carrier 2 with a heat and moisture resistant glue. The pressure was regulated with rolls which pressed the laminate against the carrier and the temperature was regulated with heating nozzles which blew an even current of warm air.

A dilation profile 3 according to FIG. 2 was machined from the laminate clad carrier by milling.

Instead two finishing profiles 4 according to FIG. 3 or one transition profile 5 according to FIG. 4 can be produced from the same carrier. This results in a rational and cost-saving production.

The abrasion resistance of the postforming laminate obtained was measured. Then a value for the IP-point amounting to 7000 revolutions was obtained.

The present invention is not limited to the embodiments disclosed, since these can be modified in different ways within the scope of the present invention.

What is claimed is:

1. A process for the production of a floor strip, said process comprising gluing a thin decorative thermosetting laminate of postforming quality comprising hard particles which impart an abrasion resistance to the laminate, measured as IP value $> 3,000$ revolutions, on a longitudinal carrier, which carrier consists of at least one member selected from the group consisting of a fiber board and a particle board, said carrier having a rectangular cross-section and at least two opposite rounded-off edges, wherein, in said gluing step the thermosetting laminate of postforming quality in one piece is glued on an upper side and on two long sides of the carrier via the rounded-off edges to form a laminate coated carrier, and subsequently machining said laminate coated carrier into one or more floor profiles, which may be the same or different cross-section, said profiles being selected from the group consisting of dilation profile, transition profile and finishing profile, from the laminate coated carrier to produce a floor strip.

2. Process according to claim 1, wherein the postforming laminate comprises at least one monochromatic or patterned paper sheet impregnated with a thermosetting resin, and or more sheets comprising parchment, vulcanized fibres or glass fibres which are not impregnated with a thermosetting resin.

3. Process according to claim 1, wherein the postforming laminate includes at least one uppermost transparent paper sheet overlay of α -cellulose impregnated with a thermosetting resin.

4. Process according to claim 1, wherein the IP-value lies within the interval 3000-20000 revolutions.

5. The process according to claim 1 comprising providing a water resistant carrier as the carrier.

6. The process according to claim 1 wherein the thin decorative thermosetting laminate of postforming quality comprises at least one paper sheet impregnated with a thermosetting resin and at least the upper most sheet of said thin decorative thermosetting laminate being coated with hard particles selected from the group consisting of silica, aluminum oxide, silicon carbide and combinations thereof, having an average particle size of $1-80 \mu\text{m}$, evenly distributed over the surface of the paper sheet.

7. Process according to claim 1, wherein the gluing step is carried out under heat and pressure.

8. Process according to claim 3, wherein the overlay is impregnated with melamine-formaldehyde resin.

9. Process according to claim 4, wherein the IP-value lies within the interval 3000-10000 revolutions.

10. Process according to claim 6, wherein the average particle size is about $5-60 \mu\text{m}$.

11. The product produced by the process of claim 1.

* * * * *

Garner News

Garner's Original Hometown Paper; A Community Tradition Since 1963

Search

- [Home](#)
- [News](#)
- [Sports](#)
- [Police Reports](#)
- [Obituaries](#)
- [Classifieds](#)
- [Weather](#)
- [Contact Us](#)
- [Subscribe](#)
- [Guest Book](#)
- [Coupon Page](#)

© COPYRIGHT 2005
Fuquay-Varina Independent,
all rights reserved



Pergo announces major Garner expansion

By Juli Denning
Associate Editor
julidenning@garnernews.net
June 16, 2004

Pergo Inc., a laminate flooring company, will expand its Garner operations creating 86 new jobs and investing \$36 million.

Following the announcement last Wednesday, Gov. Mike Easley said, "Pergo's decision to expand in the Triangle is proof that our economic development strategy is working. By making smart, targeted investments in education, our workforce and in economic investment tools such as the One North Carolina fund, we have earned the nation's best business climate and a reputation that sets North Carolina apart from other states."

"This is great news for Garner!," said US Rep. Bob Etheridge. "These high-quality jobs will bring opportunity to our community and hope to many working families. Pergo is investing not only in North Carolina, but in our workers, our families and our communities."

Pergo Inc. will receive \$100,000 in One NC Funds, support from the Town of Garner, Wake Technical Community College and Progress Energy.

Gov. Easley said in the past three years, the One North Carolina fun has resulted in the creation of more than 12,000 jobs and an additional \$1 billion in investment for families.

The facility, located in Greenfield Industrial Park, will manufacture Four-In-One molding, an all-purpose accessory that can be used in four different applications in laminate work.

Production is scheduled for August.

The new plant will create 54 new positions with an additional 32 positions to be added to Pergo's Paragon project, a new direct laminate line expansion at the

Garner facility.

Pergo has more than 270 employees nationwide with 227 of those employees in North Carolina.

For more information on how to apply for jobs, visit www.pergo.com or call 1-800-33-PERGO (1-800-337-3746).



NEWS RELEASE

CONGRESSMAN BOB ETHERIDGE

NORTH CAROLINA

FOR IMMEDIATE RELEASE

DATE: June 9, 2004

Contact: Sara Lang
Phone: (202) 225-4531

Etheridge Applauds New Jobs at Pergo Plant in Garner

WASHINGTON - U.S. Rep. Bob Etheridge (D-Lillington) today hailed the news that Pergo Inc., a laminate flooring company, will expand its Garner operations. The expansion will create 86 new jobs and invest \$36 million in the state.

"This is great news for Garner!" Etheridge said. "These high-quality jobs will bring opportunity to our community and hope to many working families. Pergo is investing not only in North Carolina, but in our workers, our families and our communities."

The expansion facility, located in the Greenfield Industrial Park in Garner, will manufacture Four-In-One molding, an all-purpose accessory that can be used in four different applications in laminate work. Production will begin in August. The new plant will create 54 new positions. An additional 32 positions will be added to Pergo's Paragon project, a new direct laminate line expansion at the Garner facility.

Pergo Inc. is a laminate flooring company with leading market positions. Net sales amounted to \$214 million last year. Pergo has more than 270 employees nationwide with 227 of those employees in North Carolina. Their North America corporate headquarters is in Raleigh off Highwoods Boulevard. The company's current investment in the state is about \$42 million.

For more information on how to apply for jobs, visit www.pergo.com or call 1-800-33-PERGO (1-800-337-3746).

-30-



US006805951B2

(12) **United States Patent**
Kornfält et al.

(10) Patent No.: **US 6,805,951 B2**
(45) Date of Patent: **Oct. 19, 2004**

(54) **PROCESS FOR THE PRODUCTION OF A FLOOR STRIP**

(75) Inventors: **Sven Kornfält, Malmö (SE); Per Bengtsson, Ekeby (SE); Hans Sjölln, Perstorp (SE)**

(73) Assignee: **Pergo (Europe) AB, Trelleborg (SE)**

(*) Notice: **Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 97 days.**

(21) Appl. No.: **10/360,802**

(22) Filed: **Feb. 10, 2003**

(65) **Prior Publication Data**

US 2003/0118812 A1 Jun. 26, 2003

Related U.S. Application Data

(63) Continuation of application No. 08/817,391, filed as application No. PCT/SE95/01206 on Oct. 17, 1995, now Pat. No. 6,517,935.

(30) **Foreign Application Priority Data**

Oct. 24, 1994 (SE) 9403620

(51) Int. Cl.⁷ **B32B 5/16**

(52) U.S. Cl. **428/331; 428/332; 428/526; 428/531; 428/918; 156/250; 156/276**

(58) Field of Search **428/331, 332, 428/526, 531, 918; 156/250, 276**

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,671,369 A 6/1972 Kvalheim et al.
4,198,455 A 4/1980 Spiro et al.
4,504,347 A 3/1985 Munk et al.
4,643,237 A 2/1987 Rosa
5,034,272 A 7/1991 Lindgren et al.
6,517,935 B1 2/2003 Kornfalt et al.

FOREIGN PATENT DOCUMENTS

SE 467150 B 6/1992
WO 9612857 5/1996

Primary Examiner—Edmund H. Lee
(74) *Attorney, Agent, or Firm*—Stevens, Davis, Miller & Mosher, L.L.P.

(57) **ABSTRACT**

A thin abrasion resistant decorative thermosetting laminate of postforming quality is glued to a longitudinal carrier. The carrier preferably consists of a fibre board or a particle board with a rectangular cross section and at least two opposite rounded-off edges. One or more floor strips with the same or different cross section is machined from the laminate-clad carrier.

11 Claims, 4 Drawing Sheets

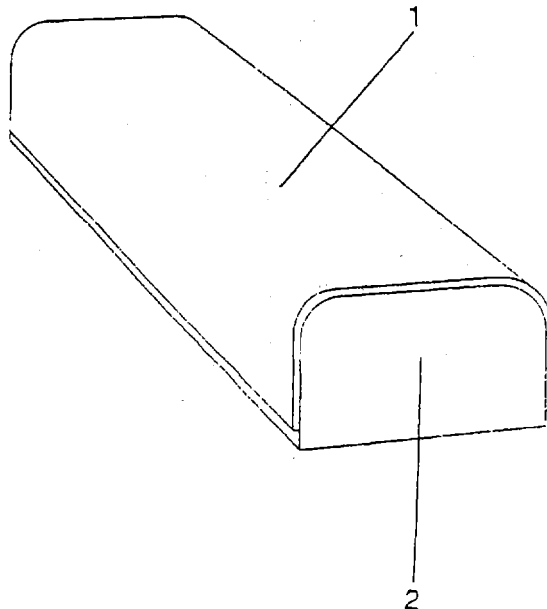


Fig. 1

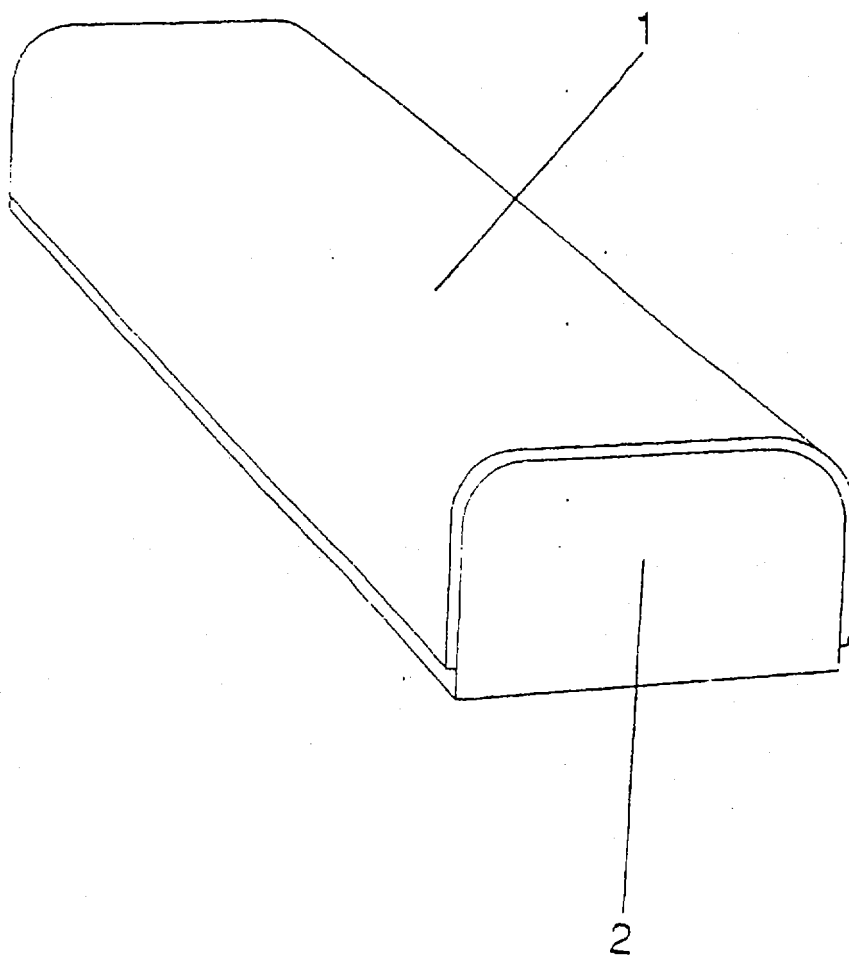


Fig. 2

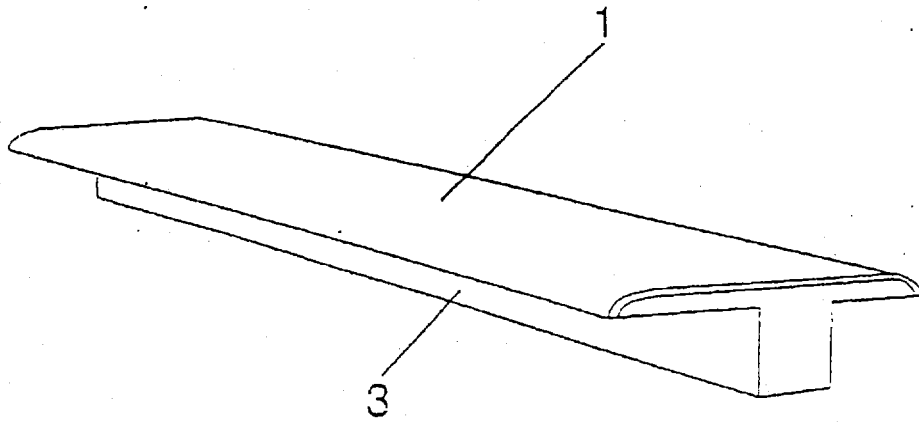


Fig. 3

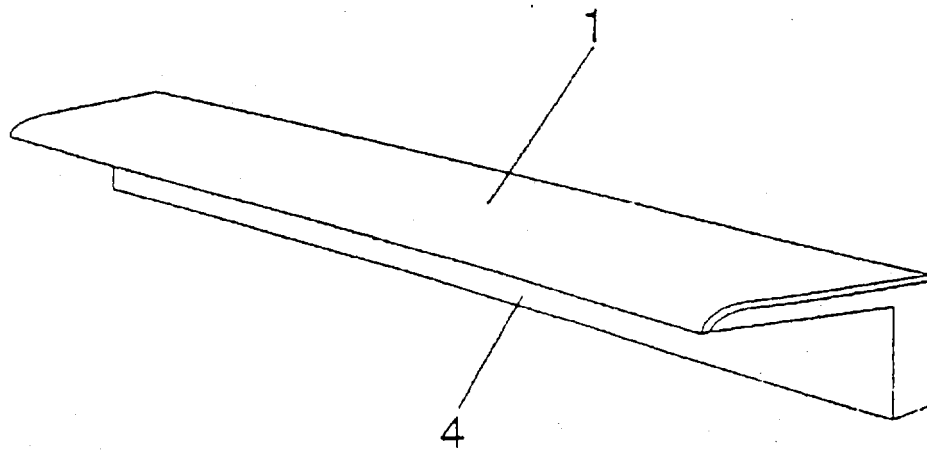
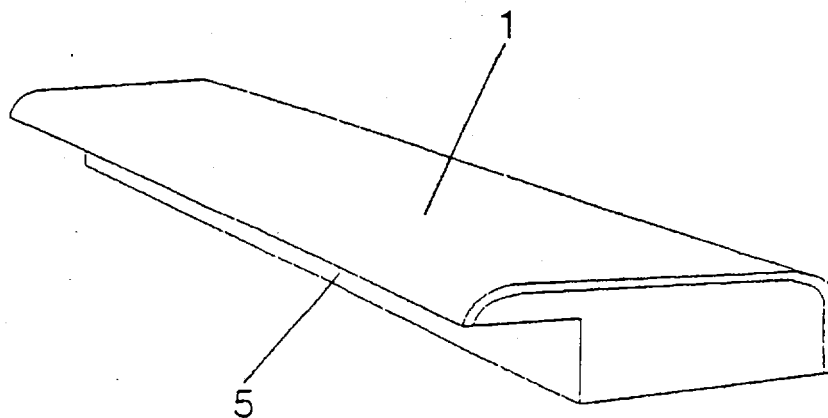


Fig. 4



**PROCESS FOR THE PRODUCTION OF A
FLOOR STRIP**

**CROSS-REFERENCE TO RELATED
APPLICATIONS**

This application is a continuation application of U.S. application Ser. No. 08/817,391, filed Apr. 25, 1997, now U.S. Pat. No. 6,517,935 which, in turn is a §371 application of PCT/SE95/01206, filed Oct. 17, 1995, claiming the priority of Swedish Application No. 9403620-9, filed Oct. 24, 1994, the entire disclosures of which are incorporated herein in their entirety.

