FLEXIBLE WALL-COVERING ATTACHING MEANS

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ABSTRACT

Means for attaching flexible wall covering to a wall surface to improve its sound-absorbing characteristics as well as its appearance and comprising a longitudinally extending bracket-mounting strip adapted to be attached to the wall and separate brackets having attaching portions interfitting with attaching portions disposed at longitudinally spaced intervals along the strip. The covering, preferably fabric, is adapted to be stretched over the brackets and the brackets, as well as the surfaces on the strip between the brackets are provided with retaining hooks for engaging therewith. The brackets are so shaped that the area of the covering relative to the wall surface is substantially increased and is contoured to be of pleasing appearance and provide hollow cavities behind the covering which, along with the soft nature of the covering, increases the sound adsorption properties of the wall.

5 Claims, 9 Drawing Figures
FLEXIBLE WALL-COVERING ATTACHING MEANS

The present invention provides improvements over the bracket strips disclosed in my co-pending application, Ser. No. 855,742, filed Sept. 8, 1969 now abandoned.

According to the present invention, the bracket-mounting strip is made separately of sheet metal and is fastened to the wall surface to be covered. The brackets are also formed separately of sheet metal into substantially U-form with their legs having mounting flanges which will interfit with sets of mounting lugs struck outwardly from the strip at longitudinally spaced intervals. These brackets will project outwardly from the strip and will receive and retain the fabric wall covering by means of hooks formed thereon. Also, fabric-retaining hooks are provided on the strip between the brackets. The result is that the fabric will be pleated or contoured to provide a pleasantly contoured wall surface as well as sound-absorbing pockets or cavities.

The best mode contemplated in carrying out my invention is illustrated in the accompanying drawing in which:

FIG. 1 is a perspective view showing a wall covered according to my invention.

FIG. 2 is an enlarged horizontal sectional view taken along line 2—2 of FIG. 1.

FIG. 3 is a similar view taken along line 3—3 of FIG. 1.

FIG. 4 is an enlarged vertical sectional view taken along line 4—4 of FIG. 1.

FIG. 5 is a face elevational view of the bracket-mounting strip and cooperating brackets.

FIG. 6 is a plan view taken from the position indicated at line 6—6 of FIG. 5 but showing a separate bracket in association with the strip.

FIG. 7 is a face elevational view showing a separate bracket mounted on the strip.

FIG. 8 is a top plan view showing a different shape bracket mounted on the strip.

FIG. 9 is a similar view showing another shape bracket mounted on the strip.

With reference to the drawings, I have illustrated in FIG. 1, sheets of fabric 11 stretched and attached to a vertical wall surface by means of the attaching means of this present invention. The attaching means is shown as being arranged in a row 12 at the top of the wall adjacent the ceiling and in a row 13 at the bottom of the wall adjacent the floor. In the case of a wall of considerable vertical extent, intermediate rows of attaching means may also be used. The fabric used is flexible, heavy, sound-absorbing fabric, such as burlap. However, it may be other woven fabric or felt of natural or synthetic fibers. Because of the nature of the fastening means used in the rows 12 and 13, the area of the fabric applied to the wall is multiplied as compared to the area of the wall itself. Also, a series of wide ribs 14 are produced which alternate with flat surfaces 15. The ribs 14 provide hollow cavities or pockets behind the fabric which, along with the soft nature of the fabric, greatly increase the sound-absorbing characteristics of the wall.

The attaching means provided at the respective rows 12 and 13 is shown best in FIGS. 1 to 7 and consists of an elongated flat bracket-mounting strip 16 and a plurality of separate substantially U-shaped brackets 17 mounted at longitudinally spaced intervals therealong. Both the strip and the brackets are preferably stamped and formed from sheet metal.

As indicated, the strip 16 is elongated and flat and has the opposed parallel continuous edges 18 and 19. At intervals, the strip is provided with nail-receiving openings 20 by means of which it may be nailed to the wall surface S (FIG. 4). Cement nails 21 are indicated as being used in fastening the strip to the wall surface, but other fasteners may be used, such as screws, toggle bolts, etc.

At longitudinally spaced intervals, the strip 16 is provided with sets of bracket-mounting lugs, each set consisting of four lugs 25 in a square grouping. Each lug 25 is formed by being struck outwardly from the material of the strip 16. Each set of lugs is arranged as two pairs of vertically aligned lugs which are directed inwardly. The lugs of the opposed pairs are also horizontally aligned. The outwardly struck lugs 25 provide flange-receiving slots or sockets 26 extending transversely of the strip 16, with the sockets of the opposed vertical pairs opening inwardly towards each other. Also, between the longitudinally spaced groups of the lugs 25, the material of the strip 16, is struck outwardly to provide the fabric engaging hooks 27 which are in the form of sharp teeth that project outwardly from the adjacent flat area 28. These teeth are directed toward the edge 18 of the strip and are arranged in pairs with each tooth being adjacent one of the pair of lugs 25 of the respective groups of lugs, which is adjacent the edge 18.

