



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) **EP 1 342 439 A2**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
10.09.2003 Bulletin 2003/37

(51) Int Cl.7: **A47G 27/04**

(21) Application number: **03290500.2**

(22) Date of filing: **03.03.2003**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IT LI LU MC NL PT RO SE SI SK TR**
Designated Extension States:
AL LT LV MK

(71) Applicant: **ILLINOIS TOOL WORKS INC.**
Glenview, Cook County, Illinois 60025 (US)

(72) Inventor: **Gabriel, William L.**
Barrington, Illinois 60010 (US)

(30) Priority: **05.03.2002 US 91101**

(74) Representative: **Bloch, Gérard et al**
2, square de l'Avenue du Bois
75116 Paris (FR)

(54) **Carpet strip assembly having staples incorporated therein**

(57) The carpet strip assembly has a plurality of two-legged or two-pronged staples (112) fixedly secured therein wherein the staples are arranged within an array comprising two or three longitudinally offset rows of staple fasteners. The number of fastener points per lineal

foot of the carpet strip is increased. The two prongs or legs (114, 116) of each staple (112) are integrally connected together by means of a transversely extending crown portion (118). Pull-out resistance of the staples, with respect to the carpet strip, is significantly enhanced.

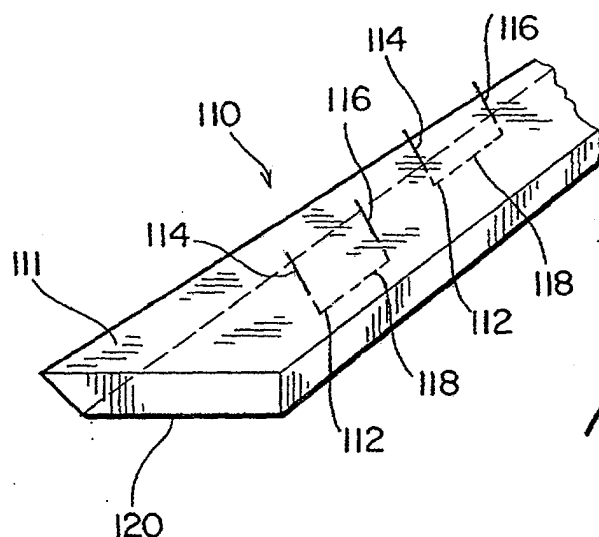


FIG. 4

EP 1 342 439 A2

Description

FIELD OF THE INVENTION

[0001] The present invention relates generally to carpet strips, and more particularly to a new and improved carpet strip which has two-pronged staples incorporated therein to which the overlaid carpet is to be fixedly attached.

BACKGROUND OF THE INVENTION

[0002] Carpet strips are conventionally fabricated from a suitable wood, plastic, or metal material, and are conventionally provided with a plurality of tacks or nails which project upwardly from upper surface portions of the carpet strip so as to be readily accessible in order to facilitate the attachment thereto of edge regions of a carpet in an overlying manner. Prior art or conventional carpet strips are exemplified by means of United States Patent 5,500,980, 5,329,653, 4,970,754, 3,693,212 and 3,673,633. In addition, International Patent Application Number WO 97/10921 discloses a somewhat reversed mode of attaching carpeting to underlying carpet strips in that the attachment fasteners are disposed within the carpeting so as to project downwardly toward the tackless carpet strips.

[0003] As exemplified by means of the aforementioned patent publications, while it is conventional and well-known to incorporate upstanding or upwardly projecting tacks or nails within carpet strips, and while, admittedly, such carpet strips have been operationally satisfactory, the operative interaction of such carpet strips with respect to the overlaid carpeting can nevertheless be improved. For example, as illustrated within FIGURES 1 and 2, a conventional or PRIOR ART carpet strip assembly is illustrated and is generally indicated by the reference character 10. The carpet strip assembly 10 comprises a carpet strip 11 which has predetermined width and length dimensions, and is conventionally fabricated, for example, as a five-ply wooden laminate, although, of course, the strip 11 may be fabricated from other materials. As can be readily appreciated from FIGURE 1, it is conventional or normal practice to fixedly mount the individual carpet tacks or nails 12 within the carpet strip 11 at positions which are defined within an array comprising two longitudinally offset rows 13, 15 of the carpet tacks or nails 12 wherein the longitudinal frequency, spacing, or pitch defined between adjacent tack or nail fasteners 12 disposed within the same row comprises, for example, roughly 3.2 centimeters center-to-center or on-center distances or separations, whereas the longitudinal frequency, spacing, or pitch as defined between adjacent tack or nail fasteners 12 disposed within the alternating rows comprises, for example, roughly two (2) centimeters center-to-center or on-center distances or separations. Obviously, since each tack or nail fastener 12 only comprises a single point or