The present invention relates to a process for the production of a floor strip such as a dilatation profile, a transition profile or a finishing profile.

It is previously known to produce floor strips such as metal strips, wood veneer coated strips and strips of homogeneous wood.

There is a strong desire to bring about a floor strip with the same pattern as on a floor of thermosetting laminate. During the last years these floors have become very usual. For instance they are made with wood pattern, marble pattern and phantasy pattern. Possibly you can use a homogeneous wood strip or a wood veneer coated strip for a few of the wood patterned floors. Previously known strips do not go well together with all the other floor patterns.

In addition the purpose of the present invention is to provide a floor strip with improved abrasion resistance.

According to the present invention it has quite surprisingly been possible to meet the above needs and bring about a process for the production of floor strips such as a dilatation profile, a transition profile or a finishing profile. The process comprises glueing, preferably under heat and pressure a thin decorative thermosetting laminate of post-forming quality having an abrasion resistance measured as IP-value >3000 revolutions, preferably >6000 revolutions, on a longitudinal carrier, which carrier preferably consists of a fibre board or a particle board with a rectangular cross-section and at least two opposite rounded-off edges. The postforming laminate is glued in one piece on the upper side and two long sides of the carrier via the rounded-off edges, whereupon one or more floor profiles having the same or different cross-section is machined from the laminate coated carrier.

According to one embodiment the carrier can be provided with a rectangular cross-section with three rounded-off edges.

One great advantage of the process for the production according to the invention is that it is very rational. From the same body, the laminate clad carrier, several profiles with varying shape can be machined. Usually a milling machine is used for machining the different kinds of profiles from the laminate coated carrier.

Preferably the carrier is water resistant. At a preferred embodiment the carrier consists of a high density fibre board made of fine fibres.

At a preferred embodiment the postforming laminate is glued in one piece on three of the four longitudinal sides of the carrier, preferably on the upper side and two long sides via the rounded-off edges. Advantageously, a heat and moisture resistant glue is used at the glueing. Preferably the glueing is carried out under heat and pressure. For instance the pressure can be regulated by means of rollers which press the laminate against the carrier. The temperature can for instance be regulated with heating nozzles which can give an even current of warm air.

At another embodiment the carrier can be provided with a rectangular cross-section and three rounded-off edges. The postforming laminate is then glued in one piece on all four sides of the carrier via the rounded-off edges.

Suitably the postforming laminate consists of at least one monochromatic or patterned paper sheet impregnated with a thermosetting resin, preferably melamine-formaldehyde resin and preferably one or more sheets for instance of parchment, vulcanized fibres or glass fibres. The last mentioned sheets are preferably not impregnated with any thermosetting resin, but the thermosetting resin from the sheets situated above will enter these sheets at the laminating step, where all sheets are bonded together.

Generally the term postforming laminate means a laminate which is so flexible that it can be formed at least to a certain extent after the production thereof. Ordinary qualities of thermosetting decorative laminates are rather brittle and cannot be regarded as postforming laminates.

Usually the postforming laminate includes at least one uppermost transparent paper sheet made of α -cellulose and impregnated with a thermosetting resin, preferably melamine-formaldehyde resin. This so-called overlay is intended to protect an underlying decor sheet from abrasion.

Often at least one of the paper sheets of the postforming laminate impregnated with thermosetting resin, preferably the uppermost one is coated with hard particles for instance silica, aluminium oxide and/or silicon carbide with an average particle size of about 1–80 μm , preferably about 5–60 μm evenly distributed over the surface of the paper sheet.

In a preferred embodiment the hard particles are applied on the resin impregnated paper surface before the resin has been dried.

The hard particles improve the abrasion resistance of the laminate. Hard particles are used in the same way at the production of laminates which are subject to a hard wear such as flooring laminates.

The abrasion resistance of the postforming laminates are tested according to the European standard EN 438-2/6:1991. According to this standard the abrasion of the decor sheet of the finished laminate to the so-called IP-point (initial point) is measured, where the starting abrasion takes place.

The IP-value suitably lies within the interval 3000–20000, preferably 3000–10000 revolutions.

Thus, the manufacturing process according to the invention makes it possible to produce laminate clad profiles with the same surface pattern and about the same abrasion resistance as the laminate floorings they are intended to go together with.

Of course the pattern of the profiles can also be adapted to other flooring materials than laminate floorings, such as parquette floorings and soft plastic floorings.

The present invention will be explained further in connection with the embodiment example below and the enclosed figures of which

FIG. 1 shows a postforming laminate 1 glued to a longitudinal carrier 2.

FIG. 2 shows a dilatation profile 3 with a postforming laminate 1 glued thereto, while

FIG. 3 illustrates a finishing profile 4 with a postforming laminate 1 glued thereto. Finally

FIG. 4 shows a transition profile 5 with a postforming laminate 1 glued thereto.

On the figures the thickness of the postforming laminate 1 has been magnified as compared to the size of the carrier

3

2 and the profiles 3-5 respectively to better illustrate that a postforming laminate 1 is glued to the carrier 2 and the profiles 3-5 respectively.

Of course the FIGS. 1-4 only show one embodiment of the carrier 2 and the profiles 3-5 respectively which can be produced according to the invention. Various other designs are possible.

EXAMPLE

A roll of transparent so-called overlay paper of α -cellulose with a surface weight of 25 g/m^2 was impregnated with an aqueous solution of melamine-formaldehyde resin to a resin content of 70 percent by weight calculated on dry impregnated paper. Immediately after the impregnation, aluminium oxide particles with an average particle size of $50 \mu\text{m}$ were applied to the upper side of the paper in an amount of 7 g/m^2 by means of a doctor-roll placed above the paper web.

Thus, the hard aluminium particles were applied in the melamine-formaldehyde resin which had not been dried yet.

The impregnated paper web was then fed continuously into a heating oven, where the solvent was evaporated. At the same time the resin was partially cured to so-called B-stage. Thereby the aluminium oxide particles were enclosed in the resin layer and accordingly concentrated to the surface of the product obtained which is usually called prepreg. The prepreg web obtained was then rolled again.

A roll of conventional nontransparent so-called decor paper with a decor pattern printed thereon and having a surface weight of 80 g/m^2 was treated in the same way as the overlay paper except for the fact that no aluminium oxide particles were applied and that the resin content was 50 percent by weight calculated on dry impregnated paper.

A roll of unimpregnated parchment with a surface weight of 120 g/m^2 was used at the production of the postforming laminate.

The two prepreg webs impregnated with melamine-formaldehyde resin and the unimpregnated parchment web were pressed between two press bands, of a continuous laminating press to a decorative postforming laminate.

At the pressing a prepreg web of α -cellulose was placed on top with the side with the hard particles directed upwards. Underneath followed a prepreg web of decor paper and at the bottom a web of parchment. The prepreg webs and the parchment web were pressed together at a pressure of 35 kp/cm^2 and at a temperature of 170° C .

The decorative postforming, laminate obtained was cut with roller knives to strips of suitable length and width.

A longitudinal carrier 2 with a rectangular cross-section and two opposite rounded-off edges according to FIG. 1 was machined from a fibre board by means of a milling machine. The fibre board was a water resistant board of so-called MDF-quality (medium density fibre board quality) of high density made of finely divided fibres.

A strip of postforming laminate 1 was glued under heat and pressure to the longitudinal carrier 2 with a heat and moisture resistant glue. The pressure was regulated with rolls which pressed the laminate against the carrier and the temperature was regulated with heating nozzles which blew an even current of warm air.

A dilation profile 3 according to FIG. 2 was machined from the laminate clad carrier by milling.

4

Instead two finishing profiles 4 according to FIG. 3 or one transition profile 5 according to FIG. 4 can be produced from the same carrier. This results in a rational and cost-saving production.

The abrasion resistance of the postforming laminate obtained was measured. Then a value for the IP-point amounting to 7000 revolutions was obtained.

The present invention is not limited to the embodiments disclosed, since these can be modified in different ways within the scope of the present invention.

What is claimed is:

1. A process for the production of a floor strip, said process comprising gluing a thin decorative thermosetting laminate of postforming quality comprising hard particles which impart an abrasion resistance to the laminate, measured as an IP value, on a longitudinal carrier, which carrier consists of at least one member selected from the group consisting of fiber board and a particle board, said carrier having a rectangular cross-section and at least two opposite rounded-off edges, wherein, in said gluing step the thermosetting laminate of postforming quality in one piece is glued on an upper side and on two long sides of the carrier via the rounded-off edges to form a laminate coated carrier, and subsequently machining said laminate coated carrier into one or more floor profiles, which may be the same or different cross-section, said profiles being selected from the group consisting of dilation profile, transition profile and finishing profile, from the laminate coated carrier to produce a floor strip.

2. Process according to claim 1, wherein the postforming laminate comprises at least one monochromatic or patterned paper sheet impregnated with a thermosetting resin, and one or more sheets comprising parchment, vulcanized fibres or glass fibres which are not impregnated with a thermosetting resin.

3. Process according to claim 1, wherein the postforming laminate includes at least one uppermost transparent paper sheet overlay of α -cellulose impregnated with a thermosetting resin.

4. Process according to claim 1, wherein the IP-value lies with the interval 3000-6000 revolutions.

5. The process according to claim 1, comprising providing a water resistant carrier as the carrier.

6. The process according to claim 1, wherein the thin decorative thermosetting laminate of postforming quality comprises at least one paper sheet impregnated with a thermosetting resin and at least the upper most sheet of said thin decorative thermosetting laminate being coated with hard particles selected from the group consisting of silica, aluminum oxide, silicon carbide and combinations thereof, having an average particle size of $1-80 \mu\text{m}$, evenly distributed over the surface of the paper sheet.

7. Process according to claim 1, wherein the glueing step is carried out under heat and pressure.

8. Process according to claim 3, wherein the overlay is impregnated with melamine-formaldehyde resin.

9. Process according to claim 1, wherein the IP-value lies within interval 6000-20000 revolutions.

10. Process according to claim 6, wherein the average particle size is about $5-60 \mu\text{m}$.

11. The product produced by the process of claim 1.

* * * * *



US006860074B2

(12) **United States Patent**
Stanchfield

(10) **Patent No.:** **US 6,860,074 B2**
(45) **Date of Patent:** **Mar. 1, 2005**

(54) **TRANSITION MOLDING**

3,758,650 A * 9/1973 Hurst 264/34

(75) **Inventor:** **Oliver Stanchfield, Raleigh, NC (US)**

(List continued on next page.)

(73) **Assignee:** **Pergo (Europe) AB, Trelleborg (SE)**

FOREIGN PATENT DOCUMENTS

(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

DE	3640822	6/1988
DE	467150	6/1992
DE	2 9703962	4/1997
DE	1 9821938	11/1999
DE	1 0131248	1/2003
WO	9901628	1/1999
WO	0120101	3/2001
WO	0 3093686	11/2003

(21) **Appl. No.:** **10/347,489**

(22) **Filed:** **Jan. 21, 2003**

(65) **Prior Publication Data**

US 2003/0154678 A1 Aug. 21, 2003

Related U.S. Application Data

U.S. patent application Publication No. 2003/0159389, published Aug. 28, 2003.

U.S. patent application Publication No. 2003/0118812, published Jun. 26, 2003.

(63) Continuation-in-part of application No. 09/986,414, filed on Nov. 8, 2001, now abandoned.

(List continued on next page.)

(51) **Int. Cl.⁷** **E04B 1/68**

Primary Examiner—Carl D. Friedman

Assistant Examiner—Basil Katcheves

(52) **U.S. Cl.** **52/464; 52/466; 52/468; 52/592.1**

(74) *Attorney, Agent, or Firm*—Stevens, Davis, Miller & Mosher, L.L.P.

(58) **Field of Search** **52/287.1, 464, 52/466, 467, 468, 592.1, 288.1**

(57) **ABSTRACT**

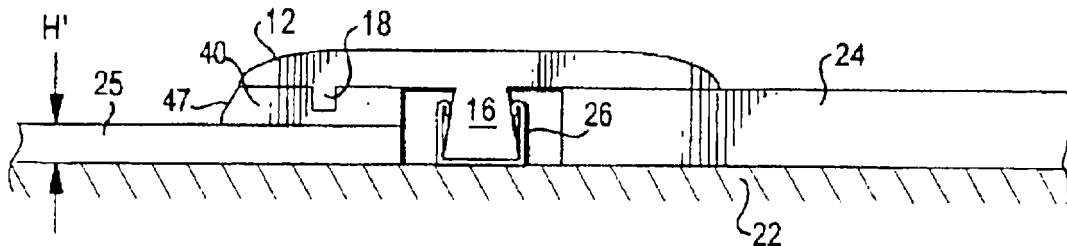
(56) **References Cited**

U.S. PATENT DOCUMENTS

1,357,713 A	11/1920	Lane	
2,100,238 A	11/1937	Burgess	
2,194,086 A	3/1940	Horn	
2,363,429 A	11/1944	Lowry	
3,162,906 A	12/1964	Dudley	
3,199,258 A	8/1965	Jentoft et al.	
3,286,425 A	11/1966	Brown	
3,331,171 A	7/1967	Hallock	
3,339,329 A	* 9/1967	Berg	52/395
3,363,381 A	* 1/1968	Forrest	52/464
3,488,828 A	1/1970	Gallagher	
3,665,666 A	* 5/1972	Delcroix	52/461
3,671,369 A	6/1972	Kvalheim et al.	
3,696,575 A	* 10/1972	Armstrong	52/288.1
3,745,726 A	7/1973	Thom	

The invention is a joint cover assembly for covering a gap adjacent an edge of a panel that covers a sub-surface, and a method of covering such a gap. The assembly includes a molding having a foot, a first arm, and a second arm. The foot is positioned along a longitudinal axis, and the first arm extends generally perpendicularly from the foot. The second arm extends generally perpendicularly from the foot. A tab depends generally perpendicularly from the first panel engaging surface. At least one of the tab and the foot engage the edge in order to tightly fit within the gap. The method includes the steps of placing the foot in the gap, pressing the respective panel engaging surfaces into contact with respective panels, and configuring at least one of the tab and the foot to cooperate to retain the molding in the gap when the assembly is in an installed condition.

12 Claims, 5 Drawing Sheets



U.S. PATENT DOCUMENTS

3,760,544	A	9/1973	Hawes et al.	
3,810,707	A	.5/1974	Tungseth et al.	
4,067,155	A	1/1978	Ruff et al.	
4,198,455	A	4/1980	Spiro et al.	
4,292,774	A	10/1981	Mairle	
4,455,803	A	6/1984	Kornberger	
4,461,131	A	7/1984	Pressell	
4,504,347	A	3/1985	Munk et al.	
4,520,062	A	5/1985	Ungar et al.	
4,643,237	A	2/1987	Rosa	
5,074,089	A	* 12/1991	Kemmer et al.	52/395
5,155,952	A	* 10/1992	Herwegh et al.	52/100
5,365,713	A	11/1994	Nicholas et al.	
5,581,967	A	12/1996	Glatz	
5,888,017	A	3/1999	Corrie	
6,141,920	A	11/2000	Kemper	
6,158,915	A	12/2000	Kise	
6,219,982	B1	4/2001	Eyring	
6,230,385	B1	* 5/2001	Nelson	29/450
6,253,514	B1	7/2001	Jobe et al.	