Each of the brackets 17 is substantially U-shaped having an outer web or face portion 30 and the opposed inwardly extending legs 31, which in the form shown in FIGS. 1 to 7, are in spaced parallel relationship and joined to the outer web 30 at right angles. The brackets 17 are provided with edges 18a and 19a which are adapted to be disposed adjacent the respective strip edges 18 and 19 when the brackets are mounted thereon. Along the inner ends of the respective leg portions 31, attaching flanges 32 are formed which extend laterally outwardly at right angles thereto. Each of the flanges 32 is provided with an outwardly-opening notch 33 and with an outwardly extending stop lug 34 beyond the notch at its edge extremity, which is to be adjacent the edge 18 of the strip when the bracket 17 is mounted thereon. The outer web 30 and each leg 31 is provided with a pair of hooks or teeth 35, which are struck outwardly from the material thereof. It will be noted that these fabric-engaging teeth are directed toward the edge 18 of the bracket.

To mount the brackets 17 on the strip 16, the bracket is first positioned on the strip within the edges 18 and 19. The edge 18 will be termed the outer edge as it will usually be adjacent the ceiling or floor and the edge 19 will be termed the inner edge. The flanges 32 of the bracket are disposed in flat contact with the face of the strip between the two opposed columns of a group of the lugs 25. The notches 33 of the flanges will be slipped over the horizontal pair of lugs 25 toward the outer strip edge 18 (FIG. 7) and the ends of the flanges at the inner edge 19a of the bracket will be within the horizontal pair of lugs 25 toward the inner
It will be noted that these latter lugs 25 are closer to the inner strip edge 19 than the other lugs are to the outer strip edge 18. At this time, the edge 18 of the bracket is adjacent to the strip edge 18 but spaced inwardly thereof and the flanges 32 will be aligned with the slots 26 of the respective vertical pairs of aligning lugs 25. Then, if the bracket 17 is moved transversely of the strip 16 in the direction of the arrow (FIG. 7), this will move the flanges beneath all of the lugs 25 and will retain the bracket 17 against the face of the strip 16, it being understood that the lugs 25 frictionally engage the flanges to press them against the underlying surface of the strip to frictionally retain them in such position. The stop lugs 34 will move into contact with the outer lugs 25 and will prevent further inward movement of the bracket on the strip. At this time, the edge 19a of the bracket will be adjacent to, but still spaced within, the edge 19 of the strip (FIG. 5).

All of the fabric-hooking teeth 27 and 35 will thus be directed outwardly or toward the outer edge 18 of the strip.

As indicated above, the strips 16 are first attached to the wall surface adjacent the ceiling and floor. At the ceiling, the strip 16 will be mounted with its edge 18 uppermost and at the floor, it will be mounted with its edge 18 lowermost. The brackets 17 are then applied to the respective strips 16, and, as previously indicated, during this application there will be no interference with the ceiling or floor, respectively, because of the location of the lugs 25 on the strip and the notches 33 of the bracket flanges 32. Thus, during mounting of the brackets on the strip, they need never be moved beyond the edges 18 and 19 of the strip. Also, the brackets can be removed by reversing the mounting procedure, and during this removal, they will always be within the edges 18 and 19 so as not to contact the ceiling or floor. When the upper and lower assemblies are finished, the fabric 11 is draped around the longitudinally spaced, outwardly projecting brackets 17 and against the strip areas 28 therebetween and is hooked on the hooks 27 and 35. The hooks 27 and 35 are in horizontal alignment at a level intermediate the edges 18 and 19, but closer to the outer edge 18. The hooks 27 are located adjacent the bracket legs 31 so as to hold the portions of the fabric between the brackets in flat contact with the strip areas 28. Also, the rear hooks 35 on each leg 31 of the brackets is located adjacent the associated flange 32. This will produce sharp inner corners in the folds of the fabric. Preferably, before hooking the fabric 11 to the upper and lower assemblies, the respective upper and lower edges of the fabric are doubled by turning it inwardly as indicated at 11a in FIGS. 2 and 3. Thus, the fabric can be stretched and held between the inwardly turned hooks 27 and 35.

In FIG. 8, there is illustrated a different shape of bracket 17a which may be mounted on the strip 16. In this case, the legs 31a of the bracket converge toward the outer side of the bracket so that the outer web 30a is of lesser width than the web 30 of the previously described bracket 17. Otherwise, the brackets 17 and 17a are the same. This will give the wall a different contour. In FIG. 9, the bracket 17b is of still another shape with the legs 17b converging to still a narrower web 30b. In each form, the mounting flanges 32a or 32b will have their inner edges located to cooperate with opposed lugs 25 of the strip 16. Also, the hooks 35a of the brackets 17a and the hooks 35b of the brackets 17b will be located to cause the fabric to closely follow the contours of the spaced brackets and the flat strip areas therebetween. The different forms of brackets are interchangeable on the strips, due to the standard mounting means therefor, and this will permit changing the wall contour readily, if and when desired.