sharpened end upon which the overlying carpet can be engaged when being stretched and laid, then the density or compactness of the number of engagement or contact points defined between the overlying carpet and the underlying carpet tacks or nails 12 is predetermined as a function of the number of tacks or nails 12 that can be disposed within the linear array which extends throughout the predetermined longitudinal extent or length of the carpet strip 11. More particularly, since the conventional or PRIOR ART carpet strip 11 normally has a longitudinal extent or length of about hundred twenty two (122) centimeters, the number of tacks or nails 12 that are usually fixed within the carpet strip 11 comprises approximately sixty (60) nails or tacks 12.

[0004] However, in order to ensure, for example, that the overlying wall-to-wall carpeting is fixedly secured to the underlying carpet strips 11 at all locations along the peripheral edges of the overlying carpeting as disposed along the walls defining a particular room space so as to in turn ensure that the wall-to-wall carpeting is fixedly attached or secured to an underlying flooring or substrate, it would be desirable to provide the carpet strips 11 with additional points, locations, or sites at which engagement or contact between the overlying carpeting and the fixation fasteners 12 of the underlying carpet strips 11 could be achieved without incurring or necessitating additional material costs, installation procedures, installation time, or installation costs, and without adversely affecting the structural integrity of the underlying carpet strips 11. Obviously, all of these operational drawbacks and disadvantages would be characteristic of a modified conventional or PRIOR ART carpet strip 11 if additional tack or nail fasteners 12 were simply inserted into conventional or existing carpet strips 11.

[0005] It has been further experienced that, when the overlying carpeting is in fact secured to the numerous tack or nail fasteners 12 of the underlying carpet strip 11, substantial forces, which are a function of the stretching of the overlying carpeting in accordance with conventional carpet installation procedures or techniques, are effectively impressed upon each carpet tack or nail fastener 12. The tacks or nails 12 are normally bent or disposed at a predetermined angled inclination A, as illustrated within FIGURE 2, toward the wall along which the edge of the carpeting is being laid, and such forces tend to bend the tacks or nails 12 away from the wall whereby such bending or deformation of the tacks or nails 12 tends to compromise the integrity of the engagement or mounting of the overlying carpeting upon the underlying carpet strips 11 and with respect to the underlying substrate or flooring. In a related manner, such bending forces may similarly tend to cause the individual tacks or nails 12 to pull free of the carpet strip 11 thereby also adversely affecting or compromising the structural integrity of the carpet strip 11 as well as the integrity and maintenance of the fixed connection of the stretched overlying carpeting to the underlying carpet strip 11 and substrate or flooring.

[0006] A need therefore exists in the art for a new and improved carpet strip which has a plurality of fasteners disposed therein whereby such fasteners can effectively define a substantially larger number of attachment sites or locations per lineal inch or foot of carpet strip, at which the overlying carpeting is able to be secured to the underlying carpet strip, than is currently possible with conventional or PRIOR ART carpet strips having tack or nail type fasteners mounted therein. In addition, a need exists in the art for a new and improved carpet strip wherein each one of the plurality of fasteners disposed therein exhibits enhanced resistance to the bending forces inherently impressed thereon by means of the overlying carpeting being attached to the underlying carpet strips in accordance with well-known carpet-stretching techniques such that the original inclination of the fasteners with respect to the horizontal disposition of the carpet strip can be maintained so as to in turn maintain the stretched and overlaid carpeting securely fastened to the underlying carpet strips. Still further, a need exists in the art for a new and improved carpet strip wherein each one of the plurality of fasteners disposed therein exhibits enhanced resistance to pull-through of the fasteners with respect to the underlying carpet strip, whereby the structural integrity of the attachment system for attaching the overlying carpeting to the underlying carpet strips, as well as with respect to the underlying flooring or substrate, is maintained intact.