6,345,480	B1	* 2/2002	Kemper et al.	52/395
6,421,970	B1	7/2002	Martensson et al.	
6,517,935	B1	2/2003	Kornfalt et al.	
6,588,165	B1	* 7/2003	Wright	52/506.05

OTHER PUBLICATIONS

- U.S. patent application Publication No. 2002/0127374, published Sep. 12, 2002.
- U.S. patent application Publication No. 2002/0189747, published Dec. 19, 2002.
- U.S. patent application Publication No. 2004/0031226, published Feb. 19, 2004.
- U.S. patent application Publication No. 2004/0031227, published Feb. 19, 2004.
- U.S. patent application Publication No. 2002/0148551, published Oct. 17, 2002.
- U.S. patent application Publication No. 2004/0041225, published Mar. 4, 2004.

* cited by examiner

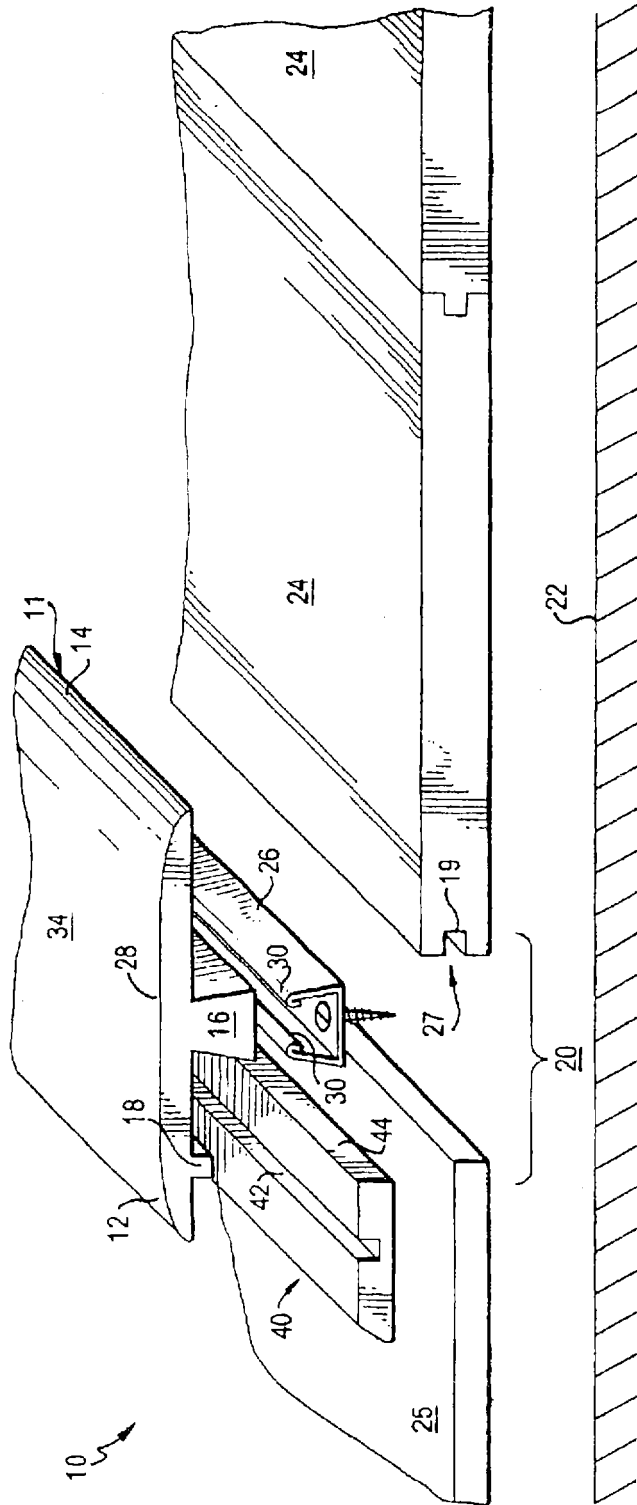


FIG. 1



FIG. 1B

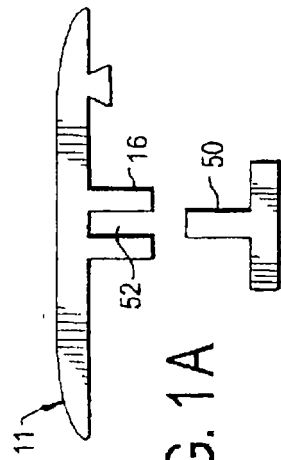


FIG. 1A

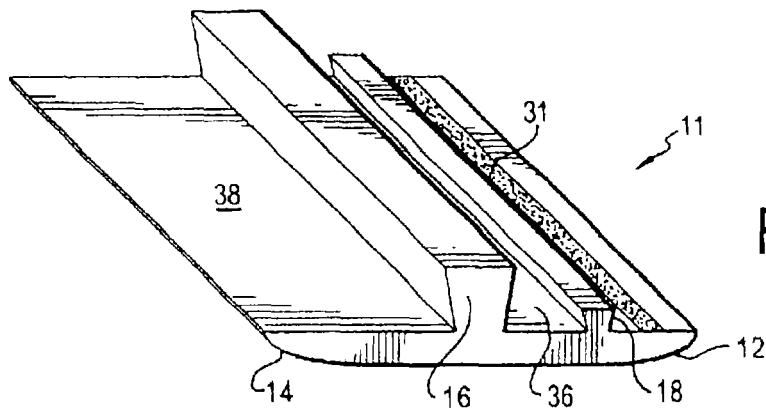


FIG. 6

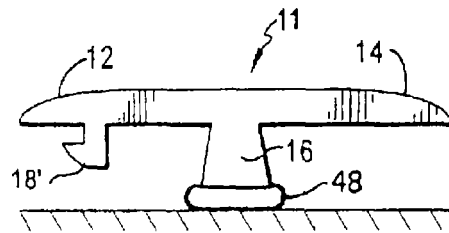


FIG. 7

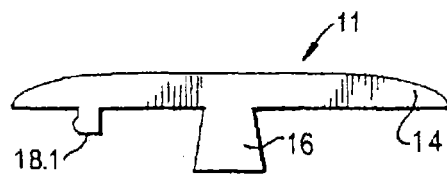


FIG. 8

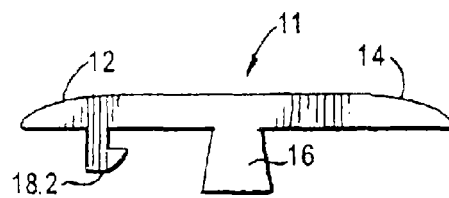


FIG. 9

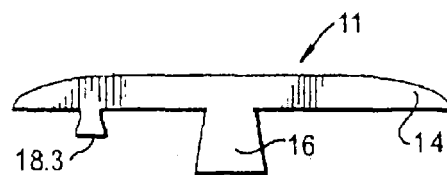


FIG. 10

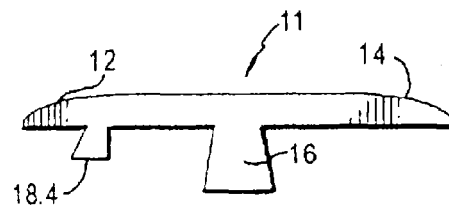


FIG. 11

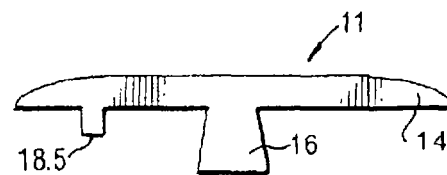


FIG. 12

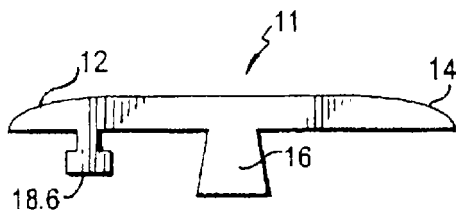


FIG. 13

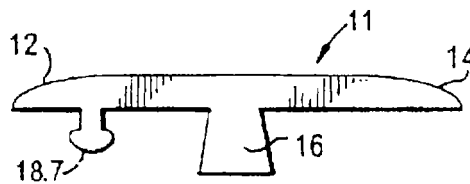


FIG. 14

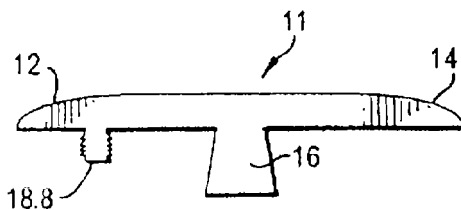


FIG. 15

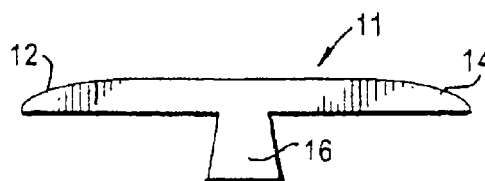


FIG. 16

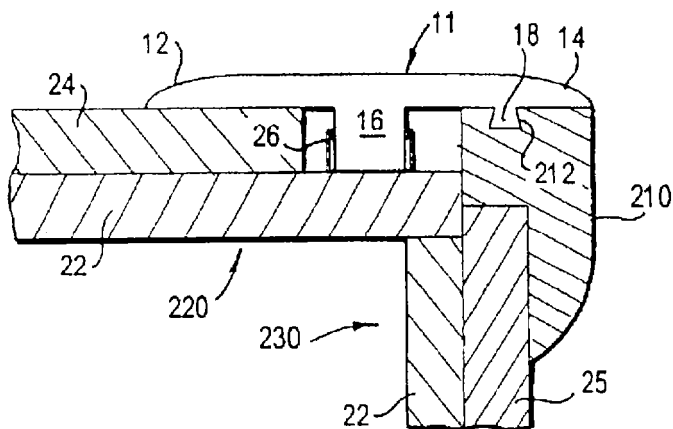


FIG. 17

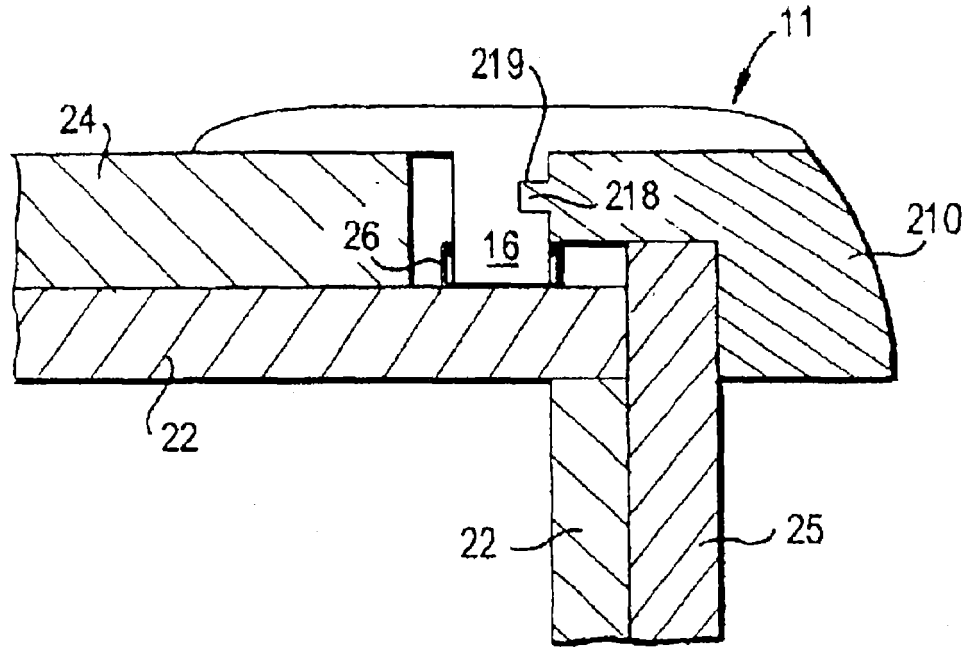


FIG. 18

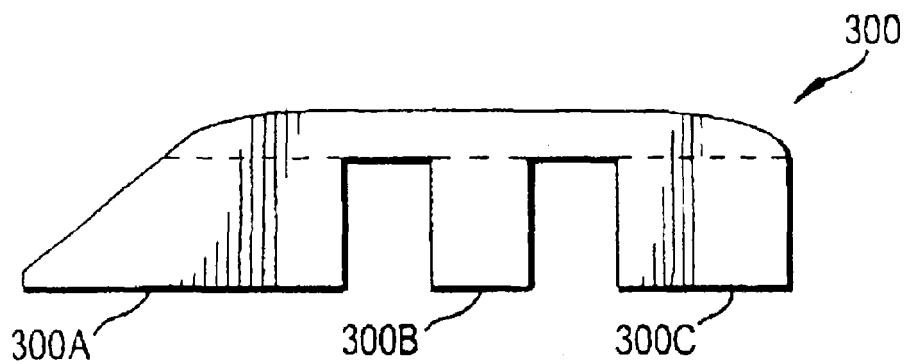


FIG. 19

TRANSITION MOLDING

This application is a Continuation-In-Part of U.S. application Ser. No. 09/986,414, having been filed on Nov. 8, 2001 now abandoned, herein incorporated by reference in its entirety.

BACKGROUND

1. Field of the Invention

The invention is a joint cover assembly that includes a molding, similar to a T-Molding, for covering a gap that may be formed adjacent a panel in a generally planar surface, such as between two adjacent flooring materials, a floor and a wall, or a riser and a runner in a step (or a series of steps).

2. Background of the Invention

Wood or laminate flooring has become increasingly popular. As such, many different types of this flooring have been developed. Generally, this type of flooring is assembled by providing a plurality of similar panels. The differing types of panels that have developed, of course, may have differing depths and thicknesses. Thus, when panels having different thicknesses are placed adjacent to each other, transition moldings are often used to create a smooth joint.

Additionally, one may desire to install floor panels adjacent to an area with different types of material. For example, one may desire to have one type of flooring in a kitchen (e.g., laminate flooring or ceramic tile), and a different appearance in an adjacent living room (e.g., linoleum or carpeting), and an entirely different look in an adjacent bath. Therefore, it has become necessary to develop a type of molding or seal that could be used as a transition from one type of flooring to another.

A problem is encountered, however, flooring materials that are dissimilar in shape or texture are used. For example, when a hard floor is placed adjacent a carpet, problems are encountered with conventional edge moldings placed there between. Such problems include difficulty in covering the gap that may be formed between the floorings having different height or thickness.

Moreover, for purposes of reducing cost, it is important to be able to have a molding that is versatile, having the ability to cover gaps between relatively coplanar surfaces, as well as surfaces of differing thicknesses.

It would also be of benefit to reduce the number of molding profiles that need to be kept in inventory by a seller or installer of laminate flooring. Thus, the invention also provides a method by which the number of moldings can be reduced while still providing all the functions necessary of transition moldings.

SUMMARY OF THE INVENTION

The invention is a joint cover assembly for covering a gap between edges of adjacent floor elements, such as panels. The assembly includes a body having a foot positioned along a longitudinal axis, and a first arm extending generally perpendicularly from the foot. The assembly may include a second arm also extending generally perpendicular to the foot. A tab may additionally be provided on either the first or second arms, displaced from the foot, extending perpendicularly from the arm.

The assembly is preferably provided with a securing means to prevent the assembly from moving once assembled. In one embodiment, the securing means is a clamp, designed to grab the foot. Preferably, the clamp includes a groove into which the foot is inserted. In a

preferred embodiment, the rail may be joined directly to a subsurface below the floor element, such as a subfloor, by any conventional means, such as, a nail, screw or adhesive.

