United States Patent

Collette et al.

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[45] **Dec. 26, 1972**

[54] **SNAP TRIM MOLDING**

[72] Inventors: **Harold J. Collette,** 15 Chadwick Street; **Harry W. Grosser,** 1309 Forrest Avenue, Ext, both of Jamestown, N.Y. 14701

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[52] **U.S. Cl.** **52/288,** 52/717, 24/81

[51] **Int. Cl.**.....**E04c 2/38,** E04f 19/02

[58] **Field of Search**.....52/287, 288, 716-718, 52/242, 512, 211, 212, 714; 24/257 R, 81 B, 81 BN

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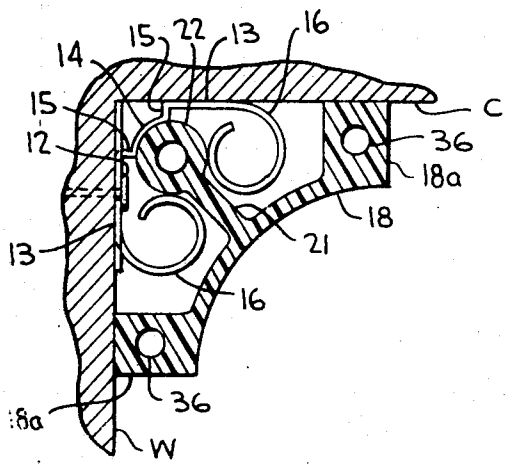
Primary Examiner—Alfred C. Perham

Attorney—Watson, Cole, Grindle & Watson

[57] **ABSTRACT**

A snap trim molding or facing held in place by means of a resilient spring clip having inwardly turned coils and an inner saddle portion for engaging a beaded end of a retainer rib on the molding or facing. Also, corner molding elements for inside and outside corners are held in place by means of dowel pins engaging respective bores in the adjacent molding.

