Jan. 5, 1954 C. M. SZPILBERG 2,664,589

CARPET GRIPPER

Filed July 27, 1951 2 Sheets-Sheet 1

Fig. 1

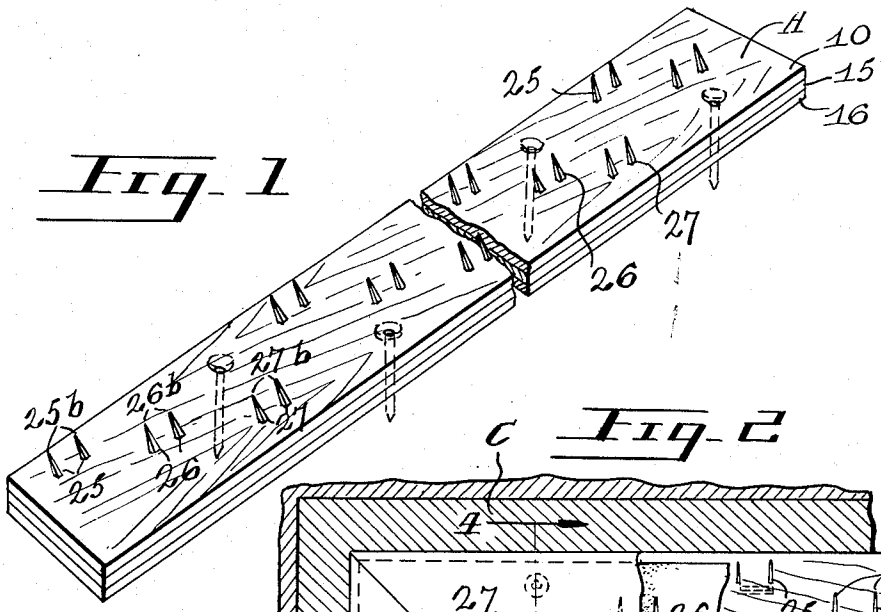
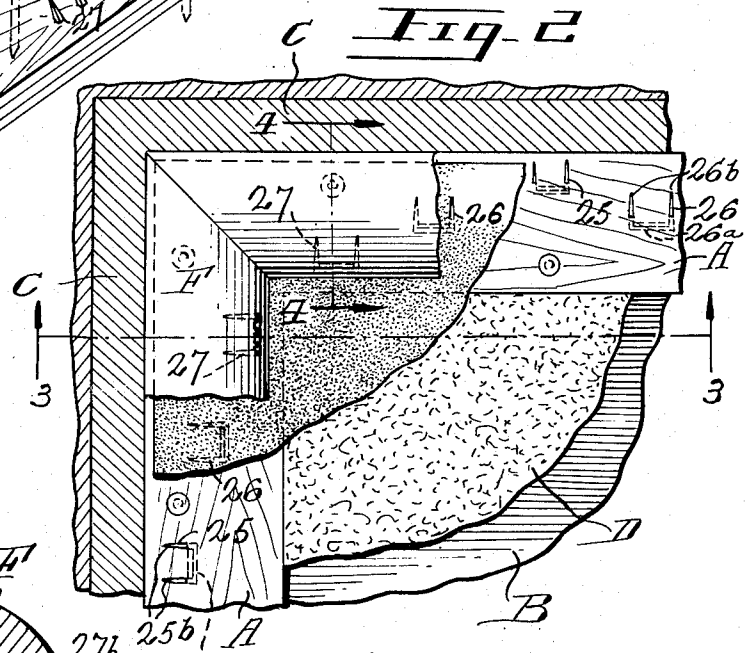


