APPARATUS AND METHOD OF INSTALLING A SPLINE IN A CEILING BOARD JOINT

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References Cited

UNITED STATES PATENTS

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2,650,395 9/1953 De Anguera 52/586

2,736,088 2/1956 Thygeson 52/749 X

3,075,253 1/1963 Hammond et al. 52/241

3,100,319 8/1963 Carlson 52/471

3,359,620 12/1967 Hunter 29/235

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ABSTRACT

A plurality of ceiling boards are held in position by splines stapled to a backing. Removal of a damaged board is complicated by the replacing of the spline which is inserted into a kerf in two adjacent boards. The replacement is accomplished by the use of a narrow spline which fully fits in the kerf of one board and, after the boards are in place, a special tool is used to slide the spline from the kerf of one board to a position where it is positioned with one-half of its width in the kerf of each adjacent board. Staples may now be passed through the spline to hold the boards in position.

2 Claims, 5 Drawing Figures
APPARATUS AND METHOD OF INSTALLING A SPLINE IN A CEILING BOARD JOINT

CROSS-REFERENCE TO RELATED APPLICATION

The invention herein is an improvement over the "Spline Joint for Ceiling Boards" application, Ser. No. 788,290, filed Dec. 31, 1968.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The invention herein is related to a technique for replacing damaged ceiling boards and, more particularly, to a tool and technique for replacing ceiling boards which have a kerf joint structure.

2. Description of the Prior Art

U.S. Pat. No. 3,075,253 shows it is old to use a spline joint to hold together partitioned sections of a wall structure. The splines are made to shift from within the kerf structure of one panel to an area partially within the kerfs of two adjacent panels. The shifting is carried out by the use of bolts which are fastened to the splines.

U.S. Pat. No. 3,100,319 shows an alternative method for shifting splines in a ceiling system wherein a short spline is used and slid longitudinally to selected positions along a joint structure.

U.S. Pat. No. 2,330,023 discloses a tool which is used to apply weatherstripping to closure members. The particular tool is related in structure generally to the tool herein except that it lacks the tapered surface for the sideward sliding of an element within a kerf structure.

The invention herein deals with a novel tool for positioning a spline within two adjacent kerfs in a previously assembled ceiling structure. The invention further deals with the particular technique utilized for the proper positioning of the spline within the adjacent kerfs so that the spline may be used to hold the ceiling boards, wallboards or like panels in position.

SUMMARY OF THE INVENTION

The ceiling system of the above-mentioned copending application is composed of a plurality of boards which are held in position by stapled splines which are positioned in the kerfs of two adjacent boards. If a board is damaged, the board may be readily removed by being cut and then the splines are removed from the kerfs of adjacent boards. A new board may be installed on one of its edges in the conventional manner with a regular size spline. However, since the opposite edge of the board is in an abutting relationship with its adjacent board, it would be very difficult to get a spline in position since the spline has only half of its width capable of being inserted into the kerf of one board. Therefore, a spline is cut to approximately the depth of the kerf and is inserted into one of the kerfs at the repair joint or the last joint to be secured in position. With the spline being installed in this manner, there is nothing to restrict the edges of the boards from coming together or from being pushed into position against the ceiling rafter. With the use of the tool defined herein, the spline is moved across the joint and partially into the kerf of the adjoining board. Ideally both edges of the replacement board will use the narrow spline placement technique herein.

The tool is designed to be pulled along the joint between the two boards and, at the same time, slide against the inner edge of the spline and force the spline partially out of its one kerf so that it spans the gap between the two boards and is partially inserted into the kerf of the adjacent board. Staples may now be passed through the spline and will hold both boards in position. The special tool has a rack-type structure which causes the spline to slide sidewardly partially out of the one kerf and partially into the adjacent kerf.