11 Claims, 11 Drawing Figures



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SHEET 1 OF 2

FIG. 1

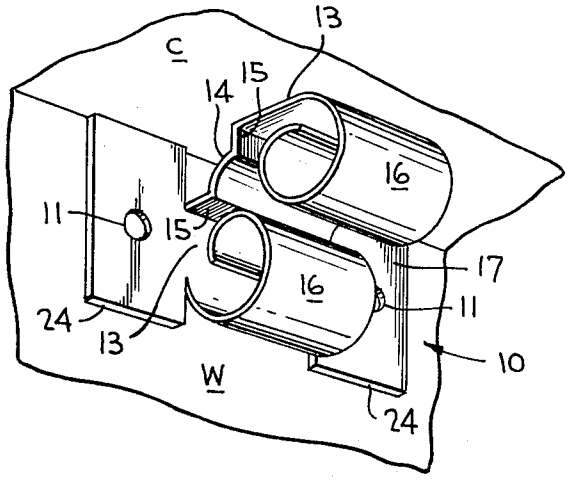


FIG. 2

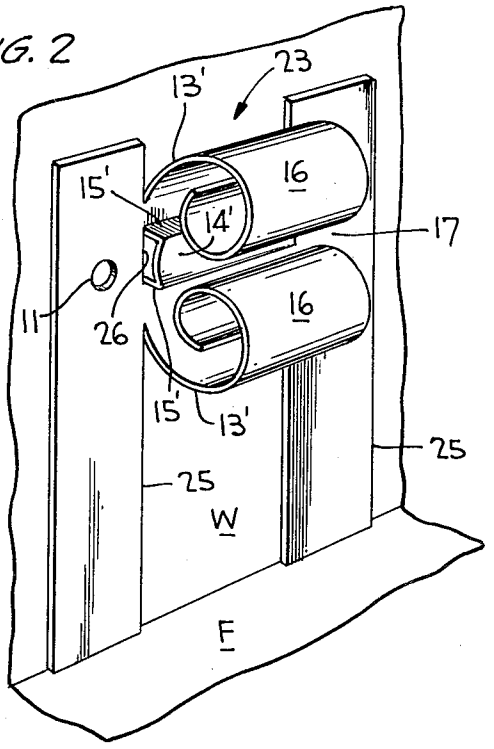


FIG. 3

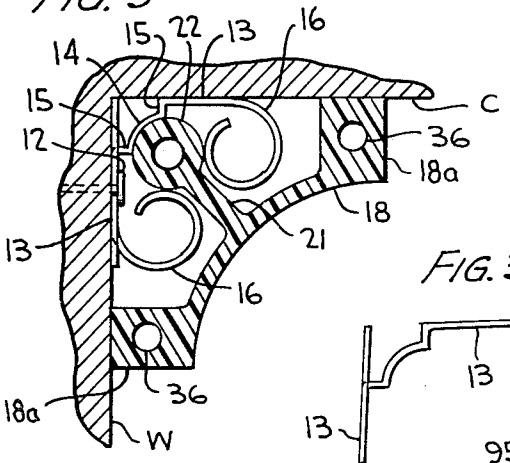


FIG. 3A

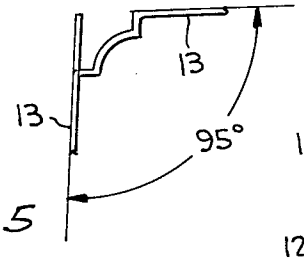


FIG. 4

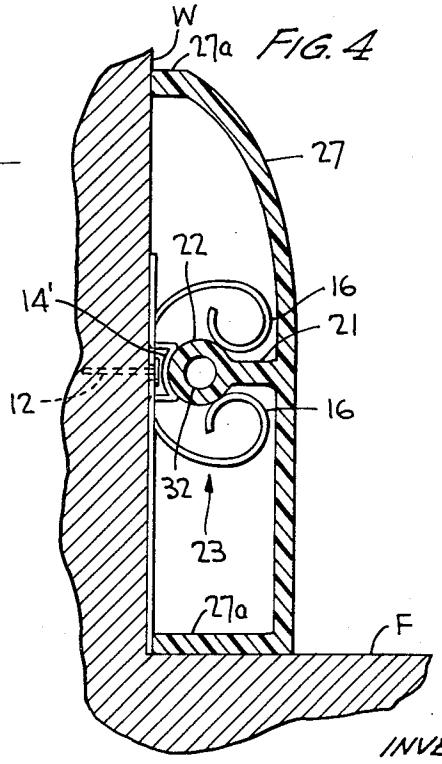
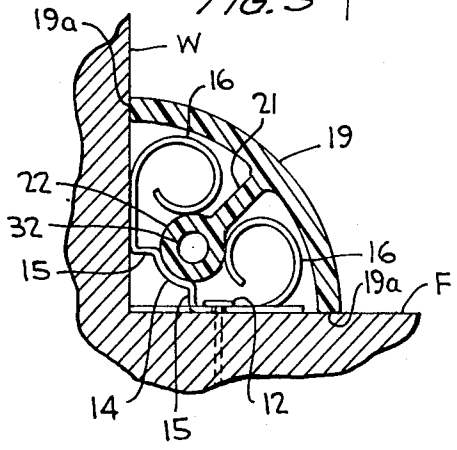