OBJECTS OF THE INVENTION

[0007] Accordingly, it is an object of the present invention to provide a new and improved carpet strip for attaching or securing overlying carpeting to underlying carpet strips which are, in turn, fixedly attached or secured to an underlying substrate or flooring.

[0008] Another object of the present invention is to provide a new and improved carpet strip for attaching or securing overlying carpeting to underlying carpet strips, which are, in turn, fixedly attached or secured to an underlying substrate or flooring, wherein the various operational and structural drawbacks and disadvantages, characteristic of conventional or PRIOR ART carpet strips, are effectively overcome.

[0009] An additional object of the present invention is to provide a new and improved carpet strip for attaching or securing overlying carpeting to underlying carpet strips, which are, in turn, fixedly attached or secured to an underlying substrate or flooring, wherein a substantially enhanced number of fastening points or locations per lineal inch or foot of the carpet strip, at which the overlying carpeting can be attached to the underlying carpet strips, can be achieved without incurring or necessitating additional material costs, installation procedures, installation time, or installation costs.

[0010] A further object of the present invention is to provide a new and improved carpet strip for attaching or securing overlying carpeting to underlying carpet

strips, which are, in turn, fixedly attached or secured to an underlying substrate or flooring, wherein a substantially enhanced number of fastening points or locations per lineal inch or foot of the carpet strip, at which the overlying carpeting can be attached to the underlying carpet strips, can be achieved without incurring or necessitating additional material costs, installation procedures, installation time, or installation costs, and wherein each one of the plurality of fasteners disposed therein exhibits enhanced resistance to bending forces inherently impressed thereon by means of the overlying carpeting being attached to the underlying carpet strips in accordance with well-known carpet-stretching techniques.

[0011] A last object of the present invention is to provide a new and improved carpet strip for attaching or securing overlying carpeting to underlying carpet strips, which are, in turn, fixedly attached or secured to an underlying substrate or flooring, wherein a substantially enhanced number of fastening points or locations per lineal inch or foot of the carpet strip, at which the overlying carpeting can be attached to the underlying carpet strips, can be achieved without incurring or necessitating additional material costs, installation procedures, installation time, or installation costs, and wherein each one of the plurality of fasteners disposed therein exhibits enhanced pull-through resistance with respect to the underlying carpet strip so as not to adversely affect the integrity of the attachment system of the overlying carpeting to the underlying carpet strip and with respect to the underlying substrate or flooring.

SUMMARY OF THE INVENTION

[0012] The foregoing and other objectives are achieved in accordance with the teachings and principles of the present invention through the provision of a new and improved carpet strip which comprises a carpet strip component within which a plurality of two-legged or two-pronged staples are fixedly secured within an array comprising two or three longitudinally offset rows of staple fasteners. As is characteristic of conventional or PRIOR ART carpet strips having tack or nail fasteners fixedly mounted therein wherein the tack or nail fasteners are positioned at locations, within the alternating or longitudinally offset rows, which are separated by a pitch or spacing of about two centimeters on-center or center-to-center distances, the staples of the present invention carpet strip, as disposed within the alternating or longitudinally offset rows, are also spaced or separated by means of a pitch or spacing of about two centimeters as defined between adjacent legs of adjacent staples such that the on-center or center-to-center distances defined between the staples comprises about 3,2 centimeters. In this manner, the number of fastener points per lineal foot of the carpet strip of the present invention, as defined by means of the two-pronged or two-legged staples and upon which the overlying carpeting can be en-

gaged, is increased, as compared to the number of fastener points per lineal foot of the conventional or PRIOR ART carpet strip as defined by means of the tack or nail fasteners, by approximately twenty to twenty-five per cent (20-25%).

