May 2, 1961 C. A. SCHWEITZER 2,981,988

COVING AND PROCESS FOR MAKING IT

Filed March 2, 1955 2 Sheets-Sheet 1

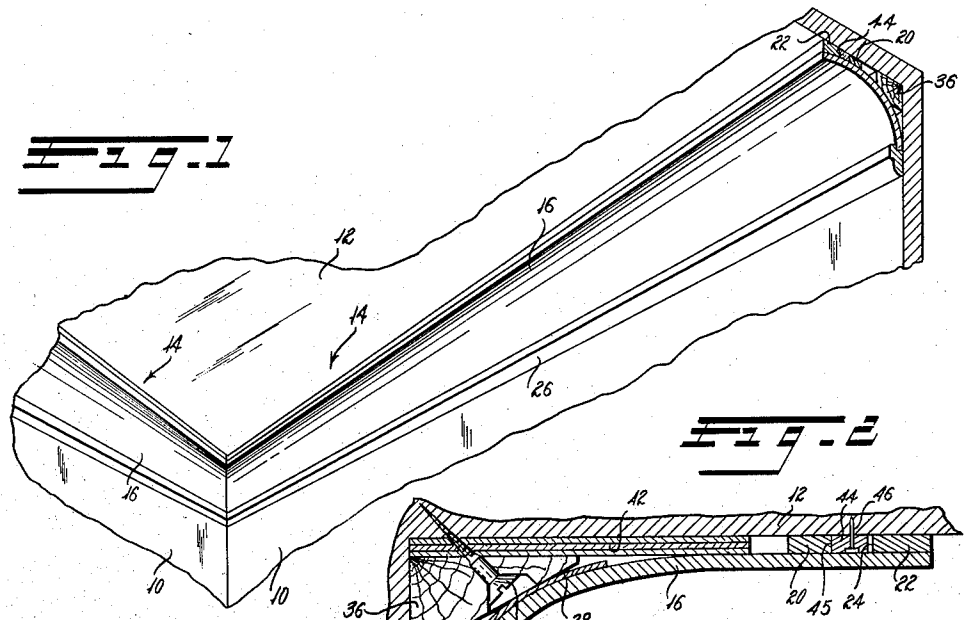


Fig. 1

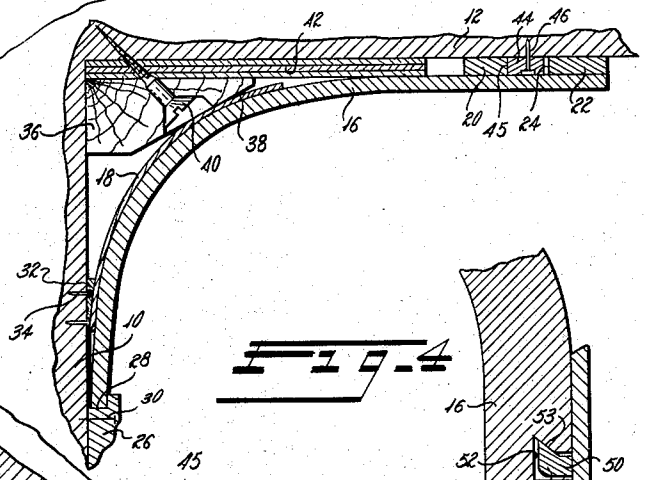


Fig. 2




Fig. 4

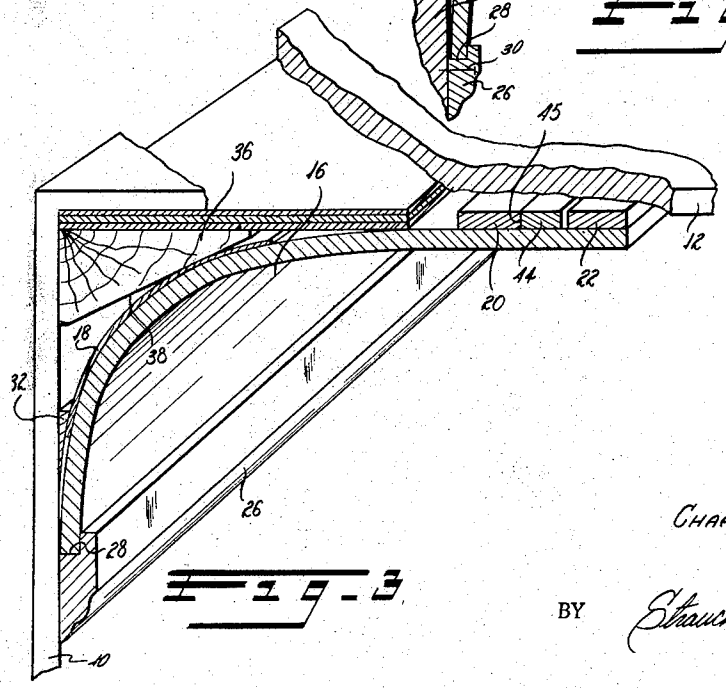