FIG. 5



INVENTORS,
HAROLD J. COLLETTE
HARRY W. GROSSER

BY Watson, Cole, Grindle & Watson
ATTORNEYS

FIG. 6

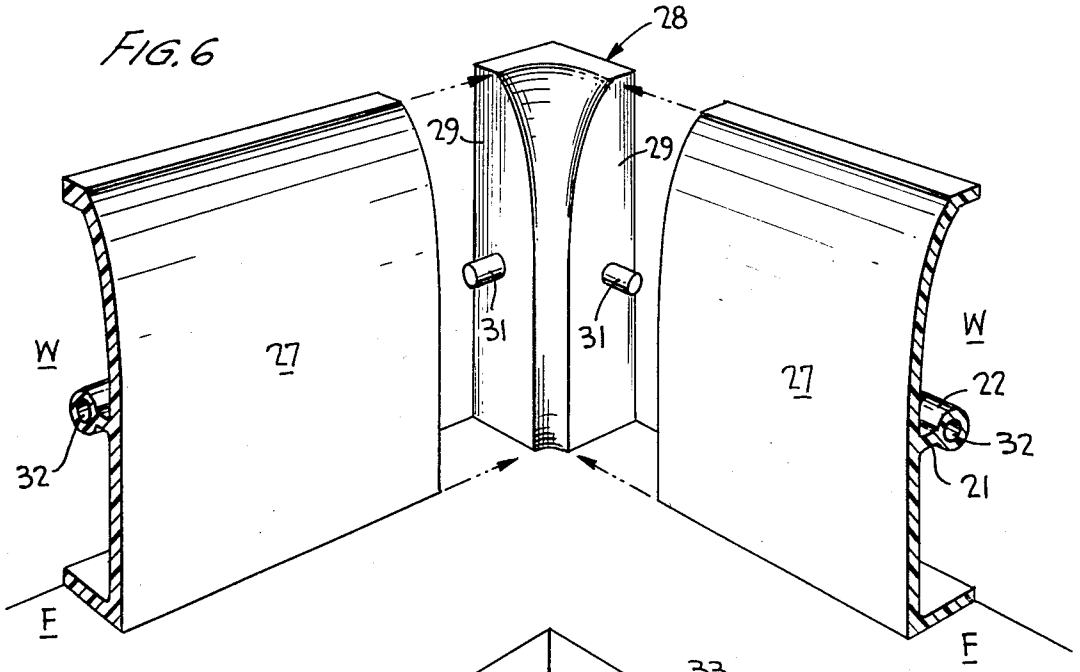


FIG. 7

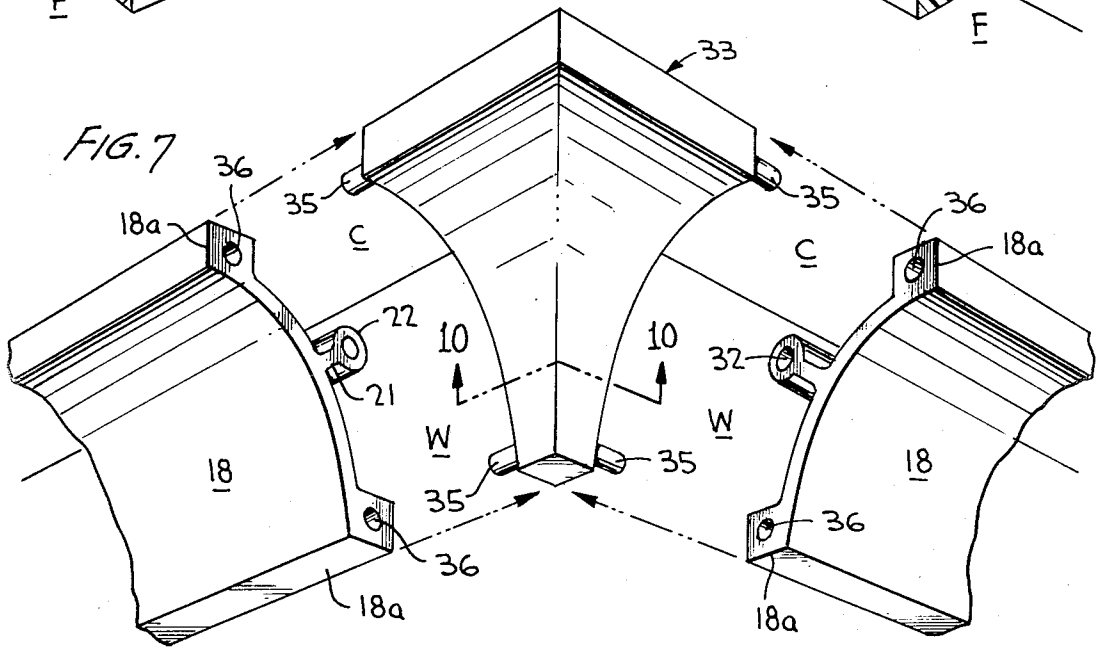


FIG. 8

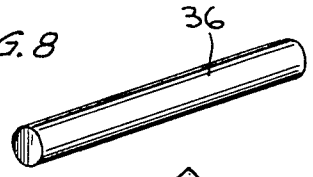


FIG. 9

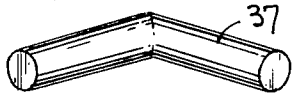
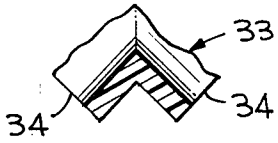


FIG. 10



INVENTORS,
HAROLD J. COLLETTE
HARRY W. GROSSER
BY Watson, Cole, Grindle & Watson
ATTORNEYS

SNAP TRIM MOLDING

This invention relates generally to molding assemblies and more particularly to baseboard and cove moldings, siding, trim, etc., and means for retaining them assembled in place.

Installation of various types of moldings, especially in the building arts, has become increasingly more costly from the standpoint of both labor and materials in general and, more specifically, due to the many additional finishing operations which must be attended to before any given job is completed. For example, if wooden cove and baseboard moldings are used, they must be cut and properly mitered at their ends after which they must be nailed in place and their nail holes spackled or filled in. Sometimes these moldings are warped before installation or they shrink or expand after assembly so that unsightly gaps appear along the wall and at the mitered joints thereby detracting immensely from an otherwise neat appearance. Moreover, molding materials are wasted because of breakage, warping, knots, etc., and the moldings are not easily removable for redecoration, nor can they be quickly painted or varnished without consuming precious labor time. Installation is generally slow, while rotting and termite problems may require early replacement, which only, of course, adds to the cost.

Extrudable moldings of plastic or other non-wooden materials are therefore beginning to replace the conventional wooden moldings although these substitute moldings are not without their significant drawbacks. For example, such moldings are not readily removable after installation so that for any recarpeting or re-flooring job the baseboard is not reusable after it is removed, especially if it must be mutilated during removal. Besides, the fastening or retainer means used to hold these moldings