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(54) **SPACER FOR INSTALLATION OF FLOORING SYSTEM**

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(57) **ABSTRACT**

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A spacing apparatus for creating a properly dimensioned gap during the installation of a flooring system, the spacing apparatus including a first element having a non-adjustable width (W) corresponding to an intended gap width, the first element extending in a first direction and joined to a projection element, the first direction and the projection element being generally perpendicular to each other, the projection element having a first portion having a non-adjustable width (T-1) corresponding to an intended gap width measured from a surface of the projection element in a direction parallel to the direction of the first element, the projection having a section portion having a non-adjustable width corresponding to a second intended expansion gap measured from a surface of the projection element in a direction parallel to the direction of the first element, wherein each of said intended gaps has a different width and wherein a gap is provided between a flooring plank and a vertical surface.

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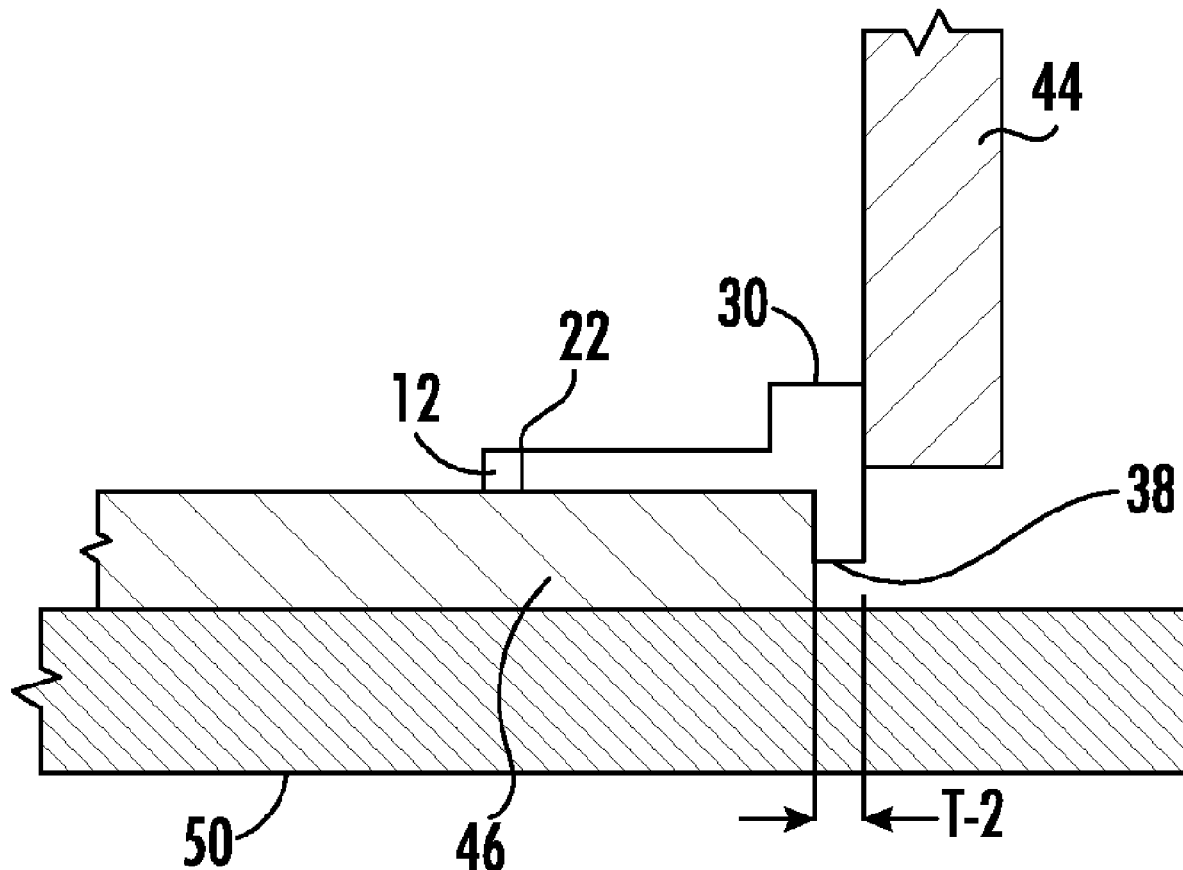
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(2) Date: **Aug. 6, 2020**