Fig. 2



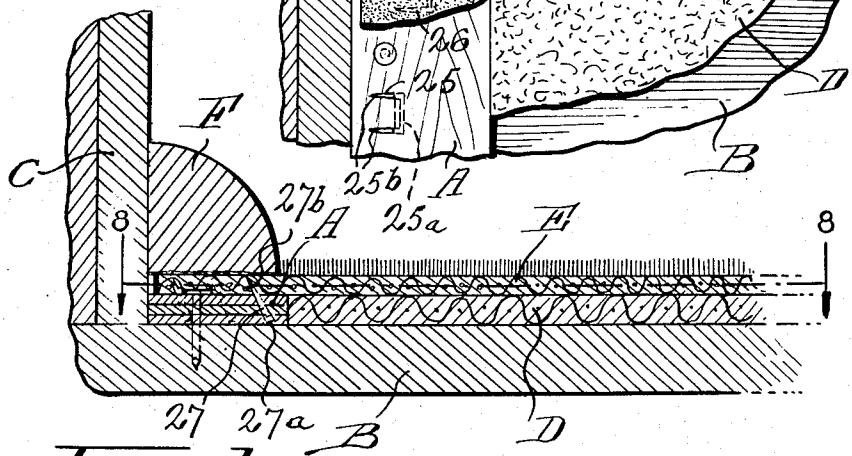


Fig. 3

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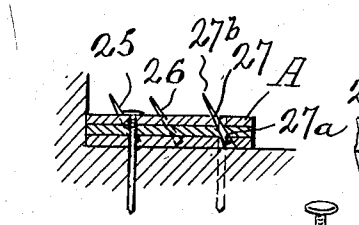