[0013] In addition, the cross-sectional configuration of each one of the legs or prongs of each two-pronged or two-legged staple is substantially rectangular such that the resistance to bending forces, as impressed upon the prongs or legs of the staple fasteners by means of the stretched, overlying carpeting, is effectively enhanced four-fold as a result of being unidirectional. Still further, in view of the fact that the two prongs or legs of each staple are integrally connected together by means of a transversely extending bridge or crown portion, pull-out resistance of the staples, with respect to the carpet strip, is significantly enhanced.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] Various other objects, features, and attendant advantages of the present invention will be more fully appreciated from the following detailed description when considered in connection with the accompanying drawings in which like reference characters designate like or corresponding parts throughout the several views, and wherein:

FIGURE 1 is a top plan view, of a conventional PRIOR ART carpet strip having two longitudinally offset rows of tack fasteners fixedly mounted therein, schematically illustrating the conventional disposition of the tack fasteners within the carpet strip, wherein the tack fasteners are positioned, along the longitudinal extent of the carpet strip, at predetermined longitudinally offset locations which are spaced apart from each other by means of about two (2) centimeters center-to-center or on-center distances;

FIGURE 2 is a side elevational view of a conventional PRIOR ART carpet strip such as that shown in FIGURE 1 illustrating the inclined loci of the two rows of tack fasteners as fixedly mounted within the conventional PRIOR ART carpet strip;

FIGURE 3 is a top plan view similar to that of FIGURE 1 showing, however, a first embodiment of a new and improved carpet strip, constructed in accordance with the principles and teachings of the present invention, having two longitudinally offset rows of two-pronged or two-legged staple fasteners fixedly mounted therein, wherein the staple fasteners are schematically illustrated as being positioned, along the longitudinal extent of the carpet strip, at predetermined longitudinally offset locations which are spaced apart from each other by means of 3,2 centimeters center-to-center or on-

center distances such that outside leg members of adjacent staple fasteners are spaced apart from each other by means of about two (2) centimeters distances;

FIGURE 4 is a perspective view of the new and improved carpet strip shown in FIGURE 3 illustrating the actual disposition of the staple fasteners as mounted upon the carpet strip and within the two rows thereof;

FIGURE 5 is a front elevational view illustrating one of the two-pronged or two-legged staple fasteners as used within the new and improved carpet strip illustrated within FIGURE 3 and 4;

FIGURE 6 is a side elevational view of the two-pronged or two-legged staple fastener illustrated within FIGURE 5; and

FIGURE 7 is a side elevational view similar to that of FIGURE 2 showing, however, a second embodiment of a new and improved carpet strip, constructed in accordance with the principles and teachings of the present invention, wherein three longitudinally offset rows of staple fasteners may be fixedly provided within the carpet strip.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0015] Referring now to the drawings, and more particularly to FIGURES 3 and 4 thereof, a first embodiment of a new and improved carpet strip assembly, constructed in accordance with the principles and teachings of the present invention, is disclosed and is generally indicated by the reference character 110. In connection with the description of the new and improved carpet strip assembly 110, it is initially noted that component parts of the new and improved carpet strip assembly 110 of the present invention, which correspond to similar components parts of the conventional or PRIOR ART carpet strip assembly 10, will be designated by similar or corresponding reference characters or numbers except that such reference characters or numbers will be within the 100 series. More particularly, it is seen that the new and improved carpet strip assembly 110 comprises a carpet strip 111 within which a plurality of two-legged or two-pronged staples 112 are fixedly disposed or mounted. As best seen in FIGURES 5 and 6, each one of the two-legged or two-pronged staples 112 comprises a pair of legs or prongs 114, 116 which are integrally interconnected together by means of a bridge or crown portion 118.

[0016] In accordance with a unique and novel feature characteristic of the new and improved carpet strip assembly 110 of the present invention, it is seen that the cross-sectional configuration of each leg or prong

114,116 of each staple 112 is substantially rectangular. More particularly, each leg or prong 114,116 has a width dimension w of approximately 0,5 mm, however, each leg or prong 114,116 is seen to have a depth dimension D of approximately 1,3 mm. Accordingly, it is to be appreciated that the structural configuration of each leg or prong 114,116 of each staple 112 comprises that of a rectangular parallelepiped which effectively defines a beam member. Therefore, it can be appreciated further that, in accordance with the flexural characteristics of beam structures, which are functions of, for example, the load impressed upon each particular prong or leg, the length of each leg or prong, the modulus of elasticity of each leg or prong, and the moment of inertia characteristic of the cross-section of the each leg or prong, the bending resistance of each leg or prong 114, 116 of each staple 112 is approximately four times the bending resistance of the conventional tack or nail 12.