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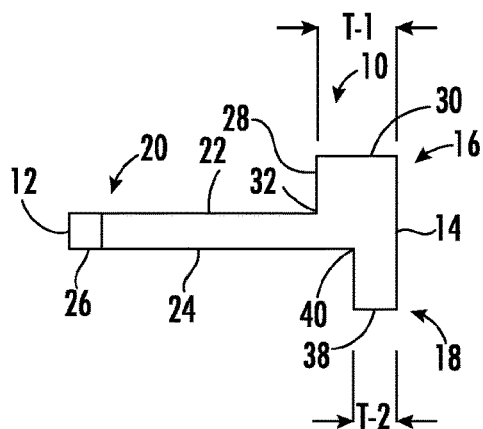


FIG. 1

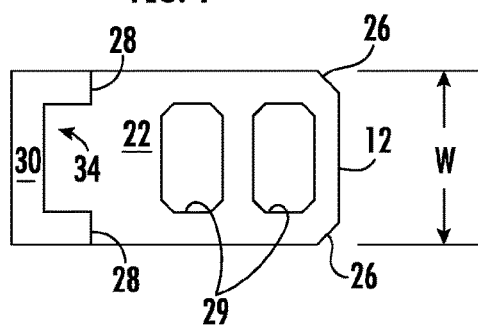


FIG. 2

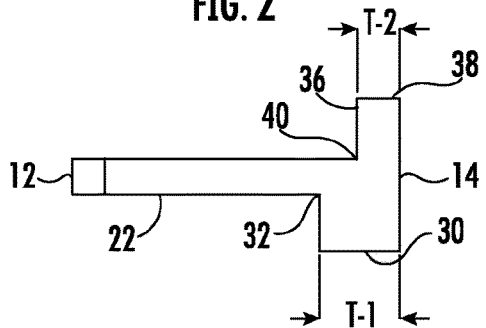


FIG. 3

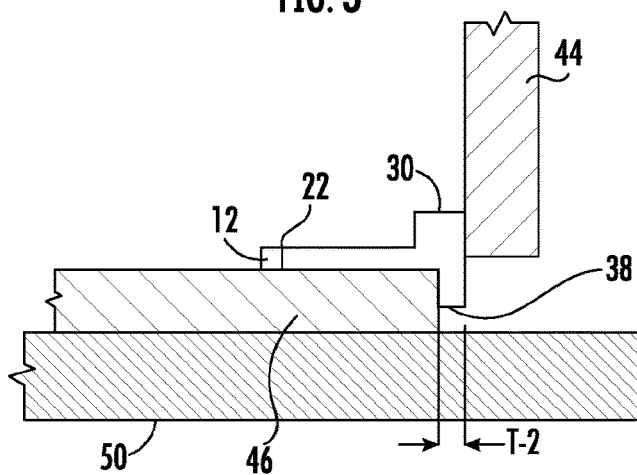


FIG. 4

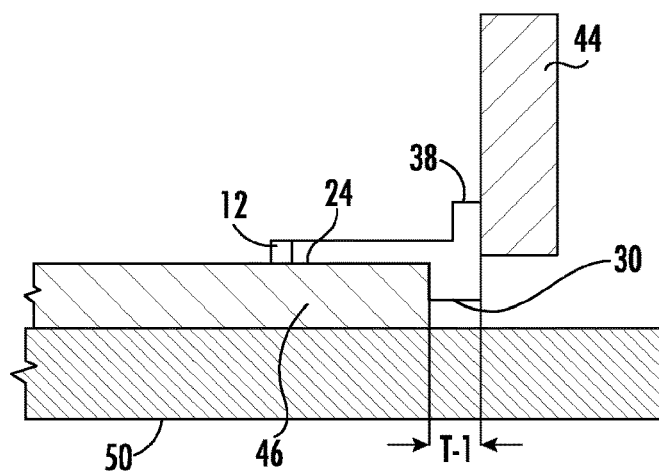


FIG. 5

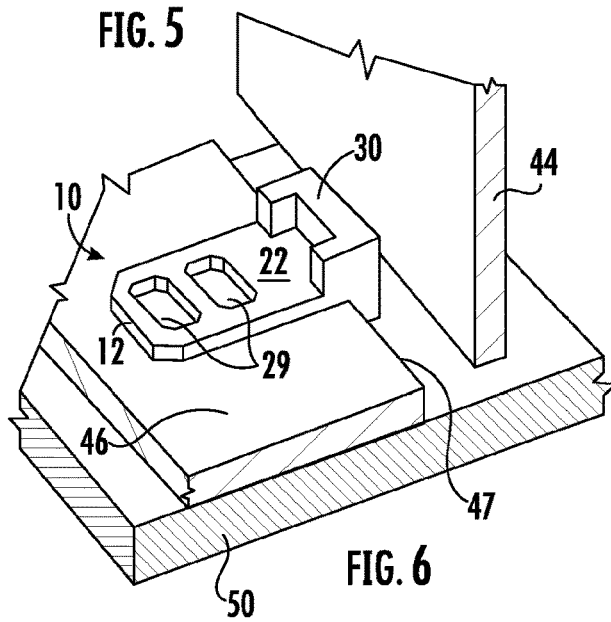


FIG. 6

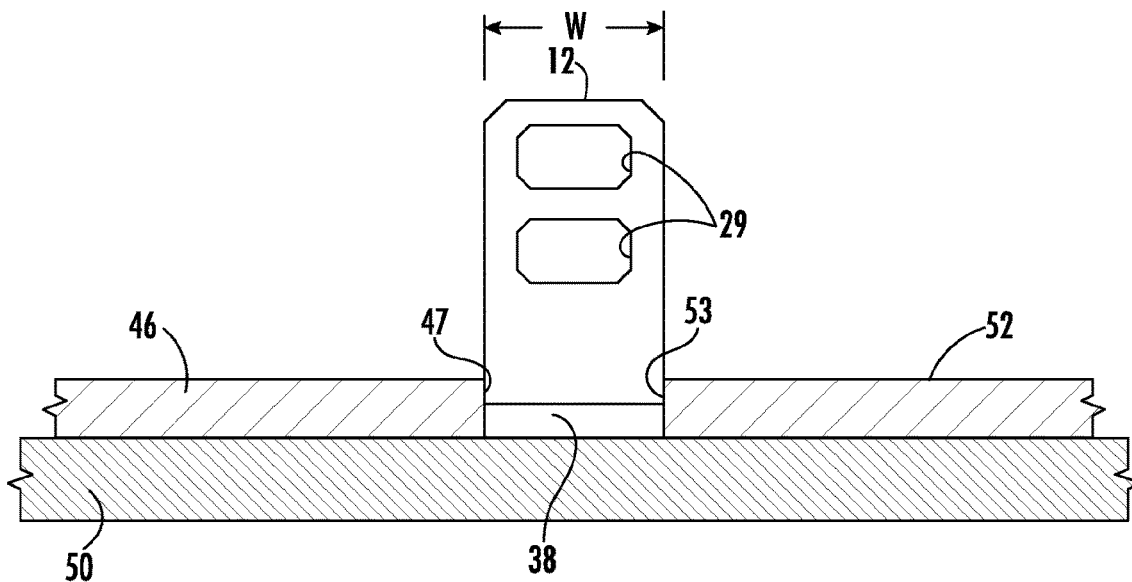


FIG. 7

SPACER FOR INSTALLATION OF FLOORING SYSTEM

BACKGROUND

[0001] A flooring system that comprises a series of interlocking panels is installed above and in contact with a subfloor. The flooring may be formed of panels of natural wood, engineered flooring, laminate flooring or vinyl, vinyl tile, wood plastic composite, stone polymer composite, etc.

[0002] It is desirable to provide a horizontal gap or space or "offset" between the edge of the panels and an adjacent vertical wall. The space or "offset" from the wall accommodates expansion and shrinkage of the flooring normally attributable to factors such as changes in ambient temperature and humidity. In addition, when installing flooring, the vertical walls (typically drywall) do not always extend down to the level of the subfloor. There is frequently a vertical gap of one inch (2.54 cm) or more from the subfloor level to the bottom of the vertical drywall. Most of the flooring to be installed does not have a height (thickness) above the subfloor sufficient to cover this gap. The gap or space is normally covered by moulding for aesthetic purposes.