Fig. 4

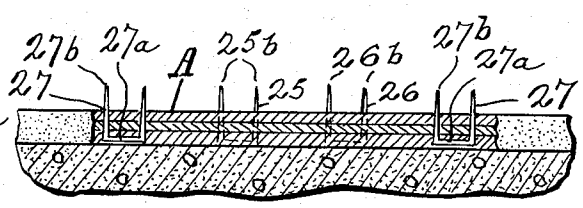


Fig. 5

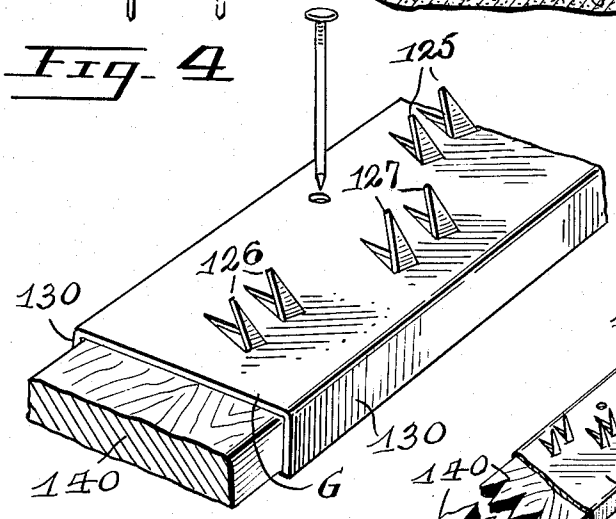


Fig. 7

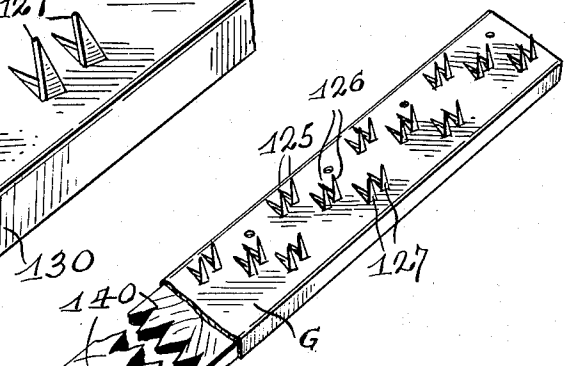
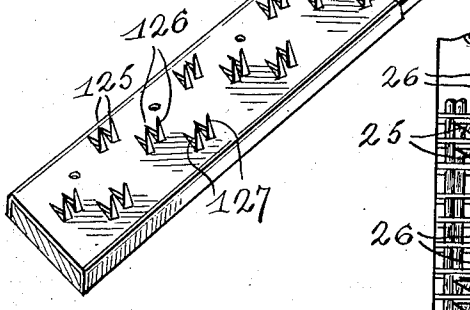
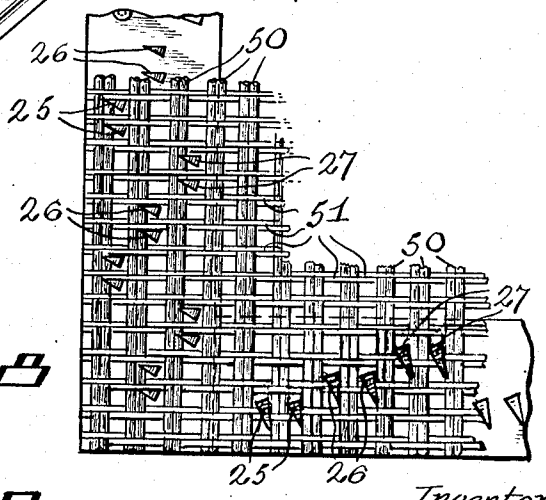


Fig. 6





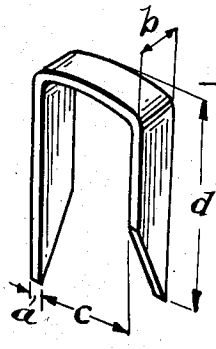


Fig. 8

Fig. 9

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CARPET GRIPPER

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Application July 27, 1951, Serial No. 238,817

3 Claims. (Cl. 16—16)

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Introduction

This invention relates to a carpet gripper.

It is common practice to use a carpet gripping means which is anchored to the floor near the wall and has upwardly projecting spikes to engage the edge of the carpet. There are many different devices along these lines. They generally employ a base fixed to the floor and spikes which are arranged over the base in quite widely spaced relationship. These devices all have one disadvantage or another.

Applicant's development

The applicant has now developed a carpet gripper which is excellent for the purpose and at the same time overcomes disadvantages of the prior devices. The applicant has found that a much better grip on the carpet obtains when each engaging means includes a pair of closely spaced points parallel to the longitudinal axis of the strip i. e. equally spaced from its longitudinal sides rather than a single point. This pair of points engages the adjoining transverse thread of the carpet (one running parallel to the gripper strip, the warp or the weft as the case may be) and straddles the intervening oppositely extending threads. The applicant has also found that improved results are obtained in a construction having spaced apart rows of engaging means, the means of each row being staggered as compared with those in adjoining rows. Only half as much tension is applied to any localized portion of the carpet and only half as much strain put on any one point of one thread.

One of the applicant's preferred forms of gripper has as a base a strip of wood. There are a number of staples inserted through the strip with their points projecting beyond its surface at an angle. These staples are preferably arranged in spaced apart rows. In the case of a strip 1⅛ inches wide, the applicant prefers to use two or three rows with the staples spaced so that the prong of one staple spaced approximately 1 inch from the prong of the adjacent staple and the staples of respective rows staggered. The staples penetrate the base at an angle between 50° to 60° to the face of the strip. Plywood is a most suitable material from which to make the strip. The base layer usually has its grain running lengthwise, the intermediate layer crosswise and a bottom layer lengthwise. This arrangement prevents splitting of the plywood when the staples are inserted or when the gripper is nailed to the floor. Alternatively, the strip may, by using staples, be made of plain wood in

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contrast to plywood. One suitable wood is bass wood.

In an alternative construction according to the invention, the pairs of prongs may be formed on a metal strip. These pairs are preferably arranged in rows, the prongs of each row staggered. There may be, for example two or three rows. The metal strip may be a channel member and it can include a wooden filler. The function and manner of applying the gripper made in this way is similar to the application of the strip made entirely from wood using staples as the engaging means.