[0017] In accordance with another unique and novel feature characteristic of the new and improved carpet strip assembly 110 constructed in accordance with the principles and teachings of the present invention, the external width dimension W of each staple 112 is approximately 1,3 cm, and the staples 112 are mounted within the carpet strip 111 so as to be arranged within a dual-row array wherein the longitudinally offset rows of staples are defined by means of row loci 113,115. In addition, the longitudinal spacing as defined between the right leg or prong 116 of each staple 112 and the left leg or prong 114 of each staple 112, whether the particular staple 112 is disposed within row 113 or row 115, as may best be seen from FIGURE 3, is similar to the conventional or PRIOR ART spacing as defined between adjacent tacks or nails 12, that is, about two (2) cm, and the center-to-center or on-center distance defined between adjacent or consecutive staples 112 is about 3,2 cm. Accordingly, when the staples 112 are fixedly mounted within the carpet strip 111, the number of staples 112, which can be accommodated within the carpet strip 111 having the same longitudinal extent or length as that of the conventional or PRIOR ART carpet strip 11, that is, hundred twenty two (122) cm, is thirty-seven (37) whereby the number of fastener prongs or legs 114,116 is seventy-four (74). Accordingly, it can be readily appreciated that the number of engagement or contact points or locations, as defined by means of the seventy-four (74) prongs or legs 114,116 and upon which the stretched overlaid carpeting can be secured, is enhanced or maximized and comprises an amount which is approximately twenty to twenty-five percent (20-25%) greater than the number of engagement or contact points or locations, as defined by means of the sixty (60) nails or tacks 12 of the conventional or PRIOR ART carpet strip 11, upon which the stretched overlaid carpeting could be secured when the conventional or PRIOR ART carpet strip 11 is employed.

[0018] In accordance with still another unique and novel feature characteristic of the new and improved

carpet strip assembly 110 constructed in accordance with the principles and teachings of the present invention, and as may best be appreciated from FIGURE 4, when each one of the staples 112 is mounted or embedded within the carpet strip 111 such that the legs or prongs 114,116 are obviously oriented upwardly in its inclined mode, the integral interconnecting crown or bridge portion 118 is engaged with, or effectively embedded within, an undersurface or bottom surface portion 120 of the carpet strip 111. Therefore, it can be readily appreciated that, unlike each one of the conventional or PRIOR ART tacks or nails 12 mounted or embedded within the carpet strip 11 which can, under the influence of the loading and bending forces, possibly become loosened and therefore be pulled through or dislodged from the carpet strip 11 in view of the fact that each one of the tacks or nails 12 obviously comprises a single independent shaft structure, both of the legs or prongs 114,116 comprise co-dependent shaft structures as a result of being interconnected together by means of the bridge or crown portion 118. In addition, as a result of the bridge or crown portion 118 per se being in contact with, or effectively embedded within, the undersurface or bottom surface portion 120 of the carpet strip 111, such bridge or crown portion 118 will in fact serve as a blocking or retarding member which will in fact exhibit substantial resistance forces for counteracting any bending or loading forces which would otherwise tend to loosen and therefore cause pull-through or dislodgment of the legs or prongs 114, 116 from the carpet strip 111.

[0019] With reference lastly being made to FIGURE 7, a second embodiment of a new and improved carpet strip assembly, constructed in accordance with the teachings and principles of the present invention, is disclosed and is generally indicated by the reference character 210. In connection with the description of the second embodiment of the new and improved carpet strip assembly 210 of the present invention, it is initially noted that component parts of the second embodiment of the new and improved carpet strip assembly 210 of the present invention, which correspond to similar components parts of the first embodiment of the new and improved carpet strip assembly 110 of the present invention, will be designated by similar or corresponding reference characters or numbers except that such reference characters or numbers will be within the 200 series. It is additionally noted that the only significant difference between the first and second embodiments of the new and improved carpet strip assemblies 110,210 of the present invention resides in the fact that, in lieu of the dual-row arrangement of the two-legged or two-pronged staples 112 characteristic of the carpet strip assembly 110, the carpet strip assembly 210 comprises three longitudinally offset rows of staples 212. In this manner, a still further enhanced number of staples 212, and a still further enhanced total number of legs or prongs 214,216, can be provided upon the carpet strip

211. Still further, the carpet strip assembly 210 is illustrated as being disposed in its operative position with respect to an underlying substrate or flooring 222 and an upstanding or vertical wall surface 224.