[0003] In addition, when installing a flooring above a subfloor where there is an opening, such as for a doorway into a closet or an adjacent room, or even for a doorway between the interior and exterior of a house, it is desirable to provide a horizontal gap or space between the edge of the flooring panels to accommodate expansion where the gap or space is subsequently covered by a threshold rather than covered by a moulding for aesthetic purposes.

[0004] When installing the flooring, each successive panel (wooden or laminate planks or strips, etc.,) is forced against the previously positioned panel to make the flooring joints secure. This results in pushing the flooring under the vertical gap between the bottom of the drywall and the subfloor. This creates a problem during installation of the floor and creates a problem in not accommodating normal expansion of the flooring after the installation has been completed.

[0005] In the past, installers would utilize wedges or shims placed vertically between the wall and the floor. However, any movement of the flooring toward the wall, such as when successive flooring members are pushed up against already-installed flooring members frequently forced the bottom of the wedges into the vertical space or gap at which point the wedges could rotate or pivot out of position and no longer be useful. Furthermore, since there was no standard in the construction industry for the size of the vertical gap and/or for any desired horizontal gap between the vertical wall and the flooring, while installers frequently had to use multiple wedges as spacers to accommodate a horizontal gap, there was no spacer to accommodate the larger vertical gap.

[0006] U.S. Pat. No. 8,881,418 (Funk) illustrates a spacing apparatus to provide a fixed horizontal gap between the edge of the flooring panels and an adjacent vertical wall.

SUMMARY

[0007] The present description relates to spacers, or spacing apparatus, that provide alternate non-adjustable dimensions so that the installer may select a relative wider horizontal space or a relatively narrower horizontal space without the need to maintain an excessive inventory, i.e., without the need to maintain an inventory of narrow spacers and a second inventory of wide spacers. Furthermore, the

present description relates to a spacer that may include yet another alternate non-adjustable dimension so that a suitable space may be provided between the flooring being installed and an adjacent flooring for a doorway or the like to accommodate a threshold device.

[0008] In one embodiment, the present description relates to a spacing apparatus for creating a properly dimensioned gap during the installation of a flooring system, including a first element extending in a first direction and joined to a projection element, the first direction and the projection element being generally perpendicular to each other, the projection element having a first portion having a first width corresponding to an intended expansion gap measured from a surface of the projection element in a direction parallel to the direction of the first element and a second portion having a width corresponding to a second intended expansion gap measured from the surface of the projection element in a direction parallel to the direction of the first element.

[0009] In another embodiment a spacing apparatus for creating a properly dimensioned gap during the installation of a flooring system, the gap being defined between an edge of the flooring and a vertical surface, wherein the spacing apparatus has first, second and third portions, the first portion having a first non-adjustable width, the second portion having a second non-adjustable width, and the third portion having a third non-adjustable width, where one of said portions is positioned between the flooring system and a vertical surface to form gap of one said non-adjustable widths therebetween.

[0010] In another embodiment, the intended expansion gaps are of different widths and the spacing apparatus includes internal shoulders to limit the movement of the panels of the flooring system during installation to assist in maintaining the desired expansion gap. Preferably the internal shoulders are formed at the junction of the first element and the projection element.

[0011] In yet another embodiment, the present description relates to a spacing apparatus for creating a properly dimensioned gap during the installation of a flooring system, including a first element extending in a first direction and joined to a projection element, the first direction and the projection element being generally perpendicular to each other, the projection element having a first portion having a first width corresponding to an intended expansion gap measured from a surface of the projection element in a direction parallel to the direction of the first element and a second portion having a width corresponding to a second intended expansion gap measured from the surface of the projection element in a direction parallel to the direction of the first element, and the first element has a width different than the first and second widths, the spacing apparatus for providing an third expansion gap such as, but not limited to, a threshold gap.

[0012] In any of the preceding embodiments, identical spacers or spacing apparatus may be used to install a single flooring system where the spacers or spacing apparatus may be oriented relative to each other to provide expansion gaps of at least two, and preferably three dimensions.

[0013] In any of the preceding embodiments, the expansion gaps may be approximately 0.636 cm, 1.27 cm and 2.54 cm, and in any of the embodiments the spacer or spacing apparatus may be moulded of a rigid suitable thermoplastic and may be moulded as a single, unitary body.

[0014] In any of the preceding embodiments, the spacing apparatus may be removable and reusable.