The outward-facing surface of the assembly may be formed as a single, unitary, monolithic surface that covers both the first and second arms. This outward-facing surface may be treated, for example, with a laminate or a paper, such as a decor, impregnated with a resin, in order to increase its aesthetic value, or blend, to match or contrast with the panels.

A shim may also be placed between the foot and the subfloor. In one embodiment, the shim may be positioned on the underside of the clamp; however, if a clamp is not used, the shim may be positioned between the foot and the subfloor. The shim may be adhered to either the foot or subfloor using an adhesive or a conventional fastener, e.g., nail or screw.

The assembly may also include a leveling block positioned between the first arm and the adjacent panel. The leveling block generally has an upper surface that engages the arm, and a bottom that abuts against the adjacent panel. In a preferred embodiment, the leveling block has a channel formed in upper surface, configured to receive the tab on the arm. The particular size of leveling block is chosen, conforming essentially to the difference in thicknesses between the first and second panels. The exposed surfaces of the leveling block is typically formed from a variety of materials, such as a carpet, laminate flooring, ceramic or wood tile, linoleum, turf, paper, natural wood or veneer, vinyl, wood, ceramic or composite finish, or any type of covering, while the interior of the leveling block is generally formed from a wood or other structural material. The leveling block additionally facilitates the use of floor coverings having varying thicknesses when covering a subfloor. The leveling block helps the molding not only cover the gap, but provide a smoother transition from one surface to another.

Alternatively, the tab may be positioned to slidably engage the edge of a panel when no leveling block is used. A lip may additionally be positioned on the tab in order to slidably engage a protuberance, adjacent an upper edge of the clamp in order to retain the assembly in its installed position.

The tab is preferably shaped as to provide forces to maintain the assembly in the installed position. Thus, typically the tab may be frustum-shaped, with its narrow edge closest to the arm and the wider edge furthest from the arm. Additionally, the tab may be lobe shaped, having a bulbous end furthest from the arm. Of course, any suitable shape is sufficient, as long as the tab can provide enough resistive forces to hinder removal of the installed assembly. By forming a corresponding channel in the leveling block (or in the upper surface of the flooring element), the tab can help to secure the assembly in place.

The assembly may additionally be used to cover gaps between tongue-and-groove type panels, such as glueless laminate floor panels. In addition to the uses mentioned above, the tab may also be designed to mate with a corresponding channel in the panel the edge of one of the flooring elements, or may actually fit within a grooved edge. In order to better accommodate this type of gap, a second tab may be positioned to depend from the second panel engaging surface.

An adhesive, such as a glue, a microballoon adhesive, contact adhesive, or chemically activated adhesive including a water-activated adhesive, may be positioned on the tab, the

3

foot, and the arms. Of course, such an adhesive is not necessary, but may enhance or supplement the snap-type fit of the assembly into the gap between the floor elements. Additionally, the adhesive may assist in creating a more air-tight or moisture-tight joint.

The assembly may be used in other non-coplanar areas, such as the edge between a wall and a floor, or even on stairs. For example, the assembly may include, the first and second arms, and foot as described above, but instead of transitioning between two floor elements placed in the same plane, may form the joint between the horizontal and vertical surfaces of a single stair element.

The inventive assembly may be used for positioning between adjacent tongue-and-groove panels; in this regard, the assembly functions as a transition molding, which provides a cover for edges of dissimilar surfaces. For example, when installing floors into a home, the assembly could be used to provide an edge between a hallway and a bedroom, between a kitchen and living or bathroom, or any areas where distinct flooring is desired. Additionally, the assembly may be incorporated into differing types of flooring, such as wood, tile, linoleum, carpet, or turf.

The invention also is drawn to an inventive method for covering a gap between adjacent panels of a generally planar surface. The method includes multiple steps, including, inter alia, placing the foot in the gap, pressing the respective arms contact with the respective floor elements, and configuring at least one of the tab and the foot to cooperate to retain the assembly in the gap after the assembly has been installed.

Other objects, features and advantages of the present invention will become apparent from the following detailed description. It should be understood, however, that the detailed description and the specific examples, while indicating preferred embodiments of the invention, are given by way of illustration only, since various changes and modifications within the spirit and scope of the invention will become apparent to those skilled in the art from this detailed description.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded view of an embodiment of the joint cover assembly in accordance with the invention;

FIGS. 1A and 1B are alternate embodiments for the molding of the invention;

FIG. 2 is a perspective view of a second embodiment of the joint cover assembly in accordance with the invention;

FIGS. 3 and 3A are a comparative perspective views of embodiments of the leveling block;

FIG. 4 is perspective view of an additional embodiment of the joint cover assembly in accordance with the invention;

FIGS. 5 and 5A are a comparative perspective views of embodiments of the leveling block;

FIGS. 6-16 show comparative cross-sectional views of various embodiments of the molding portion of the joint cover assembly;

FIG. 17 depicts an embodiment of the assembly of the invention for use with stairs;

FIG. 18 shows a second embodiment of the assembly for use with stairs; and

FIG. 19 is a side view of a generic element, which may be broken in the components of the invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIG. 1 shows an exploded view of the various parts of the inventive joint cover assembly 10. The assembly 10 includes

4

a T-shaped molding 11, having an foot 16 formed so that it can fit in a gap 20 between adjacent floor elements 24, 25. FIG. 1 demonstrates a typical use, in which the gap 20 is formed adjacent an edge 27 of a floor element 24. Although FIG. 1, depicts all of the floor elements 24 to be conventional tongue-and-groove type floor panels (having a groove 27 positioned adjacent to the gap 20), this is merely one of any number of embodiments. For example, floor elements 24, 25 need not be the same type of floor element. Specifically, the floor elements 24 can be any type of flooring designed to used as a floor or placed over a subfloor 22, e.g., tile, linoleum, laminate flooring, concrete slab, parquet, vinyl, turf, composite or hardwood. As is known, laminate floors are not attached to the subfloor 22, but are considered "floating floors".

The molding 11 is provided with a first arm 12 and a second arm 14 extending in a single plane generally perpendicular to the foot 16. Preferably, the foot 16, first arm 12, and the second arm 14 from a general T-shape, with the arms 12 and 14 forming the upper structure and the foot 16 forming the lower structure.

The molding 11, as well as any of the other components used in the invention, may be formed of any suitable, sturdy material, such as wood, polymer, or even a wood/polymer composite. Due to the growing popularity of wood and laminate flooring and wood wall paneling, however, a natural or simulated wood-grain appearance may be provided on the outward facing surface 34 of the molding 11. The outward facing surface 34 may be a conventional laminate, such as a high pressure laminate (HPL), direct laminate (DL) or a post-formed laminate (as described in U.S. application Ser. No. 08/817,391, herein incorporated by reference in its entirety); a foil; a print, such as a photograph or a digitally generated image; or a liquid coating including, for example, aluminum oxide. Thus, in the event natural wood or wood veneer is not selected as the material, the appearance of wood may be simulated by coating the outer surface 34 with a laminate having a decor sheet that simulates wood. Alternatively, the decor can simulate stone, brick, inlays, or even fantasy patterns. Preferably, the outward facing surface 34 extends completely across the upper face of the molding, and optionally over under surface 36 and 38 of arms 12 and 14, respectively.

The core structure of components of the invention, including the center of the molding 11, that is in contact with the outward facing surface 34 is formed from a core material. Typical core materials include wood based products, such as high density fiberboard (HDF), medium density fiberboard (MDF), particleboard, strandboard, and solid wood; plastic-based products, such as polyvinyl chloride (PVC), thermal plastics or mixtures of plastic and other products; and metals, such as aluminum, stainless steel, or copper. The various components of the invention are preferably constructed in accordance with the methods disclosed by U.S. application Ser. No. 08/817,391, as well as U.S. application Ser. No. 10/319,820, filed Dec. 16, 2002, each of which is herein incorporated by reference in its entirety.

A securing means, such as a metal clamp 26, may be coupled to the subfloor 22 within the gap 20 formed between the two floor elements 24. The clamp may be coupled to the subfloor 22 by fasteners, such as screws or any conventional coupling method, such as nails or glue. The clamp 26 and the foot 16 are preferably cooperatively formed so that the foot 16 can slide within the clamp 26 without being removed. For example, the clamp 26 may be provided with in-turned ends 30 designed to grab the outer surface of the foot 16.

5

Typically, the foot 16 has a dove-tail shape, having the shorter parallel edge joined to the arms 12 and 14; and the clamp 26 is a wire element having a corresponding shape as to mate with the foot 16 and hold it in place. Additionally, the securing element may take the form of an inverted T-element 50 (FIG. 1A), configured to mate with a corresponding groove 52 in an end of foot 16, such that friction between the T-element 50 and the groove 52 secures the molding 11 in place, or, in the alternative, the end of the foot 16 may be provided with a narrowed section, designed to mate with a groove in the securing element. Finally, each of the T-element 50, mating section of the foot 16 and/or various grooves, may be provided with notched or barbed edges 55 to simultaneously assist in mating and resist disassembly (FIG. 1B). However, in an alternative embodiment, the securing element can be eliminated because the molding 11 can be affixed to one of the floor elements 24, 25, by, for example, an adhesive. Preferably however, the molding 11 is not secured to both floor elements 24, 25, as to permit a degree of relative movement, or floating, between the floor elements 24, 25.

The clamp 26 may additionally be formed of a sturdy, yet pliable material that will outwardly deform as the foot 16 is inserted, but will retain the foot 16 therein. Such materials include, but are not limited to, plastic, wood/polymer composites, wood, and polymers.

A tab 18 is shown as extending downwardly from the first arm 12. As shown in FIG. 1, the tab 18 extends downward, or away from an outward facing surface 34 of the molding, and runs generally parallel to the foot 16. As shown in FIG. 1, the tab 18 may also be in the shape of a dove-tail with a shorter edge adjacent to the first arm 12; however, other suitable shapes are possible. The shape of the outwardly facing surface 34 of the molding 11 is shown as being convex in some of the figures (e.g., FIGS. 1A, 1b and 7), and substantially planar in others (e.g., FIGS. 1, 2, 4, and 6). When the outwardly facing surface 34 is substantially planar, the edges of the molding 11 may either be upright or at an angle, typically angling away from the foot 16.

The assembly may further include a leveling block 40. When flooring elements 24 and 25 are of differing heights, the leveling block 40 is positioned between either the first arm 12 or the second arm 14 and the subfloor 22. Preferably, the size of the leveling block 40 is selected to correspond essentially to the difference in heights of the two flooring elements 24 and 25. For example, if one flooring element 24 is a ceramic tile, having a thickness of 2" and the second flooring element 25 is linoleum, having a thickness of 1/4", the leveling block 40 would typically have a thickness of 1 3/4" to bridge the difference and be placed between arm 12 and the other flooring element 25. Without the leveling block 40, a significant space would exist between the second flooring element 25 and the molding 11, allowing for moisture and dirt to accumulate. While the difference in heights of the flooring elements 24, 25 is generally caused by a difference in thickness between the two flooring elements 24, 25, the present invention may also be used to "flatten out" an uneven subfloor 22. In a preferred embodiment, the leveling block is provided with a channel 42 designed to receive the tab 18.

Even though the assembly 10 may function without any type of glue or adhesive, an alternate embodiment includes the placement of adhesive 31 on the molding 11. The adhesive may be placed on molding 11 at the factory (for example, pre-glued). Alternatively, the glue may be applied while the floor elements 24, 25 are being assembled. As shown in FIG. 6, the adhesive 31 may be provided as a

6

strip-type adhesive, but any type of adhesive, such as glue, chemical or chemically-activated adhesive, water-activated adhesive, contact cements, microballoon adhesive may be used. Additionally, while the embodiment in FIG. 6 shows a single adhesive strip 31 attached to the arm 12, the adhesive 31 may be attached to the tab 18, foot 16, and/or any location where two pieces of the assembly are joined. Preferably, adhesive 31 is only applied to one of the arms 12, 14 in order to allow accommodate some slight relative movement that may occur during changes of temperature, for example. This relative movement is known in the flooring art as "float". Allowing float may also eliminate unneeded material stresses as well, thereby reducing warping or deterioration of the material surface. Typical adhesives used in the invention include a fresh adhesive, such as PERGO GLUE (available from Perstorp AB of Perstorp, Sweden), water activated dry glue, dry glue (needing no activation) or an adhesive strip with a peel off protector of paper.

FIG. 2 shows a typical embodiment of the assembly 10 in an installed condition, wherein the floor elements 24 and 25 are of differing thicknesses (H and H' respectively). Of course, the element 24 may be of any type of covering, such as carpet, turf, tile, linoleum or the like. As shown in FIG. 3, the leveling block 40 typically includes a substantially flat bottom 46, and a top 45 having a channel 42, and an inner surface 44. The top 45 of the leveling block 40 is designed to firmly abut the under surface 36 of the first arm 12, while the bottom 46 abuts floor element 25. Typically, the channel 42 is shaped as to firmly hold the tab 18. The inner surface 44 of the leveling block 40 need not abut the foot, as generally, a small amount of clearance is provided between the clamp 26 or foot 16 and the inner surface 44 of the leveling block. However, the inner surface 44 may be configured to contact either of the clamp 26 or foot 16.

The leveling block 40 may be made of a composite, pliable material that is also resilient. For example, the tab 18 may be formed to be slightly larger than the opening of the channel 42, thereby forcing the channel 42 to outwardly deform in order to accommodate the tab 18, and therefore snap-fit together.

As shown in FIG. 3, the outer surface 47 of the leveling block 40 is generally treated to match or blend with the outer surface 34 of the molding or the floor element 24, 25 in order to improve aesthetics.

FIG. 3A shows an alternate embodiment of a leveling block 40'. An outer surface 47' of this embodiment is configured generally perpendicular to an upper surface 44' and a lower surface 46' of the leveling block 40'. This alternate configuration of the outer surface 47' not only provides a different appearance, it also has been shown to be preferred when softer surfaces, such as carpet or turf, are positioned beneath the lower surface 46' of the leveling block 40'.

FIG. 4 shows yet another alternate embodiment of the leveling block 140. The leveling block 140 includes a bottom 146, and a top 145 and an inner surface 144. The top 145 of the leveling block 140 is designed to firmly abut the under surface 36 of the first arm 12, while the bottom 146 abuts floor element 25. This leveling block 140 is positioned between a first arm 112 of the molding 111 and the flooring element 125. In this embodiment of the assembly 110, the tab 118 engages the inner surface 144 of the leveling block 140.

FIG. 5 shows an embodiment of a leveling block 140 that may be used in the assembly shown in FIG. 4. Specifically,

7

the leveling block 140 in FIG. 5 has a solid, uninterrupted upper surface 145, without the need for a channel because the tab (118, as in FIG. 4) will engage the inner surface 144 of the leveling block of instead of the top surface 145.

FIG. 5A shows an additional shape of a leveling block 140' that can be incorporated into the assembly shown in FIG. 4. Leveling block 140' has a front surface 146' that will be generally perpendicular to a floor 122 (as shown in FIG. 4) when the leveling block 140' is installed. This perpendicular configuration of the front surface 147' not only provides a different appearance, it has also been found to be preferred with softer surfaces, such as carpet or turf.

FIG. 6 shows an underside view of the molding 11. In particular the first under surface 36 of the first arm 12, and the second under surface 38 of the second arm 14 are shown. In one embodiment, under surface 36 is provided with the adhesive 31 positioned to adhere to a surface of a floor element 24, 25 or leveling block 40, 40', 140, 140'.

FIGS. 7-15 show various cross-sectional views of the molding 11. These figures show comparative configurations for the arms 12, 14, the tab 18, and the shape of molding 11.