[0020] Thus, it may be seen that in accordance with the principles and teachings of the present invention, there has been disclosed a new and improved carpet strip assembly which comprises a carpet strip component within which a plurality of two-legged or two-pronged staples are fixedly secured within an array comprising two or three longitudinally offset rows of staple fasteners. The staples of the present invention carpet strip, as disposed within the alternating or longitudinally offset rows, are spaced or separated by means of a predetermined pitch or spacing as defined between adjacent legs of adjacent staples, and in this manner, the number of fastener points per lineal foot of the carpet strip of the present invention is increased, as compared to the number of fastener points per lineal foot of the conventional or PRIOR ART carpet strip, by approximately twenty to twenty-five per cent (20-25%). In addition, the resistance to bending forces, as impressed upon the prongs or legs of the staple fasteners by means of the stretched, overlying carpeting, is effectively enhanced four-fold as a result of each leg or prong of each staple comprising a beam member having a substantially rectangular cross-sectional configuration, and still further, in view of the fact that the two prongs or legs of each staple are integrally connected together by means of a transversely extending bridge or crown portion, pull-out resistance of the staples, with respect to the carpet strip, is significantly enhanced.

[0021] Obviously, many variations and modifications of the present invention are possible in light of the above teachings. For example, while the particular spacing defined between adjacent staple fasteners has been particularly specified, such spacing may of course be altered so as to suit or accommodate particular carpeting applications. It is therefore to be understood that within the scope of the appended claims, the present invention may be practiced otherwise than as specifically described herein.

Claims

1. A carpet strip assembly, (110 ; 210) comprising:

a carpet strip (111 ; 211) having a predetermined longitudinal extent; and
a plurality of fasteners (112 ; 212) fixedly mounted within said carpet strip and having pointed ends for engaging an overlying carpet so as to secure the overlying carpet to said carpet strip,
said plurality of fasteners (112 ; 212) comprising staples having a pair of prongs (114 ; 116) integrally interconnected by means of a crown

portion (118).

2. The carpet strip assembly as set forth in Claim 1, wherein:

said plurality of staple fasteners (112) are arranged within a multiple row array (113, 115).

3. The carpet strip assembly as set forth in Claim 2, wherein:

said multiple row array of staple fasteners comprises two rows (113, 115) of said staple fasteners (112).

4. The carpet strip assembly as set forth in one of Claims 2 and 3, wherein:

said multiple row array of staple fasteners (112) comprises three rows of said staple fasteners.

5. The carpet strip assembly as set forth in one of Claims 2 to 4, wherein:

said multiple row array of staple fasteners (112) comprises longitudinally offset rows (113, 115) of said staple fasteners.

6. The carpet strip assembly as set forth in one of Claims 1 to 5, wherein:

each one of said pair of prongs (112) has a substantially rectangular cross-sectional configuration defining a beam structure for exhibiting enhanced resistance to bending forces attendant the attachment of the overlying carpeting to said carpet strip.

7. The carpet strip assembly as set forth in one of Claims 1 to 6, wherein:

each one of said plurality of staple fasteners (112 ; 212) is spaced from an adjacent one of said plurality of staple fasteners by means of a predetermined distance so as to maximize the number of staple fasteners, and the number of fastener prongs, per lineal foot of said longitudinal extent of said carpet strip.

8. The carpet strip assembly as set forth in Claim 7, wherein:

a right one of said pair of prongs (112 ; 212) of a first one of said plurality of staple fasteners is spaced a predetermined distance from a left one of said pair of prongs (112 ; 212) of a second one of said plurality of staple fasteners wherein said second one of said plurality of sta-

ple fasteners is disposed adjacent to said first one of said plurality of staple fasteners.

9. The carpet strip assembly as set forth in Claim 8, wherein:

5

said carpet strip has a longitudinal length dimension of approximately 122 centimeters ; and

said predetermined distance that said right one of said pair of prongs of said first one of said plurality of staple fasteners is spaced from said left one of said pair of prongs of said second one of said plurality of staple fasteners is approximately two (2) centimeters such that approximately thirty-seven (37) staple fasteners, defining seventy-four (74) pointed ends, can be fixedly mounted upon said carpet strip.