[0015] Yet another embodiment of the present invention is a method for installation of a flooring system according to any one or more of the preceding embodiments further including positioning the spacer apparatus on a subfloor adjacent a vertical surface to provide the desired expansion gap and positioning the flooring system to abut the spacer apparatus.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] The following drawings illustrate one form of the spacer or spacing apparatus and its use. The drawings are to be interpreted in a broad, non-limiting sense as exemplary. In the drawings, wherein like reference numerals identify corresponding components:

[0017] FIG. 1 is a side elevation view of a spacer or spacing apparatus;

[0018] FIG. 2 is a top plan view of a spacer or spacing apparatus with the spacer or spacing apparatus additionally rotated from the orientation of the spacer in FIG. 1;

[0019] FIG. 3 is a side elevation view of a spacer or spacing apparatus where the spacer or spacing apparatus has been inverted relative to the orientation of the spacer or spacing apparatus in FIG. 1;

[0020] FIG. 4 is a sectional view of a spacer or spacing apparatus positioned between a generally horizontal surface and a generally vertical surface to illustrate the provision of an expansion gap of a first distance;

[0021] FIG. 5 is a sectional view of a spacer or spacing apparatus positioned between a generally horizontal surface and a generally vertical surface to illustrate the provision of an expansion gap of a second distance;

[0022] FIG. 6 is a perspective illustration of a spacer or spacing apparatus positioned between a generally horizontal surface and a generally vertical surface; and

[0023] FIG. 7 is an illustration of a spacer or spacing apparatus positioned between two generally horizontal surfaces to provide an expansion gap of a third distance which may be to accommodate a threshold.

DETAILED DESCRIPTION

[0024] Referring to the drawings, it should be understood that terms such as top, bottom, left, right, first end, second, end, above, below, thin and thick are used as relative terms for explanatory purposes only and are not used in a limiting sense. Similarly, references to materials and shapes are also intended solely as illustrative and thus in a non-limiting sense.

[0025] The terms “spacer” and “spacing apparatus” are intended to have the same meaning. A spacing apparatus 10 may be formed as a unitary product or in multiple parts subsequently attached together. The spacing apparatus may be formed of one or more materials including but not limited to metal, plastic, rubber, and/or wood, and may be moulded of a rigid suitable thermoplastic material. The spacing apparatus has a first end or surface 12 and a second, opposed end or surface 14. The spacing apparatus 10 includes projection element having first and second portions 16, 18 at the second end as will be described below. The spacing apparatus 10 may be generally T-shaped and is illustrated in FIG. 7 as an inverted “T”. The spacing apparatus 10 is illustrated in FIGS. 1-6 as having been rotated 90° from a “T” such that

the long leg or stem of the T-shape is horizontally oriented and the top of the T-shape is vertically oriented.

[0026] The spacing apparatus 10 includes an elongated first element 20, preferably formed as a relatively thin, rectangular plate extending in a first direction and terminating at said first end 12, and having opposed first and second generally rectangular surfaces 22, 24 lying in generally parallel planes. The first element includes opposed edges connecting the surfaces 22, 24, and has a non-adjustable width “W” illustrated in FIGS. 2 and 7 measured in a direction across the surface 22 and thus perpendicular to the edges and perpendicular to the direction between the first end 12 and second end or surface 14. The first element 20 may have large openings 29 therethrough to reduce the weight of the spacing apparatus and also reduce the cost since less material is utilized when compared to a solid first element 20. The openings also facilitate grasping/moving the spacing apparatus. In addition, the spacing apparatus may be suspended on a suitable rod for storage. In one non-limiting embodiment, the width “W” is approximately 2.54 cm.

[0027] The spacing apparatus surface 14 is generally perpendicular to the first element 20 and extends perpendicular to first end 12. The spacing apparatus surface preferably includes first and second portions 16, 18, one extending above surface 22 and the other extending below surface 24 in the orientation of FIG. 1.