in place must normally be relocated on the wall after the installation of a different flooring thickness, and special fasteners must be used, or nails for retaining the moldings in place must be carefully inserted, in order to adequately secure the moldings in place. Most importantly, cold-flow deformation of these extrudable moldings in the vicinity of the fasteners or retainers shows up in the form of cracks or depressions so that not only the useful life of the moldings is greatly reduced but its appearance is affected as gaps and separations arise along the wall and at the corners. In addition, cold-flow deformation of this type of molding may cause loosening to such an extent that rattling of the moldings may occur.

The present invention obviates these many drawbacks present in the prior art moldings and molding-installation techniques by providing an extrudable molding of plastic or other extrudable material secured firmly in place with the use of resilient spring clips easily nailed in place so that no filling of nail holes for the molding, or painting thereover, is required. Baseboard, cove, siding, trim and other type moldings may be easily extruded to have standardized dimensions in accordance with the woodworking industry so that dimensional uniformity will be possible for the first time. Such moldings will be suitable for outdoor applications since they are weatherproof and termite proof, and may be extruded to any length to satisfy the needs of the production builders. All edges of the molding surfaces in contact with the walls, ceilings and floors

may be feathered so that irregularities in surfaces will not show visible departure from walls, floors or ceilings. Moreover, the presently designed moldings are hollow to an extent that electrical wiring may be easily accommodated behind the baseboards since no nailing thereof is required. Also, injection-molded corner pieces have been devised for perfect alignment of the moldings at inside and outside corners thereby avoiding the need for mitered joints. Moreover, a retainer clip has been designed for easy installation and a snap-in assembly of the moldings in such a way as to substantially avoid cold-flow deformation at the molding surfaces.