10

15

10. The carpet strip assembly as set forth in one of Claims 1 to 9, wherein:

20

said crown portion (118) of each one of said staple fasteners (112 ; 212), integrally interconnecting said pair of prongs (114, 116) of said staple fasteners (112), is embedded within said carpet strip so as to enhance pull-through resistance characteristics of said staple fasteners with respect to said carpet strip under load forces attendant the attachment of the overlying carpeting to said staple fasteners of said carpet strip.

25

30

11. The carpet strip assembly as set forth in one of claims 2 to 10, wherein :

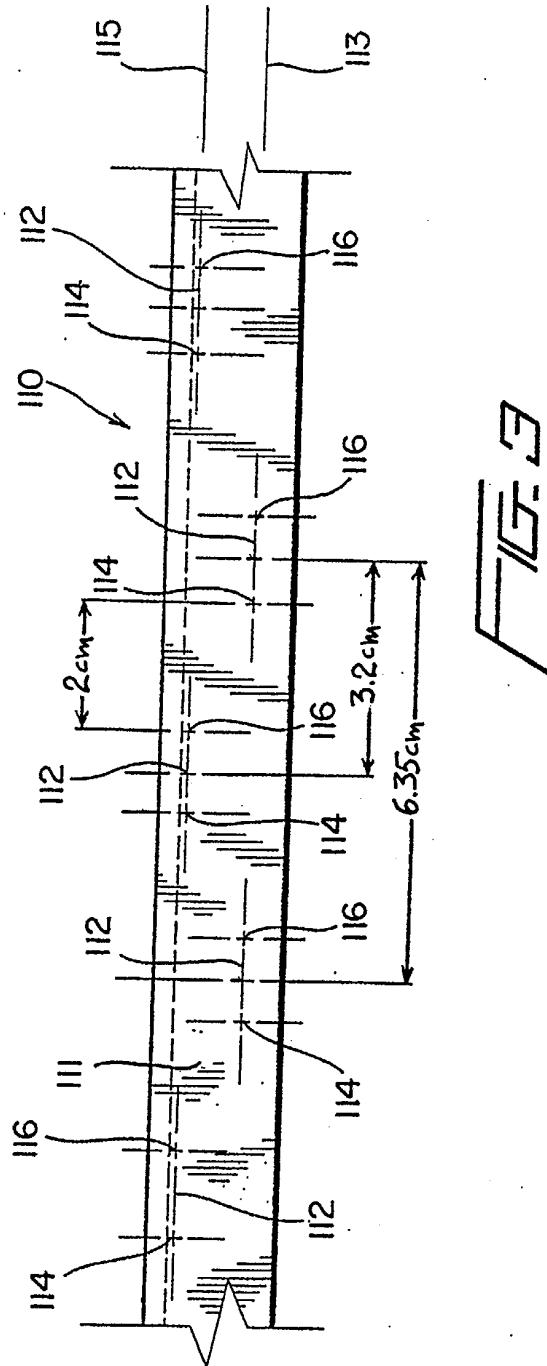
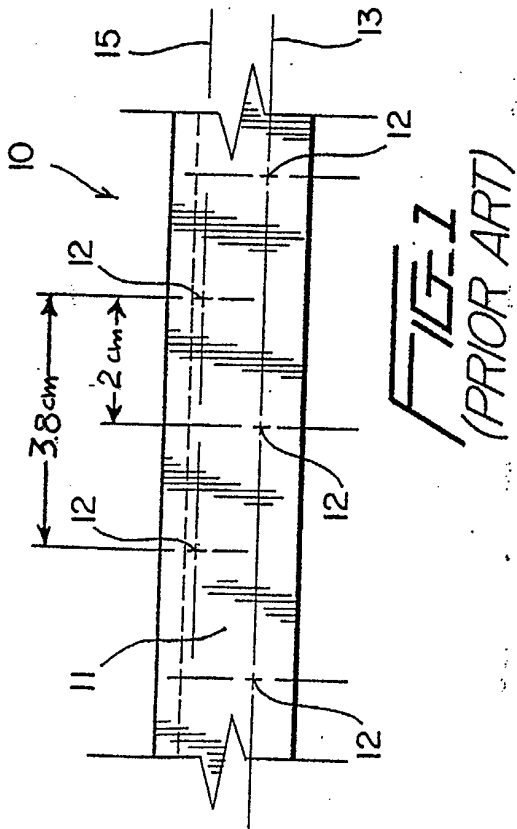
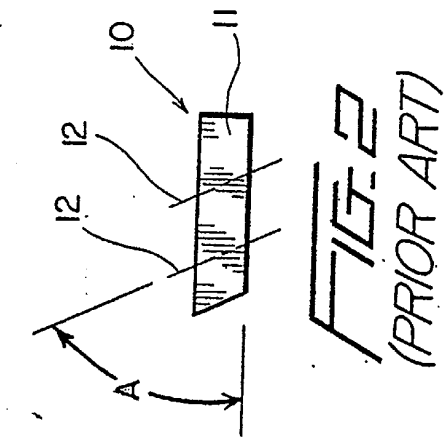
35