Detailed description

Further details of the invention will be gathered from the following detailed description of several preferred embodiments which are illustrated in the accompanying drawings, and in which:

Figure 1 is a perspective view of a carpet gripper of a preferred form, according to the invention.

Figure 2 is a fragmentary plan view partly in cross-section of the corner of a room in which a carpet has been laid, according to the invention, using the applicant's preferred type of gripper.

Figure 3 is a fragmentary cross-section substantially along the lines 3—3 of Figure 2.

Figure 4 is a fragmentary vertical cross-section along the line 4—4 of Figure 2.

Figure 5 is a vertical cross-section taken along the length of the gripper of the previous figures showing the relationship to a cement floor.

Figure 6 is a perspective view of another kind of gripper, according to the invention.

Figure 7 is a greatly enlarged perspective view of a part of the gripper shown in Figure 6.

Figure 8 is a schematic view of the bottom of a carpet illustrating the manner in which the gripper operates to engage the normal type of carpet.

Figure 9 is a perspective view of a staple of a type preferred for use in connection with the invention.

Referring more particularly to the drawings the preferred gripper shown uses a plywood strip as the base. This strip includes a primary layer 10 in which the grain runs lengthwise, a secondary layer 15 in which the grain runs cross-wise and a third layer 16 in which the grain runs lengthwise. While only three layers have been illustrated, it is understood that five layers could also be used. A one-piece strip of wood can be employed, but plywood is preferred.

Rows of staples 25, 26 and 27 penetrate the base "A" and have their points 25*b*, 26*b* and 27*b* projecting diagonally beyond, as best shown in the figure, and their heads 25*a*, 26*a* and 27*a* embedded in the underside of the edge of the strip "A." If the floor is of wood, the head 25*a* of the staple may be embedded beneath the surface of the strip. If the floor is cement, the head may be flush with the surface of the strip.

Function

The gripper is applied as follows. The strips "A" are nailed or cemented to the floor "B" with the inside edge spaced slightly from the wall "C" leaving enough room to push the edge of the carpet between the wall and the gripper. A felt mat "D" of the same thickness as the gripper is laid to cover the entire free floor space. The carpet "E" is then laid over the felt and the grippers with the edge of the carpet stretched and impaled on the prongs of the staples. A molding "F" may be placed in the angle of the wall to cover the edge of the carpet over the top of the gripper. The carpet may be stretched into place by special gripping devices available for this purpose. All four edges of the carpet are gripped by a gripper at each wall.

The gripper of the invention has the following advantages. It can be positively and easily anchored to a floor of cement, wood or other material. It can be nailed, it can be cemented. The gripping prongs are solidly anchored in the base strip. The base strip itself is strong and will not allow removal or shifting of the prongs. The device is flexible in that it can be made in various sizes, widths and thicknesses. It is made from readily available materials. In making the gripper the prongs can be adjusted so that the gripper is calibrated to the spacing of the warp and weft in a particular carpet. The present gripper grips the carpet better than most previous devices.

One particular advantage of employing staples is that the points have a better grip on the warp and weft of the carpet. This is because pairs of points grip, at the same time, two closely spaced parts of the warp, or the weft, as the case may be. This allows a better grip so as to enable stretching the carpet lengthwise and widthwise. This is particularly so in carpets of the thick-backed Indian handmade types. The distance between the prongs of the respective staples can be varied to grip carpets of varying qualities and types. The staples also furnish a supplementary means for bonding the gripper to the floor where cement is used. The cement adheres to the wide heads of the staples as well as to the wood.

An alternate form of gripper is shown in Figures 6 and 7. In this case spaced apart pairs of points 125, 126 and 127 are provided on an elongated metal base. In this case the metal is a channel "G" having flanges 130 and provided with a wooden filler 140. Points 125, 126 and 127 are formed by punching out the metal of the strip "G" as shown. In use, the device functions similarly to the device of the previous figures.