To achieve these objectives, the present molding assembly comprises a retainer clip and a molding strip, the clip having a pair of outwardly extending spaced legs which are inwardly turned at their ends defining coils and further having an inner saddle portion disposed between the legs, the molding strip including a web having a beaded portion at its free end for maintaining the strip against the wall as the beaded portion is engaged by the coils and is seated against the saddle portion so as to present a three-point contact between the clip and the strip whereby any distortion of the strip after it is assembled is substantially avoided.

Another object of the present invention is to provide such a molding assembly wherein the molding strip may be easily snapped into place and thereby easily removed by reason of the retainee clip coils, the clip saddle portion being concave to thereby snugly accommodate the seating of the molding strip beaded portion.

A further object of the present invention is to provide such a molding assembly wherein the clip legs are disposed about **95** degrees apart before installation so that they are made to lie flatly against an inner corner upon assembly, the coils thereby serving alone to urge the beaded portion against the saddle portion so as to substantially reduce any strain in the molding material at its outer surface.

A still further object of this invention is to provide such a molding assembly wherein the means for mounting the retainer clips in place is formed integrally with one of the clip legs.

A still further object of this invention is to provide such a molding assembly wherein the mounting means for the clip is a plate of some predetermined length to thereby position the clip along the wall at some predetermined location from the floor.

A still further object of this invention is to provide such a molding assembly wherein a corner molding element is provided having dowel pins along perpendicularly related surfaces thereof, the pins mating with suitably provided bores in the molding strips or strips.

A still further object of this invention is to provide such a molding assembly wherein such bores are defined by a hollow beaded portion extending throughout the length of the molding strip whereby the strip may be cut along any portion of its length without destroying the effectiveness of such bore.

A still further object of this invention is to provide such a molding assembly wherein the corner element is designed to accommodate either an inside or an outside corner.

A still further object of the present invention is to provide such a molding assembly wherein individual

dowel pins are provided for aligning molding strips end-to-end by being conveniently inserted within adjacent bores of such strips.

Other objects, advantages and novel features of the present invention will become apparent from the following detailed description of the invention when considered in conjunction with the accompanying drawings wherein:

FIG. 1 is a perspective view of a resilient spring clip shown mounted on a wall against a ceiling, in accordance with the present invention;

FIG. 2 is a perspective view of a resilient spring clip mounted on a wall near the floor, in accordance with the present invention;

FIG. 3 is a sectional view showing a cove molding snapped in place with the use of a resilient spring clip of the type shown in FIG. 1;

FIG. 3A is a partial side view of the spring clip of FIG. 1 emphasizing the angular disposition of the spring legs;

FIG. 4 is a sectional view of a baseboard molding shown snapped in place by means of a spring clip of the type shown in FIG. 2;

FIG. 5 is a sectional view of a quarter-round type molding shown snapped in place by means of a spring clip shown in FIG. 1;

FIG. 6 is a perspective exploded view of a pair of baseboard moldings and an inner corner element to be assembled therewith in accordance with the present invention;

FIG. 7 is a perspective exploded view of a pair of cove moldings and an outside corner element to be assembled therewith;

FIG. 8 is a perspective view of an individual dowel pin for aligning a pair of molding strips end-to-end;

FIG. 9 is a perspective view of an individual dowel pin for aligning a pair of molding strips at a corner; and

FIG. 10 is a sectional view of the outside corner element taken along the line 10—10 of FIG. 7.

Turning now to the drawings wherein like reference characters refer to like and corresponding parts throughout the several views, there is shown in FIG. 1 a resilient spring clip 10 having nail holes 11 to facilitate mounting of the clip by means of nails 12 to a wall W in abutment with the ceiling C. The spring clip 10 is made of metal, plastic, or some other suitable material designed as having a pair of legs 13 extending outwardly and separated by an angle of about 95 degrees in its relaxed condition (see FIG. 3A) and joined by a concave saddle portion 14 having a pair of short flanges 15 integrally connected therewith. At the free ends of each leg 13, inwardly turned end portions 16 are provided spaced a slight distance apart as shown at 17, the inwardly turned ends defining coils for the clip.