Fig. 3

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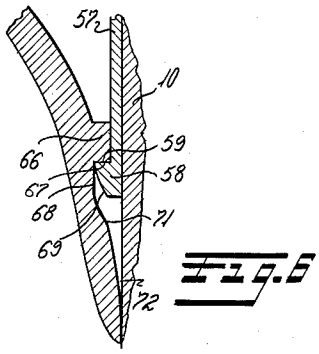



Fig. 6

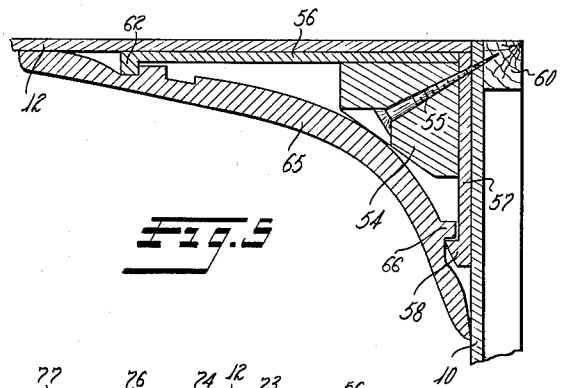



Fig. 5

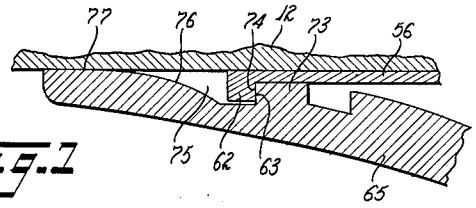
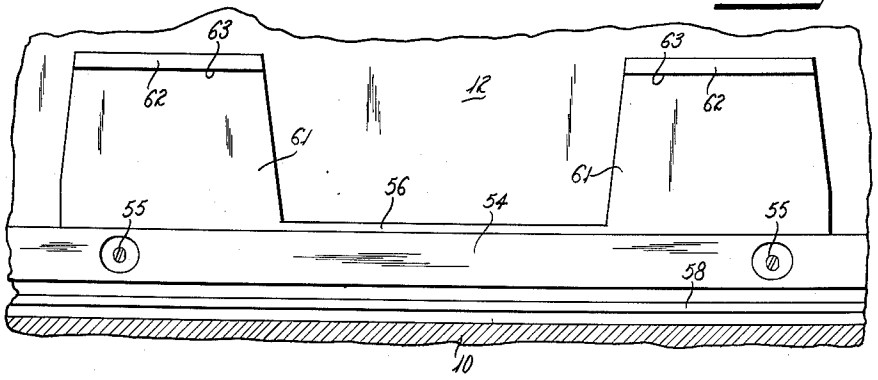



