A spring clip for use in a building panel structure which includes a series of elongated sheet metal strips or slats arranged substantially side by side in parallel, spaced apart relation to each other with their adjacent edges overlapping to a greater or lesser degree, and a pair of elongated supporting members arranged transversely of the slats and supporting them at their ends, the slats being characterized by their inherent spring tension and having their longitudinal edges rolled substantially 180°, on the same side of the slab, a plurality of the spring clips of the invention being arranged on each of the supporting members, at longitudinally spaced intervals, for engagement by the rolled longitudinal edges of the slats whereby the slats are attached to the supporting members.

In one form thereof the spring clip of the invention comprises a shaped element consisting of a strip of sheet metal, characterized by its inherent spring tension, which is bowed intermediate its ends and has its opposite end portions, which are spaced progressively farther apart in a longitudinal direction, rolled outwardly in opposite directions substantially 180°. The material of the spring clip is bent at obtuse angles intermediate its ends to form two end portions, one of which is longer than the other, which are inclined in varying degree relative to the middle portion, the longer of the end portions being almost perpendicular to the middle portion. In the arrangement described the individual slats are supported on the supporting members in an inclined plane relative to the plane of the supporting members.

1 Claim, 4 Drawing Figures
BUILDING PANEL STRUCTURE

This invention relates to a building panel structure, and it concerns more particularly a novel spring clip for use in a building panel structure which includes a series of elongated sheet metal strips or slats arranged substantially side by side in parallel, spaced apart relation to each other with their adjacent edges overlapping to a greater or lesser degree, and a pair of elongated supporting members arranged transversely of the slats and supporting them at their ends, the slats being characterized by their inherent spring tension and having their longitudinal edges rolled substantially 180°, on the same side of the slat.

The spring clip of the invention, a plurality of which are arranged on each of the supporting members, at longitudinally spaced intervals, for engagement by the rolled longitudinal edges of the slats whereby the slats are attached to the supporting members, in one form thereof comprises a shaped element consisting of a strip of sheet metal, characterized by its inherent spring tension, which is bowed intermediate its ends and has its opposite end portions, which are spread progressively further apart in a longitudinal direction, rolled outwardly in opposite directions substantially 180°.

The material of the spring clip is bent at obtuse angles intermediate its ends to form two end portions, one of which is longer than the other, which are inclined in varying degree relative to the middle portion, the longer of the end portions being almost perpendicular to the middle portion.

In the relaxed position of the spring clip the rolled end portions thereof are spread apart a greater distance than the distance between the rolled longitudinal edges of the slats, and the arrangement is such that the rolled end portions of the spring clip may be compressed, as by drawing them together manually, against the resistance which is generated by the inherent spring tension of the material, preparatory to attaching a slat to the corresponding spring clip, and the slat is positively secured against displacement relative to the spring clip by the inherent spring tension of the spring clip.

In the arrangement described the individual slats are supported on the supporting members in an inclined plane relative to the plane of the supporting members.

The invention is an improvement over an arrangement, now in commercial use, in which the supporting members are channel shaped in transverse section and the two opposite sides of the channel, which are arranged in opposing relation to the under side of the several slats, have their longitudinal edges shaped to conform to the contour of the slats. In this arrangement the rolled longitudinal edges of the slats must be spread apart as necessary to attach the end portions of the slats to the supporting members, and the slats are positively secured against displacement relative to the supporting members by the inherent spring tension of the slats.

The invention will be readily understood by referring to the following description and the accompanying drawing, in which:

FIG. 1 is a fragmentary view showing a building panel embodying the invention, which may be arranged either vertically or horizontally, or in an inclined plane, showing the elongated sheet metal strips or slats arranged in substantially side by side relation to each other with their adjacent edges overlapping to a greater or lesser degree, and supported at their ends and intermediate their ends on elongated supporting members arranged transversely of the slats, and showing the spring clips on the supporting members for engagement by the rolled longitudinal edges of the slats whereby the slats are attached to the supporting members;

FIG. 2 is a fragmentary view on an enlarged scale taken on the line 2—2 of FIG. 1, showing one of the supporting members and three of the spring clips thereof, showing two of the slats, in transverse section, with their rolled longitudinal edges in operative engagement with the corresponding spring clips, and showing one of the spring clips in its relaxed position before attachment of the slat thereto;

FIG. 3 is a perspective view showing one of the spring clips in its detached position; and

FIG. 4 is a view similar to FIG. 2, showing the invention as applied to an awning or the like in which the panel is arranged in an inclined plane, and showing one of the slats, in transverse section, in juxtaposed position relative to the corresponding spring clip, before attaching the slat to the clip.