In FIG. 7, the tab 18 is selected to be an outward-facing hook having a barb facing away from the foot 16, while the upper surface of the molding has a convex curvature. This particular selection for the tab 18 may be used to engage an edge or groove of an adjacent floor element 24, 25, or in the alternative, an adjacent leveling block 40. Additionally, a shim 48 may be positioned between the foot 16 and the subfloor 22. The shim 48 is generally a pliable and flexible, yet durable material. The shim 48 may be used in place of, or in combination with, clamp 26.

FIGS. 8-15 show cross-sections of other shapes for the molding 11. The configurations of the moldings are very similar, except for the shape of the tab 18. The differing tabs have been assigned decimal numbers beginning with 18, for clarity purposes. A tab 18.1 (FIG. 8) is a bulbous shape, having its rounded end furthest from the arm 12. A tab 18.2 of FIG. 9 is provided with a hook-shape with a point facing the foot 16. In the embodiment shown in FIG. 10, a tab 18.3 is in the shape of a dove-tail, similar to the shape of the tab 18 shown in FIG. 2.

The purpose of the various-shaped tabs (18-18.8) is multi-fold. Primarily, the tab 18 serves to engage the channel 42 of the leveling block 40, which is used when covering of differing thickness is used. Alternatively, the respective tab (18-18.8) may engage an edge of a panel, carpet, turf, or other type of floor covering. As shown herein, the respective tab (18-18.8) may even be configured to engage a leveling block.

It is additionally considered within the scope of the invention to eliminate the tab. In such an embodiment, preferably, the molding 11 includes an adhesive on the under surface 36, 38 of one of the arms 12,14.

With respect to FIG. 16, the invention may also be used when the floor elements are not co-planar. For example, one embodiment includes a stair nose attachment 210 that can be attached to the same molding 11, as described above. As used herein, a stair nose attachment is a component capable of mating with the molding 11 as to conceal, protect or otherwise cover a joint forming a single stair. Typically, the molding 11 is provided atop the first floor element 24 on the horizontal, or run 220 of the stair, such that the stair nose attachment 210 bridges the joint between the first floor element 24 and the second floor element 25, forming the vertical section of the stair, or rise 230. As a result, the invention can be used to cover and protect joints between

8

flooring elements on stairs. While in a preferred embodiment, the floor elements covering the rise 220 and run 230 are the same type of flooring material, the flooring elements need not be of the same construction.

The stair nose attachment 210 may include a tab receiving groove 212, permitting connection of the stair nose attachment 210 to the molding 11. Because the tab receiving groove 212 in the stair nose attachment 210 is preferably shaped according to the shape of the tab 18 of the molding 11, the stair nose attachment 210 may be attached to the molding 11 by, for example, snapping or sliding.

However, in other embodiments, the tab on the under surface 36 of first is eliminated. While the tabs and corresponding grooves may be eliminated, it is nevertheless considered within the scope of the invention to utilize an adhesive, as described herein. Alternatively, the stair nose attachment 210 may include a tab 218 to mate with a corresponding groove 219 on the foot 16 of the molding 11 (FIG. 17), or vice-versa.

Additionally, an adhesive, as described herein, may be applied to any component in order to secure the connection between the molding 11 and the stair nose attachment 210. Although FIG. 16 shows tab 18 (and accordingly the tab receiving groove 212) as having a dove-tail shape, it is considered within the scope of the invention to vary the particular shape of the tab 18 and tab receiving groove 212. For example, the shapes may be bulbous, or slide tongue to matching groove, or any other configuration described herein.

It is also possible to form the molding 11, leveling block 40 and stair nose attachment 210 from the same element, as shown in FIG. 18. Specifically, a generic element, indicated at 300 can be milled, sawed or otherwise constructed with a variety of "break away" sections 300A, 300B, and 300C. When one or more break away sections 300A, 300B, 300C are removed, by for example, scoring and snapping, cutting, sawing or simply bending, the individual pieces can result. Preferably, the generic element 300 is formed as a unitary structure which is then scored as to provide stress-points to allow the removal of the break-away sections. While not required by the present invention, typically, the removal of the break away sections 300A, 300B, 300C requires a significant amount of physical force or labor, as the remaining structure must maintain its structural integrity. Alternatively, removal of the break-away sections 300A, 300B, 300C may require the use of a specialized tool.

By designing the generic element 300 in accordance with the invention. An installer can manipulate the generic element 300 to produce any needed component. For example, removing sections 300B and 300C would produce a typical stair nose attachment 210, while removing sections 300A and 300C would produce a typical molding 11. Due to this construction, it is possible to manufacture the generic elements to be purchased and appropriately broken down by the installer. Similarly, when removing sections 300A and 300C to form the molding 11, section 300A can be used as a leveling block as described herein.

By allowing an end user to purchase the generic element 300 instead of separate components, the retailers and/or distributors may accordingly reduce their inventory requirements. For example, typically over one-hundred different design patterns for the outwardly facing surface 34 of the molding 11 (as well as for the leveling block 40 and stair nose attachment 210) are produced. By allowing for the inventory to include only the generic elements of the invention, the total number of components retained can be

9

reduced from three per design to one per design. Similarly, the installer only need purchase the generic elements 300, rather than three individual components.

It should be apparent that embodiments other than those specifically described above may come within the spirit and scope of the present invention. Hence, the present invention is not limited by the above description.

What is claimed is:

1. A joint cover assembly for covering a gap between two floor elements, the floor elements covering a sub-surface, the assembly comprising:

- a molding, comprising:
 - a foot positioned along a longitudinal axis;
 - a first arm extending generally perpendicularly from the foot, and having a generally planar under surface;
 - a second arm extending generally perpendicularly from the foot and having a generally planar under surface; and
 - a tab, positioned on the under surface of the first arm or the second arm, the tab being displaced from the foot and depending generally perpendicularly from the respective under surface, wherein the tab is dovetail-shaped in shape with a large base distal the under surface of the respective first arm or second arm;

wherein at least the tab and the foot cooperate to retain the molding in the gap when the assembly is in an installed condition.

2. A joint cover assembly for covering a gap between two floor elements, the floor elements covering a sub-surface, the assembly comprising:

- a molding, comprising:
 - a foot positioned along a longitudinal axis;
 - a first arm extending generally perpendicularly from the foot, and having a generally planar under surface;
 - a second arm extending generally perpendicularly from the foot and having a generally planar under surface; and
 - a tab positioned on the under surface of the first arm or the second arm, the tab being displaced from the foot and depending generally perpendicularly from the respective under surface;

wherein and at least the tab and the foot cooperate to retain the molding in the gap and at least one of the two floor elements is a tongue-and-groove panel, and the tab is formed to engage a groove of an adjacent panel when the assembly is in an installed condition.

3. A joint cover assembly for covering a gap between two floor elements, the floor elements covering a sub-surface, comprising:

- a foot configured to be positioned within the gap;
- a first member generally perpendicular to the foot, and having a generally planar under surface;
- a second member extending generally perpendicular to the foot, and a generally planar under surface;
- a tab running generally parallel to the foot and positioned on the first member, the tab extending from the under surface of the first member;
- a securing element, connecting the molding to the sub-surface and positioned within the gap;
- a shim positioned between the foot and the sub-floor, wherein the foot engages the securing element in order to retain the molding over the gap when the assembly is in an installed condition.

4. A method of covering a joint between two generally coplanar floor elements, the method comprising:

10

providing a molding, the molding comprising:

- a foot positioned along a longitudinal axis;
- a first arm extending generally perpendicularly from the foot, and having generally planar under surface;
- a second arm extending generally perpendicularly from the foot, and having second planar under surface; and
- a tab on the first under surface displaced from the foot, the tab extending generally perpendicularly from the first under surface;

placing the foot in the gap;

joining the first under surface to one floor element; providing adhesive to the molding; and

configuring at least one of the tab and the foot to cooperate to retain the molding in the gap by: affixing a securing element to a sub-surface below the floor elements; positioning the securing element within the gap; and engaging the foot within the securing element.

5. A method of covering a joint between two generally coplanar floor elements, the method comprising:

providing a molding, the molding comprising:

- a foot positioned along a longitudinal axis;
- a first arm extending generally perpendicularly from the foot and having generally planar under surface;
- a second arm extending generally perpendicularly from the foot, and having second planar under surface; and
- a tab on the first under surface displaced from the foot, the tab extending generally perpendicularly from the first under surface;

placing the foot in the gap;

joining the first under surface to one floor element; and configuring at least one of the tab and the foot to cooperate to retain the molding in the gap,

wherein the floor elements have tongue-and-groove edges, and the tab is formed to engage a groove of an adjacent panel when the molding is in the installed condition.

6. A joint cover assembly for covering a gap between two floor elements, the floor elements for covering a sub-surface, comprising:

- a foot configured to be positioned within the gap;
- a first member generally perpendicular to the foot;
- a second member extending generally perpendicular to the foot, at least one of the first and second members having a generally planar undersurface;
- a securing element, to connect the molding to the sub-surface and to be positioned within the gap;
- an attachment to be positioned between one of the first and second members and a floor element,
- wherein the attachment and the under surface of one of the first member and second member engage though a tongue-and-groove joint, wherein the groove is in the shape of a large base distal the under surface of a respective arm, and the foot engages the securing element in order to retain the molding over the gap when the assembly is in an installed condition.

7. The assembly of claim 6, wherein the attachment comprises the dovetail-shaped groove.

8. The assembly of claim 6, wherein the attachment is a stair nose attachment.

9. The assembly of claim 8, wherein the attachment is a stair nose attachment.

11

10. The assembly of claim 6, wherein the tongue is shaped to fit within said groove.

11. The assembly of claim 10, wherein the tongue is on the undersurface of the one of the first and second arms.

12. An assembly comprising:

a first molding comprising:

a foot;

a first member generally perpendicular to the foot; and

a second member extending generally perpendicular to the foot, at least one of the a generally planar under surface;

12

said foot defining a groove in a sidewall thereof;

a securing element, connecting the first molding element to the sub-surface and positioned within the gap; and

an attachment, comprising a protrusion sized and shaped to fit in said groove in said foot,

wherein said foot engages the securing element in order to retain the molding over the gap when the assembly is in an installed condition.

* * * * *



US006860074B2

(12) **United States Patent**
Stanchfield

(10) **Patent No.:** **US 6,860,074 B2**
(45) **Date of Patent:** **Mar. 1, 2005**

(54) **TRANSITION MOLDING**

3,758,650 A * 9/1973 Hurst 264/34

(75) Inventor: **Oliver Stanchfield, Raleigh, NC (US)**

(List continued on next page.)

(73) Assignee: **Pergo (Europe) AB, Trelleborg (SE)**

FOREIGN PATENT DOCUMENTS

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

DE	3640822	6/1988
DE	467150	6/1992
DE	2 9703962	4/1997
DE	1 9821938	11/1999
DE	1 0131248	1/2003
WO	9901628	1/1999
WO	0120101	3/2001
WO	0 3093686	11/2003

(21) Appl. No.: **10/347,489**

(22) Filed: **Jan. 21, 2003**

(65) **Prior Publication Data**

US 2003/0154678 A1 Aug. 21, 2003

Related U.S. Application Data

OTHER PUBLICATIONS

U.S. patent application Publication No. 2003/0159389, published Aug. 28, 2003.

U.S. patent application Publication No. 2003/0118812, published Jun. 26, 2003.

(63) Continuation-in-part of application No. 09/986,414, filed on Nov. 8, 2001, now abandoned.

(List continued on next page.)

(51) **Int. Cl.**⁷ **E04B 1/68**

Primary Examiner—Carl D. Friedman

Assistant Examiner—Basil Katcheves

(52) **U.S. Cl.** **52/464; 52/466; 52/468; 52/592.1**

(74) *Attorney, Agent, or Firm*—Stevens, Davis, Miller & Mosher, L.L.P.

(58) **Field of Search** **52/287.1, 464, 52/466, 467, 468, 592.1, 288.1**

(57) **ABSTRACT**

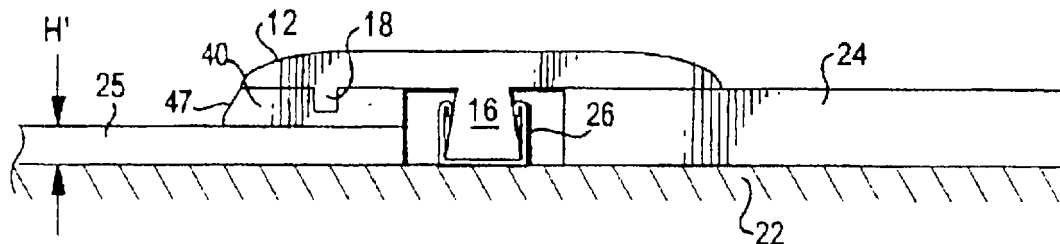
(56) **References Cited**

U.S. PATENT DOCUMENTS

1,357,713 A	11/1920	Lane	
2,100,238 A	11/1937	Burgess	
2,194,086 A	3/1940	Horn	
2,363,429 A	11/1944	Lowry	
3,162,906 A	12/1964	Dudley	
3,199,258 A	8/1965	Jentoft et al.	
3,286,425 A	11/1966	Brown	
3,331,171 A	7/1967	Hallock	
3,339,329 A	* 9/1967	Berg	52/395
3,363,381 A	* 1/1968	Forrest	52/464
3,488,828 A	1/1970	Gallagher	
3,665,666 A	* 5/1972	Delcroix	52/461
3,671,369 A	6/1972	Kvalheim et al.	
3,696,575 A	* 10/1972	Armstrong	52/288.1
3,745,726 A	7/1973	Thom	

The invention is a joint cover assembly for covering a gap adjacent an edge of a panel that covers a sub-surface, and a method of covering such a gap. The assembly includes a molding having a foot, a first arm, and a second arm. The foot is positioned along a longitudinal axis, and the first arm extends generally perpendicularly from the foot. The second arm extends generally perpendicularly from the foot. A tab depends generally perpendicularly from the first panel engaging surface. At least one of the tab and the foot engage the edge in order to tightly fit within the gap. The method includes the steps of placing the foot in the gap, pressing the respective panel engaging surfaces into contact with respective panels, and configuring at least one of the tab and the foot to cooperate to retain the molding in the gap when the assembly is in an installed condition.

12 Claims, 5 Drawing Sheets



US 6,860,074 B2

Page 2

U.S. PATENT DOCUMENTS

3,760,544 A 9/1973 Hawes et al.
3,810,707 A 5/1974 Tungseth et al.
4,067,155 A 1/1978 Ruff et al.
4,198,455 A 4/1980 Spiro et al.
4,292,774 A 10/1981 Mairle
4,455,803 A 6/1984 Kornberger
4,461,131 A 7/1984 Pressell
4,504,347 A 3/1985 Munk et al.
4,520,062 A 5/1985 Ungar et al.
4,643,237 A 2/1987 Rosa
5,074,089 A * 12/1991 Kemmer et al. 52/395
5,155,952 A * 10/1992 Herwegh et al. 52/100
5,365,713 A 11/1994 Nicholas et al.
5,581,967 A 12/1996 Glatz
5,888,017 A 3/1999 Corrie
6,141,920 A 11/2000 Kemper
6,158,915 A 12/2000 Kise
6,219,982 B1 4/2001 Eyring
6,230,385 B1 * 5/2001 Nelson 29/450
6,253,514 B1 7/2001 Jobe et al.

6,345,480 B1 * 2/2002 Kemper et al. 52/395
6,421,970 B1 7/2002 Martensson et al.
6,517,935 B1 2/2003 Kornfalt et al.
6,588,165 B1 * 7/2003 Wright 52/506.05

OTHER PUBLICATIONS

U.S. patent application Publication No. 2002/0127374, published Sep. 12, 2002.

U.S. patent application Publication No. 2002/0189747, published Dec. 19, 2002.