Fig. 7

Fig. 8



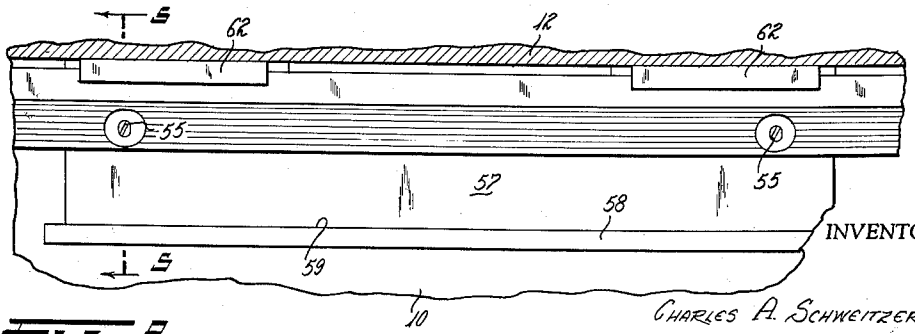




Fig. 9

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# COVING AND PROCESS FOR MAKING IT

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1 Claim. (Cl. 20—74)

The present invention relates to a building element and more particularly to a prefabricated coving and a process for making it.

It is a wide-spread practice in building houses, churches, office buildings and the like to provide a coving between the walls and the ceiling of the rooms or chambers to convert the square angles between them into curves for a more finished and pleasing appearance. The long-standing conventional practice in the building art is to make such covings with lath and plaster during the construction and finishing of the walls and ceilings. Plaster and lath coving, however, is expensive because its construction is time consuming and requires the service of skilled plasterers. Accordingly, there have been a number of prior efforts since at least 1871 to provide prefabricated covings as a substitute for the conventional lath and plaster coving, but the prefabricated coatings heretofore developed have been unsatisfactory for various reasons. Some prior types are complex in design so that their initial prefabrication costs and costs of installation are excessive, as a result of which they are not competitive with the conventional plaster coving constructions. Others are not sufficiently pleasing and finished looking in appearance when installed. Still others are not sufficiently durable and become loose or unsightly in a short time, even though pleasing in appearance when initially installed. Because of such and other deficiencies of the prefabricated covings heretofore developed, they have not been generally accepted by the building trade, and it is still the general prevailing practice in the trade to use the relative expensive lath and plaster covings.

The present invention therefore contemplates a prefabricated coving which can be used between the walls and ceiling of a room instead of the costly conventional lath and plaster coving construction to give the room a more pleasing and finished appearance, and does not have the deficiencies of prefabricated covings heretofore proposed. In accomplishing the invention I provide a coving strip of uniform arcuate cross section and essentially made of the hard pressed fibre board known generically as hardboard. Hardboard, as distinguished from natural wood and the softer fibre block products such as Celotex, comprises a homogeneous, hard, dense, grainless synthetic board usually of compressed wood chip fibres and having a density of 30 to 60 pounds per cubic foot. This is available under such names as Beaverboard, Pressedwood and the like.

It is a primary object of the present invention to provide a novel coving construction which may be easily and cheaply fabricated and quickly and readily secured in place to form a neat curved corner between two plane surfaces like the wall and ceiling of a room.

It is another object of the present invention to provide a novel coving construction in which the fastening and structural support members for the coving strip are virtually completely concealed so that they do not adversely affect the appearance of the coving.



It is a further object of the present invention to provide a coving construction incorporating a laterally curved resilient coving member which can be quickly and positively snapped into place by a relatively unskilled workman and is held securely in position, in part by its own resiliency and form.

It is a related object of the present invention to provide such a prefabricated coving including a coving strip that can be securely but removably mounted between the wall and ceiling thus providing ready access to pipes or wires, and the like, which may be concealed behind such coving strips.

It is still another object of the present invention to provide a coving assembly which incorporates an ornamental molding that is part of the retaining means for the coving strip.