If desired, fabric-engaging hooks 27a may be provided on the strip 16 at positions which will ordinarily be covered by the respective U-shaped brackets, as indicated in the drawings. This would permit the use of a lesser number of brackets on the strip, for example, by eliminating every other bracket as compared to the arrangement shown.

It will be apparent that the above-described invention provides wall covering attaching means to attach fabric to a wall surface to give it a more pleasing appearance and better acoustic properties. The separate bracket mounting strips and brackets can be easily formed. The strips can be mounted on the wall adjacent the ceiling and floor and then the brackets can be readily slipped into position without interference by the ceiling or floor. The inverted brackets on the lower strip will not drop out before attaching the wall covering due to the frictional engagement of the aligning lugs with the flanges of the brackets slipped therebeneath. Also, outer stop lugs will limit inward movement of the brackets both on the lower and upper strips resulting from the pull thereon by the wall covering.

Having thus described this invention, what is claimed is:

1. An attaching structure for use in attaching flexible sheet wall covering to a wall surface comprising a bracket-mounting strip adapted to be attached to the wall surface with an exposed face and having transversely opposed longitudinally extending outer and inner edges, a plurality of separate brackets for producing desired contours in the covering and adapted to be attached to the strip at longitudinal intervals therealong, said brackets having transversely opposed inner and outer edges and legs with extremities for contacting with the said strip, said brackets being of less extent transversely than the transverse extent of the strip, interfitting means between the extremities of the legs and the strip for attaching each bracket to the strip, said means comprising mounting lugs extending from the face of the strip and transversely of the strip and arranged in opposed pairs with the lugs of the pairs directed laterally toward each other to provide flange-receiving sockets which open toward each other, laterally extending attaching flanges on the inner extremities of the legs spaced apart a distance substantially equal to the longitudinal spacing of said mounting lugs and extending laterally outwardly in opposite directions, said flanges being spaced apart substantially the same as the opposed mounting lugs on the strip so that when the bracket is moved transversely inwardly of the strip they will slide into said sockets beneath said mounting lugs, stop lugs on the outer ends of said flanges for engaging said mounting lugs to limit transverse inward movement of said bracket, hooks on the brackets for engaging and holding the flexible sheet wall covering and which are directed outwardly toward the stop lugs so that inward pull exerted by the covering.
will move the stop lugs of the brackets into contact with the mounting lugs of the strip.

2. Structure according to claim 1 in which said mounting lugs on the strip are provided in transversely spaced pairs of laterally opposed lugs in the face of the strip at longitudinal intervals, said flanges of each bracket having laterally outwardly opening notches intermediate their inner and outer ends to permit slipping of the flanges over the respective outer pair of said mounting lugs into contact with said face and then transverse movement of the bracket to position the adjacent portions of the flanges beneath the mounting lugs of the transversely spaced pairs on said strip.

3. Structure according to claim 2 in which the mounting lugs of the strip frictionally engage the flanges to press them against the underlying face of the strip to retain them in position on the strip.

4. A wall covering comprising flexible sheet material and means for attaching it to a wall surface, said means comprising upper and lower bracket mounting strips extending along the wall surface and attached thereto, each of said strips having upper and lower edges and an exposed face, a plurality of separate brackets for producing desired contours in the covering attached to each of the strips at longitudinal intervals therealong, said brackets having upper and lower edges and legs with inner extremities for contacting with the strip, said brackets being of less vertical extent than the strips, interfitting means between the inner extremities of the legs and the strip for attaching each bracket to the strip, said means comprising mounting lugs extending outwardly from the face of the strip and vertically of the strip and arranged in opposed pairs with the lugs of the pairs directed horizontally toward each other to provide flange-receiving sockets which open horizontally inwardly toward each other, laterally extending attaching flanges on the inner extremities of the lugs spaced horizontally apart a distance substantially equal to the longitudinal spacing of said lugs and extending horizontally in opposite directions, said flanges being spaced apart horizontally substantially the same as the opposed mounting lugs on the strip so that when the bracket is moved vertically inwardly of the strip they will slide into said sockets beneath said mounting lugs, stop lugs on one of the end of each of said flanges for engaging said mounting lugs to limit vertical movement of said bracket, hooks on the bracket engaging and holding the flexible sheet wall covering and which are directed vertically toward the stop lugs, said mounting lugs of the brackets frictionally engaging the flanges to press them in against the underlying face of the strip to retain them in position on the strip, the brackets on the upper strip having the stop lugs uppermost and the brackets on the lower strip being reversed with the stop lugs lowermost so that vertical pulls exerted by said covering will tend to move the brackets on the upper strip downwardly and the brackets on the lower strip upwardly.

5. The combination of claim 4 in which said mounting lugs on each strip are provided in transversely spaced pairs of laterally opposed lugs on the face of the strip at longitudinal intervals, said flanges of each bracket having laterally outwardly opening notches intermediate their inner and outer ends to permit slipping of the flanges over the respective outer pair of said mounting lugs into contact with said face and then transverse movement of the bracket to position the adjacent portions of the flanges beneath the mounting lugs of the transversely spaced pairs on said strip.

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