In FIG. 3 it can be clearly seen that legs 13 of the clip are made to lie fully in contact with the wall W and the ceiling C, after being secured in place, inasmuch as the legs 13 are spaced apart slightly greater than 90 degrees, i.e., the angle between the wall W and the ceiling C. In this way, the legs 13 of the clip are bowed slightly toward one another after installation and are made to lie flatly against the wall and the ceiling or, as shown in FIG. 5 of the drawings, against the wall and the floor F.

After any number of resilient spring clips 10 are secured in place along the wall-ceiling corner or along the wall-floor corner, a cove molding strip 18 or a quarter-round molding strip 19 of any predetermined length may be simply snapped into place. These moldings are similar except for their outward configuration in that they are each provided with an integral, inwardly extending retaining web 21 having at its free end an integral beaded portion 22. It can be therefore seen that the molding strips may be conveniently snapped in place simply by inserting the beaded portion 22 into space 17 between the coils of the clip so as to be retained and snugly embraced thereby as the free end of the bead is seated against the concave saddle portion 14 and urged thereagainst by means of coils 16 pressing against opposite sides of the bead near the web 21. In this way a three-point contact is established between the clip and the strip, thereby substantially eliminating any strain between the two members. Although the bead is constantly urged inwardly the molding is not placed under any undue strain since the web 21 is of a sufficient length as to permit the portions 18*a* of molding 18 (on the portions 19*a* of molding 19) to lie against the wall and ceiling or wall and floor without causing any molding deformation along its outer surface. Consequently, the possibility of any cracks or depressions arising along the surface of the molding is substantially minimized. Moreover, since the coils are never in contact with the web, but only with the beaded portion, any likelihood for the bead unseating itself from the saddle portion is avoided. The full and flat engagement by each leg 13 with each wall at the corner permits the holding force of the clip to be derived solely from the rolling action of the coils. Accordingly, an inward pulling force on the bead will be constantly exerted by the coils to seat it against the concave saddle portion. Moreover, the wholly flat engagement between the legs 13 and the walls positively positions the spring clip at the wall-ceiling corner or at the wall-floor corner whereby the spread between clip legs 13 is always 90 degrees apart, thereby avoiding the possibility of any distortion or movement of this angle.

The spring clip 23 shown in FIG. 2 of the drawings is similar in many respects to the spring clip 10 but is provided for baseboard or similar molding applications as having a pair of elongated flanges 25, each with a nail hole 11 provided therein to accommodate a conventional nail 12, the length of flanges 12 being determined by the desired location for the spring clip 23 from the floor F. In this way, any number of spring clips 23 may be secured to the wall W with the ends of flanges 25 abutting the top of floor F without the possibility of any misalignment of the baseboard molding which is easily snapped in place. Instead of being flat, legs 13′ of clip 23 are slightly arcuate, while concave saddle portion 14′ is likewise disposed behind spacing 17 between coils 16. Saddle portion 14′ is provided with integral flange legs 15′ so that the concave saddle portion 14′ and its flange legs 15′ may constitute a separate element which is spring biassed in place within a cutout portion 26 or otherwise struck from the main body portion of the spring clip 23.