It is still a further object of the present invention to provide a coving construction incorporating a coving strip made of an inexpensive material that can be readily and economically formed to desired radius by molding or the like, will not crack or warp in processing, is durable and slow to deteriorate in use, has inherent resilience and substantial strength which adapt it to a coving strip that is readily assembled into the final coving construction, and that is easy to work with during assembly by carpenters or plasterers.

It is a related object of the present invention to provide a novel preformed hardboard coving strip.

It is still another object of the present invention to provide a prefabricated coving strip which is truly competitive with the prevailing plaster and lath coving constructions and is economically feasible.

A further object of the invention is to provide a novel method of fabricating a coving strip wherein a predetermined form and resiliency are imparted.

Many other and further objects, advantages and features of the present invention will become apparent from the following specification when considered in connection with the accompanying drawings and claim forming a part thereof.

In the drawings:

Figure 1 is a fragmentary perspective view of the upper corner of a room showing how the prefabricated coving of the present invention is used to provide a neat curved corner between walls and ceiling;

Figure 2 is a transverse sectional view of the prefabricated coving construction shown in Figure 1;

Figure 3 is a perspective sectional view of the coving construction of the present invention with parts broken away to show some of its structural details;

Figure 4 is a fragmentary section showing an optional construction along the wall edge of the coving strip;

Figure 5 is a cross section on line 5—5 of Figure 9 similar to Figure 2 showing a further embodiment of the invention;

Figures 6 and 7 are sectional enlargements of the ceiling and side wall end connections of the coving of Figure 5;

Figure 8 is a plan view looking up at the ceiling showing the preassemblies mounting for the coving strip in this form of the invention; and

Figure 9 is a side elevation showing the preassembly mounting of Figure 8.

Referring to the drawings there is shown in Figure 1 part of a room having walls 10 usually of plaster, a ceiling 12 usually plastered and a coving according to the present invention which is generally indicated at 14.

The coving 14 comprises an elongated coving strip 16 prefabricated from hardboard formed to the desired radius so that it has an arcuate cross section as shown in Figure 2. Many materials have been tested, including thin lumber and laminated lumber and it has been

found that the compressed synthetic board known as hardboard is an unexpectedly superior material for the coving strips **16**. The coving strip **16** is preferably provided at its curved heel with a relatively thin reinforcing strip **18** of hardboard which is intimately bonded to the rear face of strip **16** as by glue or other suitable adhesive. A pair of elongated hardboard strips **20** and **22** are also bonded to the back face of the coving strip **16** along the edge which is adjacent the ceiling **12** in the assembled coving, and these strips **20** and **22** are parallel and spaced from each other to form a groove **24**. Strip **22** is preferably disposed flush along the edge of coving strip **16** as shown in Figure 2.

To mount and retain the coving strip **16** in the corner between the wall **10** and ceiling **12**, a picture frame type molding **26** provided with a longitudinal groove **28** along its back edge is attached to the wall **10** the proper distance below ceiling **12** as by nails **30**. A wedge shaped back-up strip **32** is secured to wall **10** a small distance above the molding **28** and substantially parallel to it as by nails **34**. The corner between wall **10** and ceiling **12** receives an elongated supporting block **36** which is suitably formed along one edge to form an arcuate surface **38** that backs up the heel of the coving strip **16** in the assembled coving. The supporting block **36** is secured to the ceiling **12** as by a plurality of wood screws **40** as shown in Figure 2, and a strip **42** of plywood or like material is preferably interposed between block **36** and ceiling **12** so that pressure is distributed to the ceiling over a large area through strip **42**. In this way, strip **42** avoids excessive localized pressures which might tend to crack the ceiling plaster as screw **40** is tightened. An elongated strip **44** is attached to the ceiling **10** as by nails **46** at the proper distance from wall **10** so that it received in the groove **24** on the coving strip **16** and thus serves as a retainer tongue for the assembled coving. The strip **44** is of slightly smaller width than groove **24** so that it readily fits therein.