[0028] The first portion 16 of the projection element will now be explained. In the orientation of FIG. 1, the first portion 16 extends away from and terminates above surface 22 and includes an interior wall 28 extending upwardly from surface 22 generally parallel to surface 14. First portion 16 is thus generally perpendicular to first element 20. First portion 16 further includes an end 30 oriented generally parallel to surfaces 22, 24, and connecting one end of surface 14 with the end of interior wall 28 remote from surface 22. The interior wall 28 and surface 22 are generally perpendicular to each other and their intersection forms an internal shoulder 32. In a non-limiting example, the interior wall 28 may be generally U-shaped 34 (as seen in the orientation of FIGS. 2 and 6) to reduce the weight of the spacing apparatus and also reduce the cost since less material is utilized. The base of the U-shape may extend across the width of the first element 20 and the legs of the U-shape may extend in the longitudinal direction of the spacing apparatus from the surface 14 toward the first end 12. The internal shoulder 32 is thus formed by the intersection of the vertical interior wall portions of the U-shape and the surface 22.

[0029] The second portion 18 of the projection element will now be described. In the orientation of FIG. 1, the second portion 18 extends away from and terminates below surface 24 and thus in a direction opposite to the first portion relative to the first direction of the first element 20. The second portion 18 includes an interior wall 36 (see FIG. 3) extending away from surface 24 and generally parallel to surface 14. The second portion includes an end 38 connecting an end of surface 14 with the end of interior wall 36 remote from surface 24. The interior wall 36 and surface 24 are perpendicular to each other and their intersection forms an internal shoulder 40.

[0030] Surface 14 is a preferably flat bearing surface extending between first portion end 30 and second portion end 38 of the projection element.

[0031] The non-adjustable width of the projection element first portion 16 is the distance between surface 14 and the interior wall 28 and is identified as “T-1”. The non-adjustable width of the projection element second portion 18 is the distance between surface 14 and the interior wall 36 and is identified as “T-2”. Width T-1 is illustrated as being greater than width T-2. In a non-limiting embodiment, width T-1 is preferably approximately 1.27 cm and width T-2 is preferably approximately 0.635 cm. As will be explained below, these widths correspond to various generally preferred expansion gaps.

[0032] The height of the ends 30, 38, measured from the surfaces 22, 24, respectively, preferably will be at least the anticipated thickness of the flooring.

[0033] Non-limiting examples of the use of the spacing apparatus to properly position flooring away from the wall during installation of the flooring to create the desired expansion gap may be appreciated from consideration of the above and from the following reference to FIG. 4, FIG. 5 and FIG. 6. In addition, a non-limiting example of the use of the spacing apparatus to properly position flooring away from a doorway during installation of the flooring to create an expansion gap to allow for placement of a threshold may be appreciated from consideration of the above and in addition FIG. 7.

[0034] Referring first to FIGS. 1, 4 and 6, the spacing apparatus 10 is positioned such that the second end or surface 14 abuts a vertical wall 44 which, for illustrative purposes, may be considered to be an interior wall of a house. The orientation of the spacing apparatus 10 is such that the projection element first portion 16 extends upwardly and the projection element second portion 18 extends downwardly, consistent with the orientation of the spacing apparatus 10 in FIG. 1. A spacing apparatus 10 is positioned against the vertical wall and an elongated laminated flooring plank 46 is positioned on a subfloor 50 and below the first element 20 of the spacing apparatus 10. The edge 47 of the flooring plank closest to the vertical wall is positioned to abut the internal shoulder 32. Although not illustrated, multiple spacing apparatus should be positioned along the length of the wall (and thus along the length of the flooring planks) and one or more additional spacing apparatus should be positioned at the end of the plank adjacent a wall (not shown) perpendicular to the wall 44, for example as would be typical in the corner of a room in a house.

[0035] In this non-limiting illustration, an expansion gap is created and maintained between the vertical wall 44 and edge 47 of the flooring planks 46, the gap having a width “T-2” corresponding to the thickness “T-2” of the projection element second portion 18. This thickness, which is approximately 0.635 cm in one non-limiting embodiment may be preferred for laminated vinyl flooring, laminated vinyl tile, stone polymer composite and wood/plastic composite flooring, and has been found suitable to accommodate anticipated expansion for these types of flooring. The positioning of the spacing apparatus with the surface 24 on top of the flooring plank 46 aids in maintaining the flooring plank in position during installation and also prevents the spacing apparatus 10 from pivoting out of position. The spacing apparatus 10 is easily removable after a suitable number of flooring planks 46 have been placed in position such that the spacing apparatus 10 may be reused. In addition, as previously described, with the first element 20 supported on the flooring plank, the projection element first portion 16 above the

surface 22, generally allows the spacing apparatus 10 to be supported against the vertical wall notwithstanding the expansion gap between the vertical wall and the top of the flooring plank 46.