each one of said plurality of staple fasteners (112 ; 212) disposed within each row of said multiple row array is spaced from each adjacent one of said plurality of staple fasteners by means of a predetermined distance so as to maximize the number of staple fasteners, and the number of fastener prongs, per lineal foot of said longitudinal extent of said carpet strip.

45

50

55



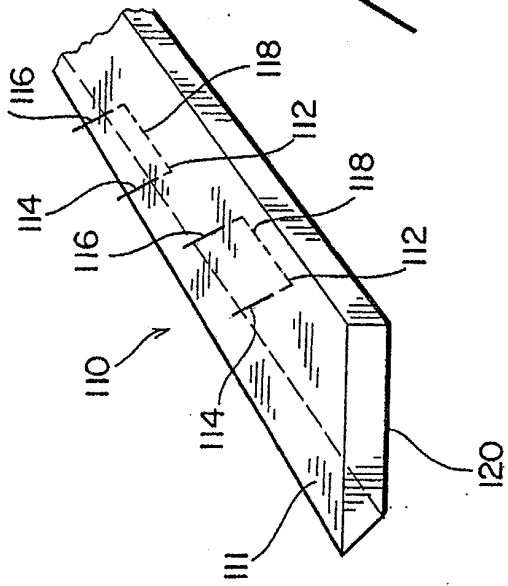


FIG. 4

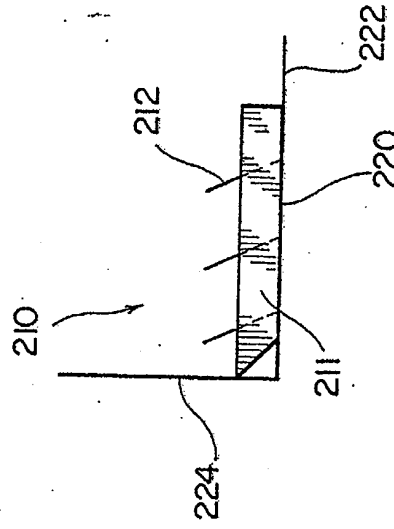


FIG. 7

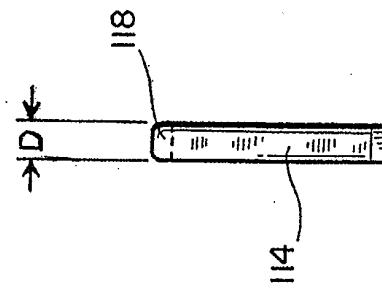


FIG. 8

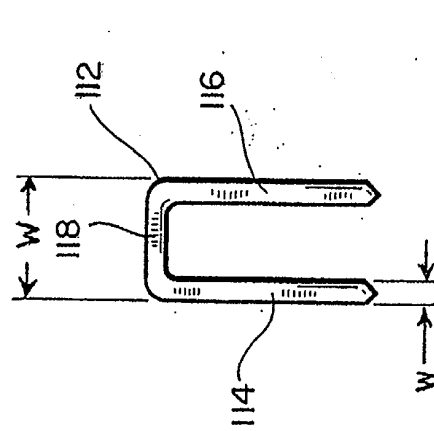


FIG. 5