Molding **26**, back-up strip **32**, block **36** and tongue **44** are all preferably lengths of wood.

Coving **14** is installed by first securing molding **26**, back-up strip **32**, supporting block **36**, pressure distributing board **42**, and tongue strip **44** to the wall and ceiling as above described. The coving strip **16** is then quickly and readily mounted to complete the coving construction by inserting one edge into the groove **28** of the molding **26** and laterally flexing or bending the coving strip **16** to slightly increase its curvature so that the tongue **44** may snap into groove **24**. The strip **44** is positioned so that the coving strip **16** when assembled with its lower end abutting the groove surface at **28** it is bent into a slightly smaller radius than normal so that the coving strip **16** is positively retained in position due to its inherent resiliency which forces strip **20** against abutment surface **45** of strip **44** in tight frictional engagement. If no pipes, wires or like objects are hidden beneath the coving strip **16**, it is generally preferable to first apply glue or like adhesive on the back surfaces of coving strip **16** along its longitudinal edges before mounting it as above described, and after setting the glue helps to provide a permanent and stronger mounting for the coving strip **16**. The coving **14** is of such construction that all non-ornamental structural and fastening parts are hidden and thus do not affect the appearance of the coving.

Back-up member **32**, supporting member **36** and key member **44** are preferably in the form of elongated strips because such strips are easy to install, but a plurality of spaced relatively short blocks of the same cross-sectional shape could be used instead.

The coving strip **16** is preferably processed from ordinary commercial hardboard which has been found an unexpectedly good material for this purpose. Beaverboard of desired length and usually three-sixteenths of an inch thick is first cut into strips approximately twelve inches wide for most covings. The strip is then steamed to render it more readily bendable. A commercial adhesive glue is brought to the boiling point and then applied to the back face of the Beaverboard and to the front face of the reinforcing strip **18**. The reinforcing strip **18** is then placed in desired position on the back face of the coving strip **16** and while this glue is drying additional glue is applied to the remainder of the rear face of coving strip **16**. The reinforced board is hot pressed into shape in three stages, either in three individual presses, or preferably in a single three-stage press of appropriate design. In the first stage, the coving strip **16** and the reinforcing strip **18** are placed under firm pressure to bond the reinforcing strip **18** to what will be the heel section of the coving strip **16**. In the second stage, the main radius of the coving strip **16** is formed by pressing the strip against a die block of suitable contour. In the third stage, the coving strip **16** and reinforcing strip **18** bonded to it are pressed into the final shape having the cross sectional curvature substantially as shown in Figure 2. Under normal temperature conditions, the coving strip member is permitted to set in the press as part of the third stage of the process for approximately one-half hour at ambient temperature, but the overall process may be accelerated by applying dry hot air to decrease this setting time. After the third stage the pressing operations, the coving strip retains its arcuate shape substantially as shown in Figures 1–3, is very substantial, and is ready to be cut and placed in position. Strips **20** and **22** are hardboard strips glued and pressed on in a heated press either during or before the above described three stage operation.

From the foregoing it will be apparent that the present invention provides a novel prefabricated coving of pleasing appearance which may be economically fabricated from ordinary hardboard and can be readily and quickly assembled by a relatively unskilled workman to form a neat curved corner between wall and ceiling and thus is an economical substitute for relatively costly conventional lath and plaster coving constructions.

The finished coving strip assembly emerges from the pressing operation with substantially the arcuate cross-section shown in Figure 2, and the reinforcing strip **18** on the heel helps to retain this shape. It is laterally flexible by reason of its relatively thin wall and sufficiently resilient that after the lower edge of strip **16** is seated in the molding groove and the strip flexed and rocked toward the ceiling the groove **24** and key **44** snap into interlocking engagement with at least strip **22** flush with the ceiling so as to keep out dust and present a solid surface to the room.