As can be clearly seen in FIG. 4 of the drawings, a baseboard 27 may be conveniently snapped in place by means of a plurality of spring clips 23, the baseboard

having an integral web **21** terminating in a beaded portion **22** similar in all respects to the web and beaded portion described for cove molding **18** and quarter-round molding **19**. In this embodiment the beaded portion is snapped in place between the spacing **17** until it comes to rest against the concave saddle portion **14'**. Coils **16** of the spring clip **23** function in the identical manner as described with respect to the embodiments of FIGS. **3** and **5** in that each coil contacts only the beaded portion **22** thereby establishing a three-point contact between the beaded portion and the spring clip. Again, the coils **16** are out of contact with web **21** so as to always exert an inward pulling force on the bead. As before, any cold-flow deformation of the exterior of the baseboard is substantially minimized by reason of the three-point contact and the length of web **21** which is selected to permit the end portions **27***a* of the baseboard to rest snugly against the wall and floor without any distortion of the baseboard.

In accordance with another aspect of the present invention, reference is made to FIG. **6** of the drawings wherein an exploded perspective view of a pair of baseboards **27** is shown before being assembled in place with a floating corner molding element **28** designed for an inside corner between inside walls W, as clearly shown. Although spring clips **23** are not shown in this figure, it should be understood that any number of such clips are first secured in place along each wall W after which each baseboard **27** may be snapped in place and slid in a direction toward the corner molding element **28**. The corner molding element may be produced by injection molding from plastic, for example, and is designed specifically to avoid the need for mitering the ends of baseboards **27** as would normally be necessary for a corner joint of this type. In order to assure a perfect alignment between corner molding element **28** and each baseboard **27**, the molding element is provided with perpendicularly related surfaces **29**, each substantially parallel to each adjacent end of the baseboards **27**. Dowel pins **31** are provided on each surface **29** of the corner molding element to be received within hollow bore **32** provided within beaded portion **22**. In this way, members **27** and **28** may be conveniently assembled in perfect alignment and, since bore **32** extends throughout the length of baseboards **27**, the baseboard may be transversely cut to any predetermined length so that the bore **32** will always be exposed to the dowel pin **31**. Therefore, if the length of baseboard **27** exceeds the distance between one of surfaces **29** and another of such surfaces on a corner molding element in an opposite corner on the same wall W, the baseboard **27** may be conveniently cut in a transverse direction while preserving the exposure of bore **32** at each end of the baseboard since it extends throughout the baseboard's entire extent.

FIG. **7** illustrates a type of outside corner arrangement for cove moldings **18** which are each secured in place by means of spring clips **10** (not shown) secured along the walls W after which moldings **18** may be snapped in place for cooperation with a floating outside corner molding element **33**. This corner molding element is, of course, designed to conform to the shape of each cove mold at an outside corner and therefore serves to avoid the need for any mitering of the cove mold ends as would otherwise be the case. The corner mold **33** is provided with perpendicularly relates surfaces **34** (see FIG. **10**) on each of which dowel pins **35** are provided to be received within suitably provided bores **36**, each extending along the entire length of each cove molding through thickened portions **18***a* thereof. In addition, another dowel pin **35** may be provided on each surface **34** of the corner mold to be received within bore **32**, if so desired. In this way, perfect alignment is insured between each cove molding and the outside corner molding element **33** and, as described with respect to the FIG. **6** embodiment, each cove molding may be transversely cut to some desired length while still maintaining each bore **36** in tact at each end of the cove molding for cooperation with dowel pins **35**.

If the lengthwise direction of the wall to be trimmed is greater than the length of the available cove, baseboard, or quarter-round moldings, such moldings may be conveniently aligned end-to-end with the use of individual dowel pins **36**, shown slightly enlarged in FIG. **8**, in a manner whereby opposite ends of dowel **36** are simply inserted within adjacent bores **32** of the moldings to be aligned or within adjacent bores **36**. On the other hand, if it is desired to avoid the use of corner molding elements such as **28** and **33**, the ends of the moldings at such corners may simply be mitered and maintained in perfect alignment by means of an individual dowel pin **37**, shown in FIG. **9**. In this case, the opposite ends of dowel pin **37** will be received within adjacent bores **32** or **36**.

It should be noted that the various types of moldings disclosed herein may be made of extrudable plastic or extrudable aluminum material, the moldings being designed for use not only in buildings wherein they may be used as sidings, casings, trim strips, etc., but the moldings may be used as well on furniture and marine applications in accordance with the present invention. Also, the resilient spring clips may be of spring metal or plastic.