U.S. patent application Publication No. 2004/0031226, published Feb. 19, 2004.

U.S. patent application Publication No. 2004/0031227, published Feb. 19, 2004.

U.S. patent application Publication No. 2002/0148551, published Oct. 17, 2002.

U.S. patent application Publication No. 2004/0041225, published Mar. 4, 2004.

* cited by examiner

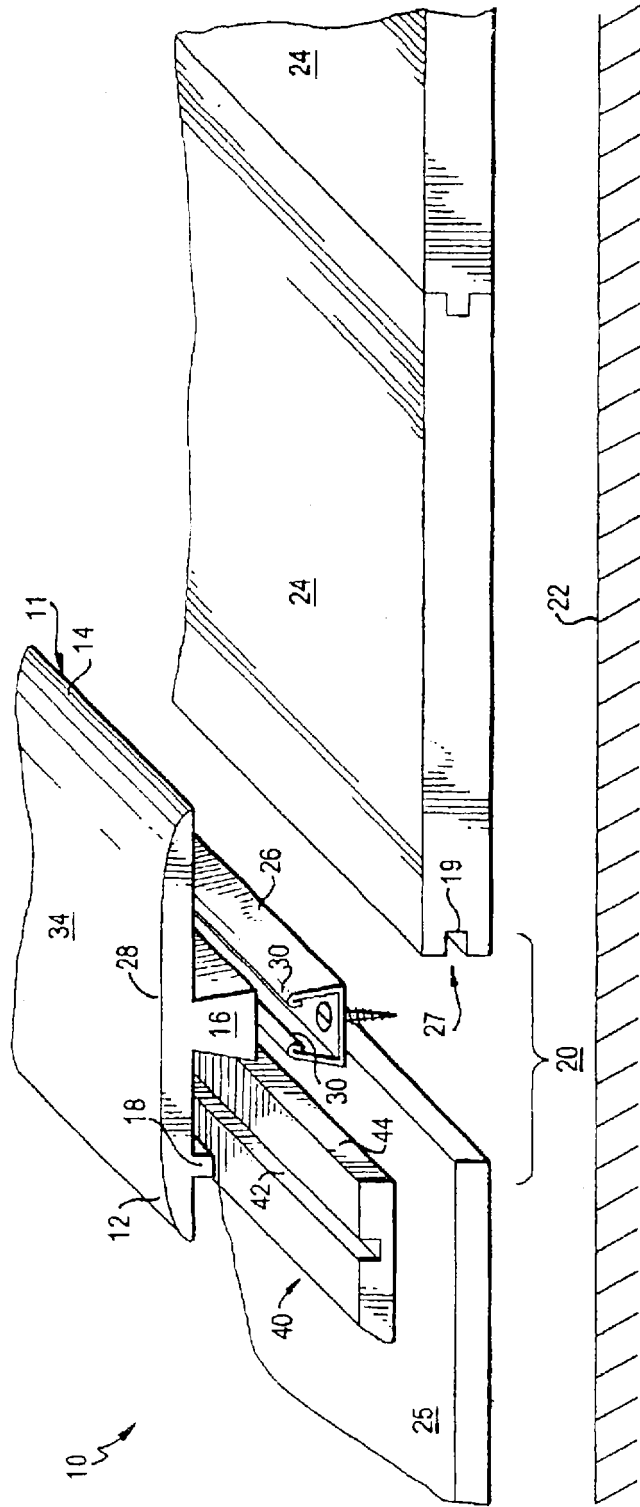


FIG. 1



FIG. 1A

FIG. 1B

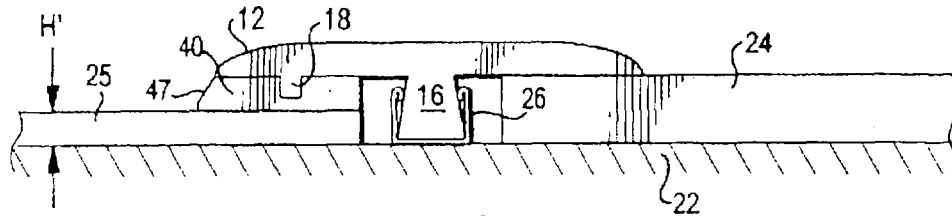


FIG. 2

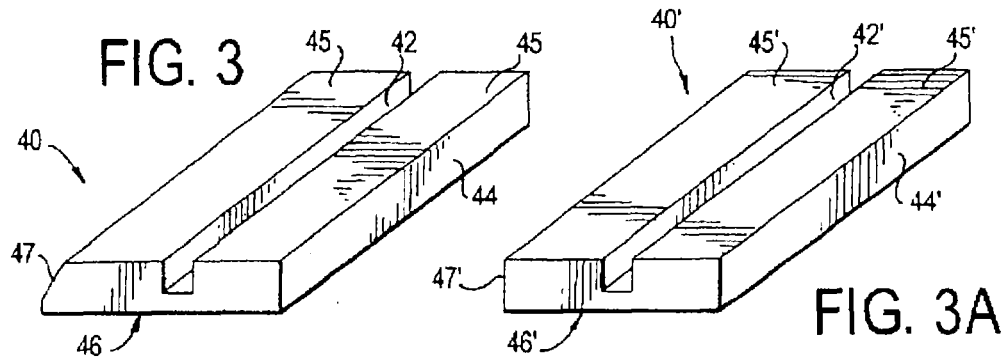


FIG. 3

FIG. 3A

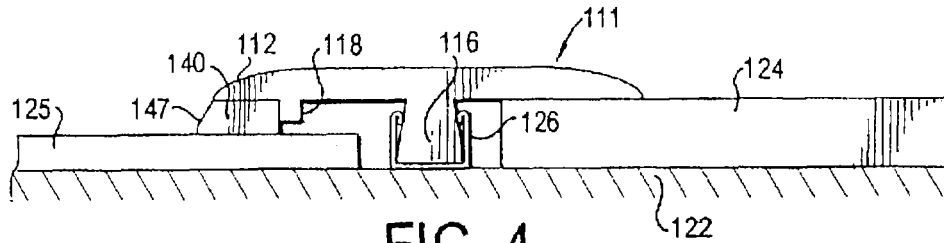


FIG. 4

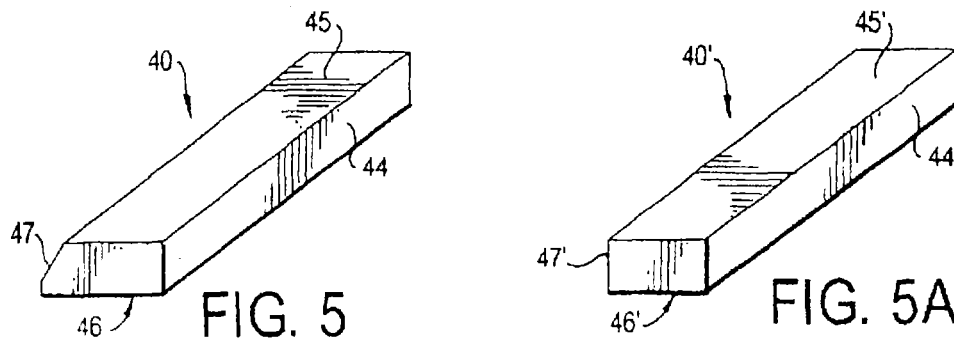


FIG. 5

FIG. 5A

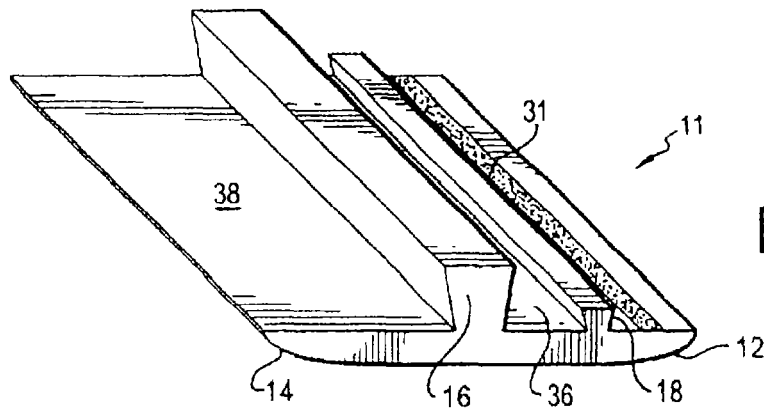


FIG. 6

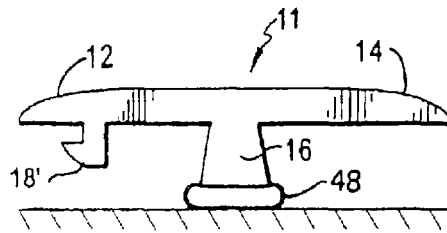


FIG. 7

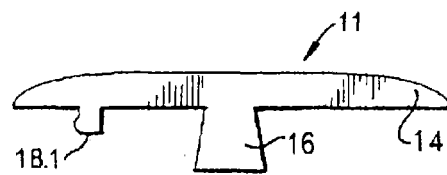


FIG. 8

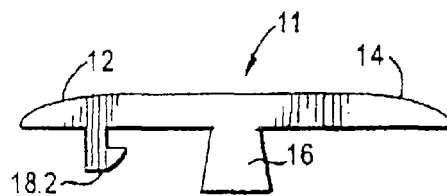


FIG. 9

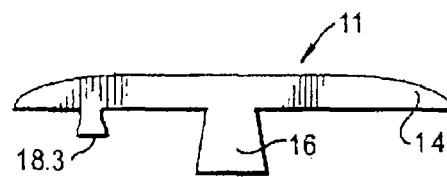


FIG. 10

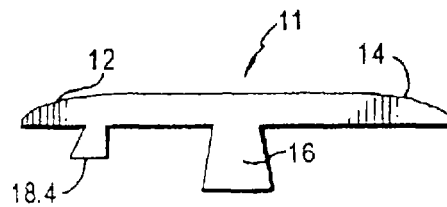


FIG. 11

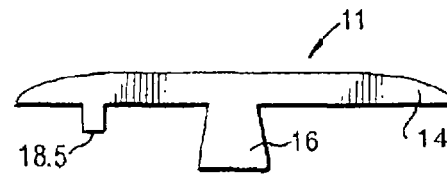


FIG. 12

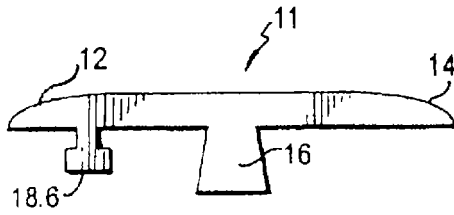


FIG. 13

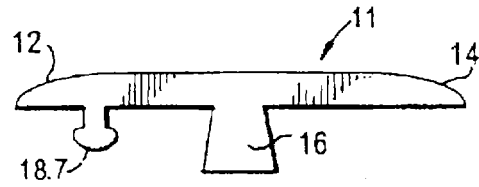


FIG. 14

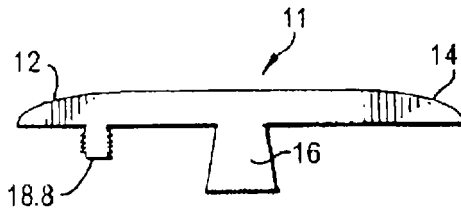


FIG. 15

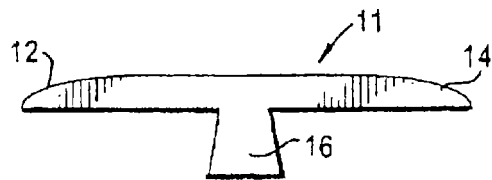


FIG. 16

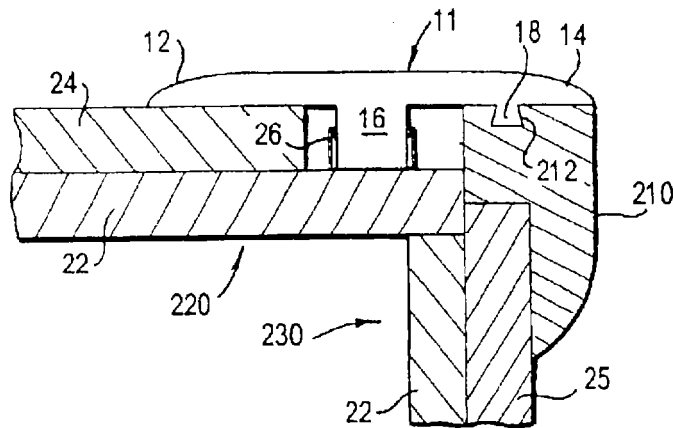


FIG. 17

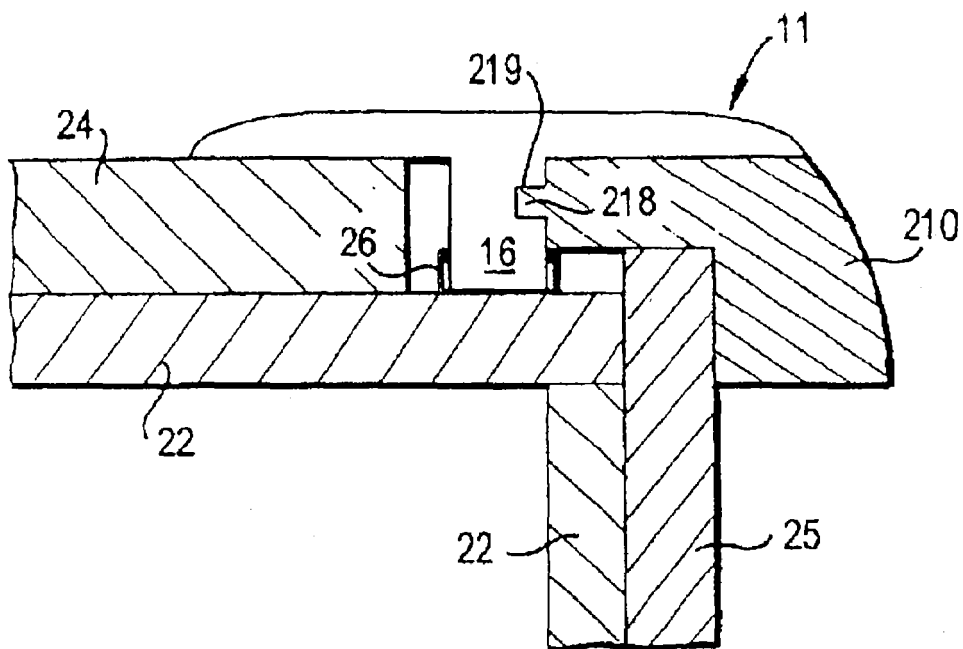


FIG. 18

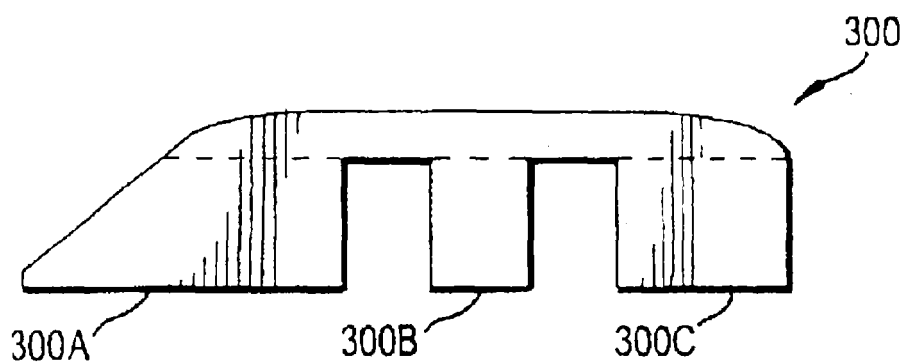


FIG. 19

1

TRANSITION MOLDING

This application is a Continuation-In-Part of U.S. application Ser. No. 09/986,414, having been filed on Nov. 8, 2001 now abandoned, herein incorporated by reference in its entirety.