Figure 8 is a horizontal cross-section looking upwards taken just under the carpet substantially along the line 8—8 of Figure 3. The warp threads are represented by 50 and the weft threads by 51. The points 25, 26 and 27 are in a position to engage the adjacent warp thread, or weft thread as the case may be, at two closely spaced apart points. The points straddle the cross threads. Because of this arrangement the action of the points is better than in the case of single points.

Figure 9 shows a form of staple preferred for use in connection with the invention.

This staple has a pair of spaced apart shanks 150 and 151 connected by a bridge portion 152. The staple is quadrilateral in cross section. The shanks are tapered at their ends to form points.

The preferred dimensions of the staple are as follows. The thickness of the staple represented by "*a*" preferably ranges from about 0.030" (thirty thousandths) to about 0.065" (sixty-five thousandths) and is by choice about 0.040" (forty thousandths). The dimension "*b*" is preferably about 0.090" (ninety thousandths).

The length of the staple i. e. the dimension "*d*" may range from about ⅝ of an inch to about ¾ of an inch.

The inside dimension "*c*" from shank to shank may range from about $\frac{3}{16}$ or an inch to about ¼ of an inch and is preferably around $\frac{3}{16}$ of an inch.

The staples in the same row are spaced apart from center to center preferably from about 1¾" to about 2½". The distance between the staples in each row, center to center, is preferably from ⅞" to about 1¼".

The preferred strip width is around 1⅛".

There are preferably two or three rows of staples longitudinally of the strip in which the staples are staggered laterally of the strip. In one preferred construction the staples of one row are ½" from the edge of the strip at one side. This is a two-row strip.

The more shots in the carpet a smaller staple is better. For example, in a carpet having 8 or 9 shots per inch, a staple of about $\frac{3}{16}$" (dimension "*c*") is best. In the case of carpets having 5 or 6 shots per inch a staple of about (dimension "*c*") ¼" is preferred.

The angle of the staple to the surface of the strip may range from around 40° to around 65°. Where a lower angle is employed staples need be longer than in the case where a higher angle is employed.

The use of staples instead of single nails has a number of advantages. The staple always engages the carpet at two closely spaced apart points. So less pressure is applied to the carpet at any one point and likewise less pressure is applied to the staple. Whereas in the case of nails, a shank thickness from about seventy to about eighty thousandths, that is about $\frac{1}{16}$", is standard, with staples the wire can be from 0.0625" down to about 0.040" as illustrated. This in turn reacts favorably on the manufacture of the product. The smaller shanks of the staples are less likely to split the wood.

The applicant can further employ ordinary wood, for example bass wood, instead of plywood. If desired, the wood can be provided with a facing of paper or cloth or even a coating of plastic or rubber from a solution.

So the present construction is advantageous not only in function, but also in manufacture.

I claim:

1. A carpet gripper, comprising, an elongated narrow thin wooden strip adapted to lie along a floor margin and be anchored to it and having a bottom face and a top face, a plurality of staples extending through the strip and each having a bridge portion adjacent to the bottom face and a pair of prongs extending from said bridge portion through the strip and extending at a carpet-gripping angle from the top face, the staples being arranged in a plurality of rows lon-

gitudinally of the strip, the bridge portion of each staple extending longitudinally of the strip whereby its prongs are substantially equally spaced from the margin of the strip, the prongs of each staple being spaced apart from about $\frac{3}{16}$'' to about ¼'' whereby they are adapted to cooperate in engaging closely spaced apart portions of the carpet under tension with each prong taking about half the pull, the respective staples in each row being spaced apart from about 1¾'' to about 2½'' between their centers.

2. A carpet gripper, according to claim 1, in which the grain extends lengthwise.

3. A carpet gripper, according to claim 1, in which the wooden strip is a plywood strip.

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