[0036] Considering next FIG. 3 and FIG. 5, if it is desired to have a larger expansion gap between the flooring and the wall, then the spacing apparatus 10 should be oriented or inverted relative to the position in FIG. 1, FIG. 4 and FIG. 6 such that the projection element first portion 16 extends downwardly between the vertical wall 44 and the edge 47 of the flooring plank 46, again with the first element, and more particularly surface 22 positioned on top of the flooring plank 46. The height of the projection element second portion 18 above the surface with the first element 20 supported on the flooring plank, the projection element first portion 16 above the surface 22, generally allows the spacing apparatus 10 to be supported against the vertical wall 44 notwithstanding the expansion gap between the vertical wall and the top of the flooring plank 46.

[0037] In the orientation illustrated in FIG. 1, FIG. 4 and FIG. 6, the expansion gap between the vertical wall and the ends of the flooring planks 46 would correspond to the width “T-1” which is approximately 0.127 cm in a non-limiting embodiment. An expansion gap is formed between the vertical wall 44 and edges 47 of the planks 46, the gap having width “T-1” corresponding to the thickness “T-1” of the projection 16 and a gap of this width may be preferred for engineered wood, laminated wood and solid wood flooring which tend to expand a greater distance than the types of flooring described with reference to FIGS. 4 and 6. Again, the spacing apparatus 10 is removable after a suitable number of flooring planks 46 have been installed.

[0038] Depending on variations in the positioning of the vertical walls within a room or within a house, the spacing apparatus 10 provides the advantage that the expansion gaps need not be the same, rather, the installer of the flooring system may use different expansion gaps.

[0039] It should also be appreciated that creating a horizontal expansion gap during installation of the flooring system is not the sole benefit of the spacer 10. As one example, it should be appreciated that there is a vertical gap between the bottom of the vertical wall 44 and the top of the subflooring 50. This gap is normally concealed by moulding at the conclusion of the installation of the flooring system. The use of the spacer 10 prevents the flooring 46 from being positioned within the vertical gap. Conduits, including but not limited to electrical, plumbing and/or ventilation conduits may be placed within the vertical gap without interference from the flooring 46 and the conduits will subsequently be concealed by moulding. Thus the physical height of the spacer portion ends 30 and 38, measured from surfaces 22 and 24, respectively, are not limited by the thickness of the flooring system 46.

[0040] As explained previously, a flooring system may be installed adjacent a doorway and an expansion gap may be provided to accommodate expansion and to receive a threshold. A spacing apparatus 10 is rotated 90° to the orientation in FIG. 7 relative to orientation of the spacing apparatus in each of FIG. 1, FIG. 2, and FIG. 3. In the orientation of FIG. 7, for illustrative purposes, the subflooring 50 is illustrated and a previously installed floor 52, having an edge or vertical surface 53 is illustrated such as adjacent a doorway where there is no corresponding vertical wall 44. In this orientation, the surface or second end 14 of the spacing

apparatus 10 is preferably placed on the subfloor, as contrasted to the second end 14 being placed against a vertical wall, and oriented such that an expansion gap having a non-adjustable width “W” is created between the edge 53 of the existing floor 52 and the edge 47 of the flooring planks 46 that are being installed. Preferably this width “W” is 2.54 cm which has been found to be sufficient to accommodate a conventional threshold. The flooring planks and existing floor each abuts the opposite narrow edges of the first element 20. Conventional thresholds are frequently T-shaped with the horizontal top of the T used to cover a gap between flooring in adjoining rooms and with the vertical leg of the T to be inserted in the gap between flooring in adjacent rooms and/or between flooring and doorway to the exterior.

[0041] Alternatively, the spacing apparatus 10 may be oriented as illustrated in FIG. 7 but with one edge of spacer first element 20 abutting a vertical wall, rather than the vertical edge 53 of a previously installed floor 52 and with the flooring plank 46 abutting the opposite narrow edge of the spacer first element 20. Thus the expansion gaps using the spacing apparatus 10 is not limited or restricted to providing space for a threshold.