BACKGROUND

1. Field of the Invention

The invention is a joint cover assembly that includes a molding, similar to a T-Molding, for covering a gap that may be formed adjacent a panel in a generally planar surface, such as between two adjacent flooring materials, a floor and a wall, or a riser and a runner in a step (or a series of steps).

2. Background of the Invention

Wood or laminate flooring has become increasingly popular. As such, many different types of this flooring have been developed. Generally, this type of flooring is assembled by providing a plurality of similar panels. The differing types of panels that have developed, of course, may have differing depths and thicknesses. Thus, when panels having different thicknesses are placed adjacent to each other, transition moldings are often used to create a smooth joint.

Additionally, one may desire to install floor panels adjacent to an area with different types of material. For example, one may desire to have one type of flooring in a kitchen (e.g., laminate flooring or ceramic tile), and a different appearance in an adjacent living room (e.g., linoleum or carpeting), and an entirely different look in an adjacent bath. Therefore, it has become necessary to develop a type of molding or seal that could be used as a transition from one type of flooring to another.

A problem is encountered, however, flooring materials that are dissimilar in shape or texture are used. For example, when a hard floor is placed adjacent a carpet, problems are encountered with conventional edge moldings placed there between. Such problems include difficulty in covering the gap that may be formed between the floorings having different height or thickness.

Moreover, for purposes of reducing cost, it is important to be able to have a molding that is versatile, having the ability to cover gaps between relatively coplanar surfaces, as well as surfaces of differing thicknesses.

It would also be of benefit to reduce the number of molding profiles that need to be kept in inventory by a seller or installer of laminate flooring. Thus, the invention also provides a method by which the number of moldings can be reduced while still providing all the functions necessary of transition moldings.

SUMMARY OF THE INVENTION

The invention is a joint cover assembly for covering a gap between edges of adjacent floor elements, such as panels. The assembly includes a body having a foot positioned along a longitudinal axis, and a first arm extending generally perpendicularly from the foot. The assembly may include a second arm also extending generally perpendicular to the foot. A tab may additionally be provided on either the first or second arms, displaced from the foot, extending perpendicularly from the arm.

The assembly is preferably provided with a securing means to prevent the assembly from moving once assembled. In one embodiment, the securing means is a clamp, designed to grab the foot. Preferably, the clamp includes a groove into which the foot is inserted. In a

2

preferred embodiment, the rail may be joined directly to a subsurface below the floor element, such as a subfloor, by any conventional means, such as, a nail, screw or adhesive.

The outward-facing surface of the assembly may be formed as a single, unitary, monolithic surface that covers both the first and second arms. This outward-facing surface may be treated, for example, with a laminate or a paper, such as a decor, impregnated with a resin, in order to increase its aesthetic value, or blend, to match or contrast with the panels.

A shim may also be placed between the foot and the subfloor. In one embodiment, the shim may be positioned on the underside of the clamp; however, if a clamp is not used, the shim may be positioned between the foot and the subfloor. The shim may be adhered to either the foot or subfloor using an adhesive or a conventional fastener, e.g., nail or screw.

The assembly may also include a leveling block positioned between the first arm and the adjacent panel. The leveling block generally has an upper surface that engages the arm, and a bottom that abuts against the adjacent panel. In a preferred embodiment, the leveling block has a channel formed in upper surface, configured to receive the tab on the arm. The particular size of leveling block is chosen, conforming essentially to the difference in thicknesses between the first and second panels. The exposed surfaces of the leveling block is typically formed from a variety of materials, such as a carpet, laminate flooring, ceramic or wood tile, linoleum, turf, paper, natural wood or veneer, vinyl, wood, ceramic or composite finish, or any type of covering, while the interior of the leveling block is generally formed from a wood or other structural material. The leveling block additionally facilitates the use of floor coverings having varying thicknesses when covering a subfloor. The leveling block helps the molding not only cover the gap, but provide a smoother transition from one surface to another.

Alternatively, the tab may be positioned to slidably engage the edge of a panel when no leveling block is used. A lip may additionally be positioned on the tab in order to slidably engage a protuberance, adjacent an upper edge of the clamp in order to retain the assembly in its installed position.

The tab is preferably shaped as to provide forces to maintain the assembly in the installed position. Thus, typically the tab may be frustum-shaped, with its narrow edge closest to the arm and the wider edge furthest from the arm. Additionally, the tab may be lobe shaped, having a bulbous end furthest from the arm. Of course, any suitable shape is sufficient, as long as the tab can provide enough resistive forces to hinder removal of the installed assembly. By forming a corresponding channel in the leveling block (or in the upper surface of the flooring element), the tab can help to secure the assembly in place.

The assembly may additionally be used to cover gaps between tongue-and-groove type panels, such as glueless laminate floor panels. In addition to the uses mentioned above, the tab may also be designed to mate with a corresponding channel in the panel the edge of one of the flooring elements, or may actually fit within a grooved edge. In order to better accommodate this type of gap, a second tab may be positioned to depend from the second panel engaging surface.

An adhesive, such as a glue, a microballoon adhesive, contact adhesive, or chemically activated adhesive including a water-activated adhesive, may be positioned on the tab, the

foot, and the arms. Of course, such an adhesive is not necessary, but may enhance or supplement the snap-type fit of the assembly into the gap between the floor elements. Additionally, the adhesive may assist in creating a more air-tight or moisture-tight joint.

The assembly may be used in other non-coplanar areas, such as the edge between a wall and a floor, or even on stairs. For example, the assembly may include, the first and second arms, and foot as described above, but instead of transitioning between two floor elements placed in the same plane, may form the joint between the horizontal and vertical surfaces of a single stair element.

The inventive assembly may be used for positioning between adjacent tongue-and-groove panels; in this regard, the assembly functions as a transition molding, which provides a cover for edges of dissimilar surfaces. For example, when installing floors into a home, the assembly could be used to provide an edge between a hallway and a bedroom, between a kitchen and living or bathroom, or any areas where distinct flooring is desired. Additionally, the assembly may be incorporated into differing types of flooring, such as wood, tile, linoleum, carpet, or turf.

The invention also is drawn to an inventive method for covering a gap between adjacent panels of a generally planar surface. The method includes multiple steps, including, inter alia, placing the foot in the gap, pressing the respective arms contact with the respective floor elements, and configuring at least one of the tab and the foot to cooperate to retain the assembly in the gap after the assembly has been installed.

Other objects, features and advantages of the present invention will become apparent from the following detailed description. It should be understood, however, that the detailed description and the specific examples, while indicating preferred embodiments of the invention, are given by way of illustration only, since various changes and modifications within the spirit and scope of the invention will become apparent to those skilled in the art from this detailed description.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded view of an embodiment of the joint cover assembly in accordance with the invention;

FIGS. 1A and 1B are alternate embodiments for the molding of the invention;

FIG. 2 is a perspective view of a second embodiment of the joint cover assembly in accordance with the invention;

FIGS. 3 and 3A are a comparative perspective views of embodiments of the leveling block;

FIG. 4 is perspective view of an additional embodiment of the joint cover assembly in accordance with the invention;

FIGS. 5 and 5A are a comparative perspective views of embodiments of the leveling block;

FIGS. 6-16 show comparative cross-sectional views of various embodiments of the molding portion of the joint cover assembly;

FIG. 17 depicts an embodiment of the assembly of the invention for use with stairs;

FIG. 18 shows a second embodiment of the assembly for use with stairs; and

FIG. 19 is a side view of a generic element, which may be broken in the components of the invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIG. 1 shows an exploded view of the various parts of the inventive joint cover assembly 10. The assembly 10 includes

a T-shaped molding 11, having a foot 16 formed so that it can fit in a gap 20 between adjacent floor elements 24, 25. FIG. 1 demonstrates a typical use, in which the gap 20 is formed adjacent an edge 27 of a floor element 24. Although FIG. 1, depicts all of the floor elements 24 to be conventional tongue-and-groove type floor panels (having a groove 27 positioned adjacent to the gap 20), this is merely one of any number of embodiments. For example, floor elements 24, 25 need not be the same type of floor element. Specifically, the floor elements 24 can be any type of flooring designed to be used as a floor or placed over a subfloor 22, e.g., tile, linoleum, laminate flooring, concrete slab, parquet, vinyl, turf, composite or hardwood. As is known, laminate floors are not attached to the subfloor 22, but are considered "floating floors".

The molding 11 is provided with a first arm 12 and a second arm 14 extending in a single plane generally perpendicular to the foot 16. Preferably, the foot 16, first arm 12, and the second arm 14 form a general T-shape, with the arms 12 and 14 forming the upper structure and the foot 16 forming the lower structure.

The molding 11, as well as any of the other components used in the invention, may be formed of any suitable, sturdy material, such as wood, polymer, or even a wood/polymer composite. Due to the growing popularity of wood and laminate flooring and wood wall paneling, however, a natural or simulated wood-grain appearance may be provided on the outward facing surface 34 of the molding 11. The outward facing surface 34 may be a conventional laminate, such as a high pressure laminate (HPL), direct laminate (DL) or a post-formed laminate (as described in U.S. application Ser. No. 08/817,391, herein incorporated by reference in its entirety); a foil; a print, such as a photograph or a digitally generated image; or a liquid coating including, for example, aluminum oxide. Thus, in the event natural wood or wood veneer is not selected as the material, the appearance of wood may be simulated by coating the outer surface 34 with a laminate having a decor sheet that simulates wood. Alternatively, the decor can simulate stone, brick, inlays, or even fantasy patterns. Preferably, the outward facing surface 34 extends completely across the upper face of the molding, and optionally over under surface 36 and 38 of arms 12 and 14, respectively.

The core structure of components of the invention, including the center of the molding 11, that is in contact with the outward facing surface 34 is formed from a core material. Typical core materials include wood based products, such as high density fiberboard (HDF), medium density fiberboard (MDF), particleboard, strandboard, and solid wood; plastic-based products, such as polyvinyl chloride (PVC), thermal plastics or mixtures of plastic and other products; and metals, such as aluminum, stainless steel, or copper. The various components of the invention are preferably constructed in accordance with the methods disclosed by U.S. application Ser. No. 08/817,391, as well as U.S. application Ser. No. 10/319,820, filed Dec. 16, 2002, each of which is herein incorporated by reference in its entirety.

A securing means, such as a metal clamp 26, may be coupled to the subfloor 22 within the gap 20 formed between the two floor elements 24. The clamp may be coupled to the subfloor 22 by fasteners, such as screws or any conventional coupling method, such as nails or glue. The clamp 26 and the foot 16 are preferably cooperatively formed so that the foot 16 can slide within the clamp 26 without being removed. For example, the clamp 26 may be provided with in-turned ends 30 designed to grab the outer surface of the foot 16.

5

Typically, the foot 16 has a dove-tail shape, having the shorter parallel edge joined to the arms 12 and 14; and the clamp 26 is a wire element having a corresponding shape as to mate with the foot 16 and hold it in place. Additionally, the securing element may take the form of an inverted T-element 50 (FIG. 1A), configured to mate with a corresponding groove 52 in an end of foot 16, such that friction between the T-element 50 and the groove 52 secures the molding 11 in place, or, in the alternative, the end of the foot 16 may be provided with a narrowed section, designed to mate with a groove in the securing element. Finally, each of the T-element 50, mating section of the foot 16 and/or various grooves, may be provided with notched or barbed edges 55 to simultaneously assist in mating and resist disassembly (FIG. 1B). However, in an alternative embodiment, the securing element can be eliminated because the molding 11 can be affixed to one of the floor elements 24, 25, by, for example, an adhesive. Preferably however, the molding 11 is not secured to both floor elements 24, 25, as to permit a degree of relative movement, or floating, between the floor elements 24, 25.

The clamp 26 may additionally be formed of a sturdy, yet pliable material that will outwardly deform as the foot 16 is inserted, but will retain the foot 16 therein. Such materials include, but are not limited to, plastic, wood/polymer composites, wood, and polymers.

A tab 18 is shown as extending downwardly from the first arm 12. As shown in FIG. 1, the tab 18 extends downward, or away from an outward facing surface 34 of the molding, and runs generally parallel to the foot 16. As shown in FIG. 1, the tab 18 may also be in the shape of a dove-tail with a shorter edge adjacent to the first arm 12; however, other suitable shapes are possible. The shape of the outwardly facing surface 34 of the molding 11 is shown as being convex in some of the Figures (e.g., FIGS. 1A, 1b and 7), and substantially planar in others (e.g., FIGS. 1, 2, 4, and 6). When the outwardly facing surface 34 is substantially planar, the edges of the molding 11 may either be upright or at an angle, typically angling away from the foot 16.

The assembly may further include a leveling block 40. When flooring elements 24 and 25 are of differing heights, the leveling block 40 is positioned between either the first arm 12 or the second arm 14 and the subfloor 22. Preferably, the size of the leveling block 40 is selected to correspond essentially to the difference in heights of the two flooring elements 24 and 25. For example, if one flooring element 24 is a ceramic tile, having a thickness of 2" and the second flooring element 25 is linoleum, having a thickness of 1/4", the leveling block 40 would typically have a thickness of 1 3/4" to bridge the difference and be placed between arm 12 and the other flooring element 25. Without the leveling block 40, a significant space would exist between the second flooring element 25 and the molding 11, allowing for moisture and dirt to accumulate. While the difference in heights of the flooring elements 24, 25 is generally caused by a difference in thickness between the two flooring elements 24, 25, the present invention may also be used to "flatten out" an uneven subfloor 22. In a preferred embodiment, the leveling block is provided with a channel 42 designed to receive the tab 18.

Even though the assembly 10 may function without any type of glue or adhesive, an alternate embodiment includes the placement of adhesive 31 on the molding 11. The adhesive may be placed on molding 11 at the factory (for example, pre-glued). Alternatively, the glue may be applied while the floor elements 24, 25 are being assembled. As shown in FIG. 6, the adhesive 31 may be provided as a

6

strip-type adhesive, but any type of adhesive, such as glue, chemical or chemically-activated adhesive, water-activated adhesive, contact cements, microballoon adhesive may be used. Additionally, while the embodiment in FIG. 6 shows a single adhesive strip 31 attached to the arm 12, the adhesive 31 may be attached to the tab 18, foot 16, and/or any location where two pieces of the assembly are joined. Preferably, adhesive 31 is only applied to one of the arms 12, 14 in order to allow accommodate some slight relative movement that may occur during changes of temperature, for example. This relative movement is known in the flooring art as "float". Allowing float may also eliminate unneeded material stresses as well, thereby reducing warping or deterioration of the material surface. Typical adhesives used in the invention include a fresh adhesive, such as PERGO GLUE (available from Perstorp AB of Perstorp, Sweden), water activated dry glue, dry glue (needing no activation) or an adhesive strip with a peel off protector of paper.

FIG. 2 shows a typical embodiment of the assembly 10 in an installed condition, wherein the floor elements 24 and 25 are of differing thicknesses (H and H' respectively). Of course, the element 24 may be of any type of covering, such as carpet, turf, tile, linoleum or the like. As shown in FIG. 3, the leveling block 40 typically includes a substantially flat bottom 46, and a top 45 having a channel 42, and an inner surface 44. The top 45 of the leveling block 40 is designed to firmly abut the under surface 36 of the first arm 12, while the bottom 46 abuts floor element 25. Typically, the channel 42 is shaped as to firmly hold the tab 18. The inner surface 44 of the leveling block 40 need not abut the foot, as generally, a small amount of clearance is provided between the clamp 26 or foot 16 and the inner surface 44 of the leveling block. However, the inner surface 44 may be configured to contact either of the clamp 26 or foot 16.