BRIEF DESCRIPTION OF THE DRAWING

FIG. I is a top view of the tool utilized herein;
FIG. II is a front plan view of the tool utilized herein;
FIG. III is a front plan view of a ceiling joint with the spline partially installed therein;
FIG. IV is a cross-sectional view of FIG. III along line III—III;
FIG. V is a view of a modified tool and spline.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIGS. I and II, there will be seen an illustration of the tool utilized herein. The tool has a handle portion 2 which is capable of slipping in between the normal one-sixteenth inch to one-eighth inch spacing which exists between adjacent ceiling boards. The upper end of the tool is formed with a generally J-shaped configuration 4, the J resting on its long side. The height of the J-shaped configuration is approximately that of the height of a kerf in a board so that the side resting J configuration can slip into the kerf of a board. As best seen in FIG. I, the bottom 6 of the J-shaped configuration is formed with a ramp structure 8. Referring to FIG. I, the distance from the handle 2 to the beginning 10 of the ramp 8 is approximately the depth of a kerf in a board. Therefore, the beginning 10 of the ramp 8 will be able to engage the edge of a spline which is positioned fully in one board structure. The sliding of the tool parallel to the edge of the board which will be along the longitudinal length of the spline will cause the inner edge of the spline to ride along the ramp 8, and this will push the spline in a traverse direction partly out of the kerf of one board so that the outer edge of the spline will now slide into the kerf structure of an adjacent board (See FIG. III). It is obvious that the side 9 of the J construction could be eliminated and an L construction used.

Referring to FIG. IV, there can best be seen the relative size relationship of the tool relative to the kerf structure 12 of a ceiling board 14. The tool handle 2 slips between the spacing between the two adjacent boards 14 and 16. The kerf 12 of one board is in alignment with the kerf 13 of the adjacent board. The width of the spline 18 is such that it would normally fit fully within the kerf of one board. The spline is made slightly shorter than the overall length of the board so that there is a spacing at one end of the board into which the tool may initially be inserted. The tool is then slid down along the joint between the two boards, and leading edge 10 of the ramp 8 of the tool will initially engage the inner edge 20 of the narrow row spline 18. The inner edge 20 would be closely adjacent to the inner edge 22 of the kerf. The inner edge 20 of the spline rides up the ramp 8 of the tool, and this causes the outer edge 24 of the spline to move across the gap between the boards and into the kerf 13 of the adjacent board. The end 26 of the ramp 8 is so positioned that the spline is placed with approximately one-half of its width in each of the two adjacent kerfs 12 and 13. The tool is slid down the full length of the joint, and this results in the full shifting of the spline into a position partially situated in both kerf structures.

Now staples may be passed through the splines fastening the ceiling board into position. The spline, being slightly shorter than the total length of the joint, the tool may now readily be removed from the far end of the joint structure. It should be noted the relative sizes of the different elements are distorted in the drawing for clarity of their showing.

FIG. V is a modified tool and spline structure. The tool 28 has its bottom 6' without an inclined ramp. The ramp 8' is parallel to the direction the tool moves, and it is the spline 18' which has the inclined surface 30 which is necessary for the shifting of the spline. The above structure is used the same way as the structure of FIGS. I-IV. The difference therebetween being in the location of the inclined surface which causes the side shifting of the spline.

What is claimed is:
1. The method of installing a spline in the joint structure of ceiling boards wherein the two adjacent edges of the ceiling boards have kerfs cut therein and into which the spline must be positioned partly in each kerf so that staples may be passed between the two boards through the spline into a structure be-
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3. Hind the ceiling boards to hold the ceiling boards in position; the steps of: positioning the opposite sides of two ceiling boards in position so that adjacent edges of the two ceiling boards are closely positioned together a distance substantially less than that of the width of a spline, inserting a spline fully into the kerf of one of the adjacent boards, pushing the adjacent boards into position with their edges closely related thereto with the spacing therebetween substantially less than the width of the spline, inserting a means adjacent the innermost edge of the spline within the one kerf, moving this means longitudinally along the spline to shift the spline partially out of the one kerf structure it was originally placed in and partially into the adjacent kerf structure so that the spline now is spanning the spacing between the two boards and partially positioned in both kerf structures of the adjacent boards, and fastening the spline in position to hold the boards in position.

4. A tool for positioning a spline in the kerf structures of two adjacent ceiling boards, said tool comprising: a handle portion, positioned on the end of the handle is a generally J-shaped structure, the long side of the J-shaped structure being substantially perpendicular to the handle structure, the bottom of the J-shaped structure having an inclined surface thereon which is in a plane perpendicular to the long side of the J-shaped configuration and is inclined in such a manner that the leading edge of the inclined surface is positioned farther from the handle than the trailing edge of the inclined surface, and the tail of the J-shaped configuration extends parallel to the long side of the J-shaped configuration and overlies the inclined surface.

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