[0042] Although only one spacing apparatus 10 is illustrated, it should be appreciated that during the installation of a flooring system, spacing apparatus 10 may be positioned at regular intervals along the length of the floor. If, for example the floor is formed of a series of planks 46 of 15.24 cm width and 182.88 cm length, then spacing apparatus may be placed every 30.48 cm along the length of a flooring plank and one spacing apparatus may be placed at the end of each flooring plank where the flooring plank would otherwise contact the wall.

[0043] It should further be appreciated that the spacing apparatus 10 provides a reusable apparatus that provides for three different size non-adjustable expansion gaps relative to the flooring system and, in a preferred embodiment, the three different size non-adjustable expansion gaps are approximately 0.625 cm, 1.27 cm and 2.54 cm, respectively.

[0044] The foregoing is a complete but non-limiting description of the removable, reusable spacing apparatus and the method of its use to provide three different spacing gaps during installation of flooring.

1-18. (canceled)

19. A spacing apparatus for creating a properly dimensioned gap during the installation of a flooring system, the spacing apparatus including a first element extending in a first direction and joined to a projection element, the first direction and the projection element being generally perpendicular to each other, the projection element having a first portion having a non-adjustable width (T-1) corresponding to a first intended expansion gap measured from a surface of the projection element in a direction parallel to the direction of the first element, the spacing apparatus further comprising

the projection having a section portion having a non-adjustable width (T-2) corresponding to a second intended expansion gap measured from said surface of the projection element in a direction parallel to the direction of the first element.

20. The spacing apparatus according to claim 19, wherein the length of said first element in said first direction is

greater than the length of said first portion of said projection element and greater than the length of said second portion of said projection element.

21. The spacing apparatus according to claim 19, wherein said first intended expansion gap width (T-1) is greater than said second intended expansion gap (T-2).

22. The spacing apparatus according to claim 19, wherein said width (T-2) is less than said width (T-1).

23. The spacing apparatus according to claim 19, wherein the apparatus includes a two shoulders each formed at the junction of said first element and said projection element.

24. The spacing apparatus according to claim 23, wherein one of said shoulders is for aligning the flooring system against the first portion of said first element.

25. The spacing apparatus according to claim 23, wherein one of said shoulders is for aligning the flooring system against the second portion of said first element.

26. The spacing apparatus according to claim 19, wherein said first element has two surfaces, one of said surfaces for maintaining the flooring system in position during creation of a first intended expansion gap.

27. The spacing apparatus according to claim 26, wherein the second of said two surfaces is for maintaining the flooring system in position during creation of a second intended expansion gap.

28. The spacing apparatus according to claim 19, wherein said first element has a non-adjustable width (W) measured in a direction perpendicular to both said first direction and said projection element, the width (W) being different from each of the widths (T-1, T-2) of said first and second portions of said projection element.

29. The spacing apparatus according to claim 19, wherein said first element has a width (W) corresponding to a third intended expansion gap.

30. A spacing apparatus for created a properly dimensioned gap during the installation of a flooring system, the gap being defined between an edge of the flooring system and a vertical surface, comprising:

the spacing apparatus having first, second and third portions, said first portion having a non-adjustable width (W-2), said second portion having a non-adjustable width (T-1) and said third portion having a non-adjustable width (W), each of said portions being selectively positioned between an edge of the flooring system and said vertical surface to form gap of one said non-adjustable widths therebetween.

31. The spacing apparatus according to claim 30, wherein the width (W) is approximately 2.54 cm.

32. The spacing apparatus according to claim 19, wherein the width (T-2) is approximately 0.635 cm.

33. The spacing apparatus according to claim 19, wherein the width (T-1) is approximately 1.27 cm.

34. The spacing apparatus according to claim 19, wherein the apparatus comprises a single moulded body.

35. The spacing apparatus according to claim 19, wherein the apparatus comprises a single moulded body comprised of a rigid suitable thermoplastic.

36. The spacing apparatus according to claim 19, wherein the apparatus is removable and reusable.

37. A method of installing a flooring system with an expansion gap having a non-adjustable width selected from

T-1, T-2 and W comprising placing a spacing apparatus according to claim **19** on a subfloor adjacent to a vertical surface and placing at least one flooring plank in an abutting relationship to the spacing apparatus.

* * * * *