The leveling block 40 may be made of a composite, pliable material that is also resilient. For example, the tab 18 may be formed to be slightly larger than the opening of the channel 42, thereby forcing the channel 42 to outwardly deform in order to accommodate the tab 18, and therefore snap-fit together.

As shown in FIG. 3, the outer surface 47 of the leveling block 40 is generally treated to match or blend with the outer surface 34 of the molding or the floor element 24, 25 in order to improve aesthetics.

FIG. 3A shows an alternate embodiment of a leveling block 40'. An outer surface 47' of this embodiment is configured generally perpendicular to an upper surface 44' and a lower surface 46' of the leveling block 40'. This alternate configuration of the outer surface 47' not only provides a different appearance, it also has been shown to be preferred when softer surfaces, such as carpet or turf, are positioned beneath the lower surface 46' of the leveling block 40'.

FIG. 4 shows yet another alternate embodiment of the leveling block 140. The leveling block 140 includes a bottom 146, and a top 145 and an inner surface 144. The top 145 of the leveling block 140 is designed to firmly abut the under surface 36 of the first arm 12, while the bottom 146 abuts floor element 25. This leveling block 140 is positioned between a first arm 112 of the molding 111 and the flooring element 125. In this embodiment of the assembly 110, the tab 118 engages the inner surface 144 of the leveling block 140.

FIG. 5 shows an embodiment of a leveling block 140 that may be used in the assembly shown in FIG. 4. Specifically,

7

the leveling block 140 in FIG. 5 has a solid, uninterrupted upper surface 145, without the need for a channel because the tab (118, as in FIG. 4) will engage the inner surface 144 of the leveling block of instead of the top surface 145.

FIG. 5A shows an additional shape of a leveling block 140' that can be incorporated into the assembly shown in FIG. 4. Leveling block 140' has a front surface 146' that will be generally perpendicular to a floor 122 (as shown in FIG. 4) when the leveling block 140' is installed. This perpendicular configuration of the front surface 147' not only provides a different appearance, it has also been found to be preferred with softer surfaces, such as carpet or turf.

FIG. 6 shows an underside view of the molding 11. In particular the first under surface 36 of the first arm 12, and the second under surface 38 of the second arm 14 are shown. In one embodiment, under surface 36 is provided with the adhesive 31 positioned to adhere to a surface of a floor element 24, 25 or leveling block 40, 40', 140, 140'.

FIGS. 7-15 show various cross-sectional views of the molding 11. These figures show comparative configurations for the arms 12, 14, the tab 18, and the shape of molding 11.

In FIG. 7, the tab 18 is selected to be an outward-facing hook having a barb facing away from the foot 16, while the upper surface of the molding has a convex curvature. This particular selection for the tab 18 may be used to engage an edge or groove of an adjacent floor element 24, 25, or in the alternative, an adjacent leveling block 40. Additionally, a shim 48 may be positioned between the foot 16 and the subfloor 22. The shim 48 is generally a pliable and flexible, yet durable material. The shim 48 may be used in place of, or in combination with, clamp 26.

FIGS. 8-15 show cross-sections of other shapes for the molding 11. The configurations of the moldings are very similar, except for the shape of the tab 18. The differing tabs have been assigned decimal numbers beginning with 18, for clarity purposes. A tab 18.1 (FIG. 8) is a bulbous shape, having its rounded end furthest from the arm 12. A tab 18.2 of FIG. 9 is provided with a hook-shape with a point facing the foot 16. In the embodiment shown in FIG. 10, a tab 18.3 is in the shape of a dove-tail, similar to the shape of the tab 18 shown in FIG. 2.

The purpose of the various-shaped tabs (18-18.8) is multi-fold. Primarily, the tab 18 serves to engage the channel 42 of the leveling block 40, which is used when covering of differing thickness is used. Alternatively, the respective tab (18-18.8) may engage an edge of a panel, carpet, turf, or other type of floor covering. As shown herein, the respective tab (18-18.8) may even be configured to engage a leveling block.

It is additionally considered within the scope of the invention to eliminate the tab. In such an embodiment, preferably, the molding 11 includes an adhesive on the under surface 36, 38 of one of the arms 12, 14.

With respect to FIG. 16, the invention may also be used when the floor elements are not co-planar. For example, one embodiment includes a stair nose attachment 210 that can be attached to the same molding 11, as described above. As used herein, a stair nose attachment is a component capable of mating with the molding 11 as to conceal, protect or otherwise cover a joint forming a single stair. Typically, the molding 11 is provided atop the first floor element 24 on the horizontal, or run 220 of the stair, such that the stair nose attachment 210 bridges the joint between the first floor element 24 and the second floor element 25, forming the vertical section of the stair, or rise 230. As a result, the invention can be used to cover and protect joints between

8

flooring elements on stairs. While in a preferred embodiment, the floor elements covering the rise 220 and run 230 are the same type of flooring material, the flooring elements need not be of the same construction.

The stair nose attachment 210 may include a tab receiving groove 212, permitting connection of the stair nose attachment 210 to the molding 11. Because the tab receiving groove 212 in the stair nose attachment 210 is preferably shaped according to the shape of the tab 18 of the molding 11, the stair nose attachment 210 may be attached to the molding 11 by, for example, snapping or sliding.

However, in other embodiments, the tab on the under surface 36 of first is eliminated. While the tabs and corresponding grooves may be eliminated, it is nevertheless considered within the scope of the invention to utilize an adhesive, as described herein. Alternatively, the stair nose attachment 210 may include a tab 218 to mate with a corresponding groove 219 on the foot 16 of the molding 11 (FIG. 17), or vice-versa.

Additionally, an adhesive, as described herein, may be applied to any component in order to secure the connection between the molding 11 and the stair nose attachment 210. Although FIG. 16 shows tab 18 (and accordingly the tab receiving groove 212) as having a dove-tail shape, it is considered within the scope of the invention to vary the particular shape of the tab 18 and tab receiving groove 212. For example, the shapes may be bulbous, or slide tongue to matching groove, or any other configuration described herein.

It is also possible to form the molding 11, leveling block 40 and stair nose attachment 210 from the same element, as shown in FIG. 18. Specifically, a generic element, indicated at 300 can be milled, sawed or otherwise constructed with a variety of "break away" sections 300A, 300B, and 300C. When one or more break away sections 300A, 300B, 300C are removed, by for example, scoring and snapping, cutting, sawing or simply bending, the individual pieces can result. Preferably, the generic element 300 is formed as a unitary structure which is then scored as to provide stress-points to allow the removal of the break-away sections. While not required by the present invention, typically, the removal of the break away sections 300A, 300B, 300C requires a significant amount of physical force or labor, as the remaining structure must maintain its structural integrity. Alternatively, removal of the break-away sections 300A, 300B, 300C may require the use of a specialized tool.

By designing the generic element 300 in accordance with the invention. An installer can manipulate the generic element 300 to produce any needed component. For example, removing sections 300B and 300C would produce a typical stair nose attachment 210, while removing sections 300A and 300C would produce a typical molding 11. Due to this construction, it is possible to manufacture the generic elements to be purchased and appropriately broken down by the installer. Similarly, when removing sections 300A and 300C to form the molding 11, section 300A can be used as a leveling block as described herein.

By allowing an end user to purchase the generic element 300 instead of separate components, the retailers and/or distributors may accordingly reduce their inventory requirements. For example, typically over one-hundred different design patterns for the outwardly facing surface 34 of the molding 11 (as well as for the leveling block 40 and stair nose attachment 210) are produced. By allowing for the inventory to include only the generic elements of the invention, the total number of components retained can be

9

reduced from three per design to one per design. Similarly, the installer only need purchase the generic elements 300, rather than three individual components.

It should be apparent that embodiments other than those specifically described above may come within the spirit and scope of the present invention. Hence, the present invention is not limited by the above description.

What is claimed is:

1. A joint cover assembly for covering a gap between two floor elements, the floor elements covering a sub-surface, the assembly comprising:

- a molding, comprising:
 - a foot positioned along a longitudinal axis;
 - a first arm extending generally perpendicularly from the foot, and having a generally planar under surface;
 - a second arm extending generally perpendicularly from the foot and having a generally planar under surface;
 - and
 - a tab, positioned on the under surface of the first arm or the second arm, the tab being displaced from the foot and depending generally perpendicularly from the respective under surface, wherein the tab is dovetail-shaped in shape with a large base distal the under surface of the respective first arm or second arm;

wherein at least the tab and the foot cooperate to retain the molding in the gap when the assembly is in an installed condition.

2. A joint cover assembly for covering a gap between two floor elements, the floor elements covering a sub-surface, the assembly comprising:

- a molding, comprising:
 - a foot positioned along a longitudinal axis;
 - a first arm extending generally perpendicularly from the foot, and having a generally planar under surface;
 - a second arm extending generally perpendicularly from the foot and having a generally planar under surface;
 - and
 - a tab positioned on the under surface of the first arm or the second arm, the tab being displaced from the foot and depending generally perpendicularly from the respective under surface;

wherein and at least the tab and the foot cooperate to retain the molding in the gap and at least one of the two floor elements is a tongue-and-groove panel, and the tab is formed to engage a groove of an adjacent panel when the assembly is in an installed condition.

3. A joint cover assembly for covering a gap between two floor elements, the floor elements covering a sub-surface, comprising:

- a foot configured to be positioned within the gap;
- a first member generally perpendicular to the foot, and having a generally planar under surface;
- a second member extending generally perpendicular to the foot, and a generally planar under surface;
- a tab running generally parallel to the foot and positioned on the first member, the tab extending from the under surface of the first member;
- a securing element, connecting the molding to the sub-surface and positioned within the gap;
- a shim positioned between the foot and the sub-floor, wherein the foot engages the securing element in order to retain the molding over the gap when the assembly is in an installed condition.

4. A method of covering a joint between two generally coplanar floor elements, the method comprising:

10

providing a molding, the molding comprising;

- a foot positioned along a longitudinal axis;
- a first arm extending generally perpendicularly from the foot, and having generally planar under surface;
- a second arm extending generally perpendicularly from the foot, and having second planar under surface;
- and
- a tab on the first under surface displaced from the foot, the tab extending generally perpendicularly from the first under surface;

placing the foot in the gap;

joining the first under surface to one floor element; providing adhesive to the molding; and

configuring at least one of the tab and the foot to cooperate to retain the molding in the gap by: affixing a securing element to a sub-surface below the floor elements; positioning the securing element within the gap; and engaging the foot within the securing element.

5. A method of covering a joint between two generally coplanar floor elements, the method comprising:

providing a molding, the molding comprising:

- a foot positioned along a longitudinal axis;
- a first arm extending generally perpendicularly from the foot and having generally planar under surface;
- a second arm extending generally perpendicularly from the foot, and having second planar under surface;
- and
- a tab on the first under surface displaced from the foot, the tab extending generally perpendicularly from the first under surface;

placing the foot in the gap;

joining the first under surface to one floor element; and configuring at least one of the tab and the foot to cooperate to retain the molding in the gap,

wherein the floor elements have tongue-and-groove edges, and the tab is formed to engage a groove of an adjacent panel when the molding is in the installed condition.

6. A joint cover assembly for covering a gap between two floor elements, the floor elements for covering a sub-surface, comprising:

- a foot configured to be positioned within the gap;
- a first member generally perpendicular to the foot;
- a second member extending generally perpendicular to the foot, at least one of the first and second members having a generally planar undersurface;
- a securing element, to connect the molding to the sub-surface and to be positioned within the gap;
- an attachment to be positioned between one of the first and second members and a floor element,

wherein the attachment and the under surface of one of the first member and second member engage through a tongue-and-groove joint, wherein the groove is in the shape of a large base distal the under surface of a respective arm, and the foot engages the securing element in order to retain the molding over the gap when the assembly is in an installed condition.

7. The assembly of claim 6, wherein the attachment comprises the dovetail-shaped groove.

8. The assembly of claim 6, wherein the attachment is a stair nose attachment.

9. The assembly of claim 8, wherein the attachment is a stair nose attachment.

11

10. The assembly of claim 6, wherein the tongue is shaped to fit within said groove.

11. The assembly of claim 10, wherein the tongue is on the undersurface of the one of the first and second arms.

12. An assembly comprising:

a first molding comprising:

a foot;

a first member generally perpendicular to the foot; and

a second member extending generally perpendicular to the foot, at least one of the a generally planar under surface;

12

said foot defining a groove in a sidewall thereof;

a securing element, connecting the first molding element to the sub-surface and positioned within the gap; and

an attachment, comprising a protrusion sized and shaped to fit in said groove in said foot,

wherein said foot engages the securing element in order to retain the molding over the gap when the assembly is in an installed condition.

* * * * *

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.
(Also Form PTO-1050)

UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT NO. : 6,860,074
 DATED : March 1, 2005
 INVENTOR(S) : Oliver STANCHFIELD

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Claim 6, line 17, 'arm' should read --member--.

Claim 9, line 1, '8' should read --12--, and --selected from the group consisting of-- should be inserted after 'is'.

Claim 11, line 2, 'arms' should read --members--.

Claim 12, line 6, --first member and the second member having-- should be inserted before 'a generally', and line 10, 'the' (both occurrences) should read --a--.

MAILING ADDRESS OF SENDER:

PATENT NO. 6,860,074

STEVENS, DAVIS, MILLER & MOSHER
 1615 L St., N.W., Suite 850
 Washington, D.C. 20036

No. of additional copies



This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

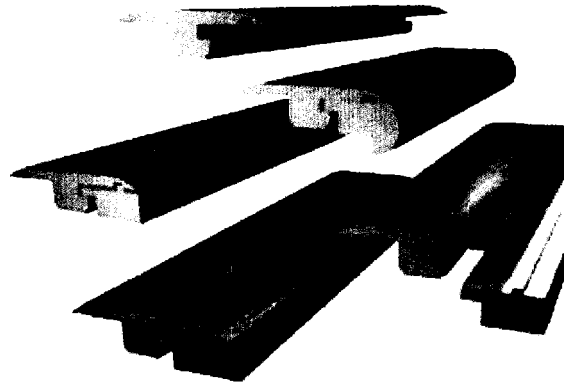
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



Faus Technology

- InterPlank™
- MicroBevel™
- Joint Guard®
- Embossed-In-Register®
- FasTrim™
- LongStrip™

technology:



1: t-molding



2: carpet reducer
3: end molding



4: hard surface reducer



5: stair nose

Quick Assembly Tip

Faus is proud to announce we've done it again.

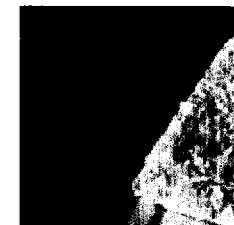
Introducing the **FasTrim™ Multi-Transition System**. The pieces can be combined to form t-molding, hard surface reducer, carpet reducer, end molding, or stair nose. Each transition piece snaps firmly into the included floor track for a snug, solid fit every time.

Trim just doesn't get any easier than this.

1: T-Molding (LxWxH): 47-1/16" x 1-11/16" x 13/32"
T-Moldings are used in doorways and archways four feet wide (1.22m) or less and in rooms that are longer/wider than 66 feet (20m) to join together two different areas of laminate floors with underlayment.



2 & 3: Carpet Reducer/End Molding
(LxWxH): 47-1/16" x 1-3/4" x 1/2"
Carpet Reducer strips are used as a transition between laminate floors with underlayment and carpet floor. The Carpet Reducer strip can also be used as End Molding. End Molding strips are used to finish the floor at door threshold, sliding glass doors, or other vertical fixed objects.



4: Hard Surface Reducer
(LxWxH): 47-1/16" x 1-13/16" x 1/2"
Hard Surface Reducer is used to transition to a lower hard surface, such as wood or tile. Hard Surface Reducer is used with laminate flooring with attached underlayment.