Referring to FIG. 1 of the drawing, a building panel, designated generally by the numeral 10, is shown which may be arranged either vertically or horizontally, as in a wall or a roof, or in an inclined plane, as in an awning.

The panel 10 includes a series of elongated sheet metal strips or slats as hereinafter described, indicated generally by the numeral 20, which are arranged substantially side by side in parallel, spaced apart relation to each other with their adjacent edges overlapping to a greater or lesser degree.

The slats 20 are supported at their ends and intermediate their ends on elongated supporting members, indicated by the numeral 30, which are arranged transversely of the slats 20.

The slats 20, which are characterized by their inherent spring tension, have their longitudinal edges rolled substantially 180°, on the same side of the slat, as at 21, FIGS. 2 and 4.

A plurality of spring clips as hereinafter described, indicated generally by the numeral 40, are arranged on the supporting members 30, at longitudinally spaced intervals, for engagement by the rolled longitudinal edges 21 of the slats 20, as shown in FIGS. 2 and 4, whereby the slats 20 are attached to the supporting members 30.

The spring clip 40, shown in its detached position in FIG. 3, is a shaped element which in one form thereof advantageously may be formed of a strip of sheet metal characterized by its inherent spring tension. Alternatively, the spring clip 40 may be formed of molded plastic material.

The spring tensioned strip material which comprises the spring clip 40 is bowed intermediate its ends and has its opposite end portions, which are spread progressively farther apart in a longitudinal direction, rolled outwardly in opposite directions, as at 41, substantially 180°.

As shown the strip material which comprises the spring clip 40 is bent at obtuse angles intermediate its ends to form two end portions, one of which is longer than the other, which are inclined in varying degree relative to the middle portion, the longer of the end portions being almost perpendicular to the middle portion.
In the relaxed position of the spring clip 40, shown in FIGS. 2 and 4, the rolled end portions 41 thereof are spread apart a greater distance than the distance between the rolled longitudinal edges 21 of the slats 20.

In the arrangement shown the rolled end portions 41 of the spring clip 40 may be compressed, as by drawing them together manually, against the resistance which is generated by the inherent spring tension of the material, preparatory to attaching a slat 20 to the corresponding spring clip 40, and the slat 20 is positively secured against displacement relative to the spring clip 40 by the inherent spring tension of the spring clip 40.

As illustrated the individual slats 20 are supported on the supporting members 30 in an inclined plane relative to the plane of the supporting members 30.

Each of the spring clips 40 has a pair of longitudinally aligned holes 50 in its middle portion for engagement by fastening devices such as the screws 51 whereby the spring clips 40 are secured to the supporting members 30. As shown in FIGS. 2 and 4 the supporting members 30 may be formed of wood and metal, respectively. The numeral 60, in FIG. 4, indicates a horizontal brace for the supporting member 30.

We claim:

1. In a building panel structure which includes a series of elongated sheet metal strips or slats arranged substantially side by side in parallel, spaced apart relative to each other with their adjacent edges overlapping to a greater or lesser degree, and a pair of elongated supporting members arranged transversely of the slats and supporting them at their ends, the slats being characterized by their inherent spring tension and having their longitudinal edges rolled substantially 180°, on the same side of the slat, the improvement which comprises a plurality of spring clips arranged on the supporting members, at longitudinally spaced intervals, for engagement by the rolled longitudinal edges of the slats whereby the slats are attached to the supporting members, the spring clips each comprising a shaped element consisting of a strip of sheet metal, characterized by its inherent spring tension, which is bowed intermediate its ends and has its opposite end portions, which are spread progressively farther apart in a longitudinal direction, rolled outwardly in opposite directions substantially 180°, the material of the spring clip being bent at obtuse angles intermediate its ends to form two end portions, one of which is longer than the other, which are inclined in varying degree relative to the middle portion, the longer of the end portions being almost perpendicular to the middle portion, and the rolled end portions of the spring clip being spread apart a greater distance than the distance between the rolled longitudinal edges of the slats, in the relaxed position of the spring clip.

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