From the foregoing, it can be seen that a highly effective molding assembly has been devised making use of resilient spring clips in such a manner as to avoid the many difficulties found in the prior art. For example, the spring clips alone may be secured to the wall after which the molding strips are simply snapped in place. As a result, no mutilation of the strips can occur from nailing or from a setting of nails and loss of material is held to a minimum since the molding strips may be precut to standard dimensions set up by the industry. Since the strips are of extruded plastic, or other similar extruded material, they are weatherproof, termiteproof, and are readily suitable for indoor as well as any of the outdoor applications for molding. Besides, the molding strips will not shrink or warp, are lightweight, afford easy handling and low shipping charges, and may be made available in pre-finished wood grains and paintable surfaces. The molding strips may be quickly installed without the need for mitering at the corners in that "floating corner" molding elements are simply used and are precisely aligned with the molding strips at the corners. Electrical wiring may be disposed in the spaces behind the baseboards since there are no exposed nails within such spaces which would prohibit such a location for the wiring.

The molding strips are securely and uniquely held in place by means of a three-point contact with the spring clips, thereby significantly avoiding the possibility of cracks and indentations from a cold-flow deformation normally caused by spring clips of the prior art type. The molding strips may be easily removed for redecorating and recarpeting operations and, although not shown in the drawings, all edges of the molding surfaces which contact the wall, ceiling and floor, and which contact other molding strips end-to-end, and which contact the corner molding elements, may be conveniently feathered so that any irregularities in these surfaces will not show a visible departure therefrom.

Obviously, many modifications and variations of the present invention are possible in the light of the above teachings. It is therefore to be understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described.

What is claimed is:

1. A molding assembly comprising the combination of a resilient retainer clip and a molding strip;

said clip having means for being mounted to a wall, a pair of outwardly extending spaced legs having inwardly turned ends defining coils and an inner saddle portion disposed between said legs;

said molding strip including a web having a beaded portion at its free end for maintaining said strip in place against the wall;

said beaded portion being engaged near said web by said coils and being seated against said saddle portion, thereby presenting a three-point contact between said clip and said strip as said coils urge said bead against said saddle portion, and said web being of such a length as to permit said strip to rest lightly against the wall, whereby any distortion after assembly of said strip is substantially avoided.

2. The molding assembly according to claim 1 wherein said retainer clip saddle portion is concave to thereby snugly accommodate the seating of said molding strip beaded portion.

3. The molding assembly according to claim 1 wherein said clip legs are separated by an angle slightly in excess of 90° whereby they may be made to lie flatly against an inner corner upon assembly, said coils thereby serving alone to urge said beaded portion against said saddle portion after assembly.

4. The molding assembly according to claim 1 wherein said mounting means are integral with one of said legs extending outwardly of at least one side thereof.

5. The molding assembly according to claim 4 wherein said mounting means comprises a flange plate of a predetermined length to position said retainer clip along the wall at a predetermined location from a floor.

6. The molding assembly according to claim 1 further including a corner molding element having a dowel pin extending outwardly therefrom, said molding strip having a bore therein for the reception of said dowel pin during assembly whereby said molding strip serves to maintain said corner element in place.

7. The molding assembly according to claim 6 wherein said bore extends throughout the entire length of said molding strip whereby said strip may be reduced to some predetermined length while still preserving the effectiveness of said bore.

8. The molding assembly according to claim 7 wherein said beaded portion is hollow thereby defining said bore.

9. The molding assembly according to claim 7 wherein individual dowel pins are provided to be received within adjacent bores for aligning a pair of said molding strips together.

10. The molding assembly according to claim 9 wherein said corner molding element is designed to accommodate an inside corner.

11. The molding assembly according to claim 9 wherein said corner molding element is designed to accommodate an outside corner.

* * * * *