It will be understood that the back-up strip **32** and support block **36**, while useful, are not essential for an adequate coving in many constructions. Also the interlock structure along the upper edge of the strip **16** may be of any suitable structure, and for example the tongue **44** may be on the back of strip **16** and the strips **20**, **22** on the ceiling.

An optional lower end structure for coving strip **16** is shown in Figure 4 wherein the lower anchor for the coving is also concealed behind the coving in the assembly. In this form of the invention the molding strip **26** is replaced by an anchor strip or series of short strips **50** suitably secured to wall **10** and having a generally dovetail cross-section at **51**. The rear face of strip **16**, which may be here thickened by additional plies of fibre board, has cut into it a similarly shaped longitudinal slot **52** that is sufficiently larger than the anchor strip to enable them to be assembled by a rocking movement, and when the anchor strip is in the slot, then the coving strip is flexed and its other edge snapped into the ceiling interlock so that the tendency of the resilient coving strip to expand keeps the coving assembly tight along both edges, the coacting inclined surfaces **53** of the slot and anchor strip

preventing outward displacement of the lower edge of the coving and the coving strip being resiliently held between the longitudinally parallel abutment surfaces at 45 and 53.

In both of these embodiments therefore the laterally flexible coving strip is flexed into position in the corner between the wall and ceiling and is provided adjacent opposite ends with abutment surfaces adapted to abut substantially parallel abutment surfaces fixed with respect to the wall and ceiling respectively and the tendency of the flexed strip to expand toward its normal shape holds the coving strip tightly in position.

Referring now to Figures 5–9, there is disclosed an improved embodiment of the invention wherein the mounting assembly for the coving strip is preassembled into suitable length and attached into the corner between the side wall 10 and the ceiling 12, and a coving is snapped into place on the mounting similarly to the earlier embodiments.

The mounting assembly for the coving strip comprises a long block of wood 54 thick enough for holding screws 55 and for attachment of thin plywood or like strips 56 and 57 which are eventually adapted to lie flush with the ceiling and side wall respectively as shown in Figure 5.

Strip 57 is attached rigidly along the rear flat surface of block 54 by suitable nails, brads or by gluing or both, and it projects along the surface of the wall to terminate in a thicker tongue portion 58 providing a substantially continuous abutment surface 59 that faces toward the ceiling.

Strip 56 is attached rigidly along the upper flat surface of block 54 by suitable fastening devices or glue or both, and it projects along the surface of ceiling 12. Preferably strip 56 is cut out at spaced portions to provide outwardly extending sections as at 61 (Figure 8) each of which is thickened at its end to provide a tongue-like portion 62 providing an abutment surface 63 facing inward toward the rear side wall. Abutment surfaces 63 of the various tongues are all in alignment. Alternatively strip 56 need not be cut out and may be provided with a continuous abutment surface 63.

Under this phase of the invention a rigid subassembly consisting of block 54 and attached strips 56 and 57 are made up in standard room wall lengths, and these can be sawed off in any suitable lengths for shorter walls or to add to the standard length for longer walls. The suitable lengths of subassembly are then very quickly installed in any room simply by fitting block 54 into the usual right angle corner between the side wall and ceiling and inserting and tightening screws 55, preferably as shown in Figure 5 to enter a wooden stud 60 or the like in the wall structure. The installed subassembly is now ready to receive and mount the coving strip.

The coving strip 65 of this embodiment is essentially the same smoothly arcuate longitudinally rigid but adequately transversely flexible strip but with some variation of the interlock with the mounting subassembly. Strip 65 is preferably formed of molded and glued together strips of hardboard, and its back surface contains (Figure 6) a longitudinal ledge projection 66 providing a continuous surface 67 adapted to seat against abutment surface 59 in the completed assembly. Downwardly of ledge 66 is a parallel groove 68 larger than tongue 58. The outer surface of ledge 66 is preferably rounded at 69, and the opposite side of groove 68 is preferably rounded at 71 for convenience in assembly. The terminal of strip 65 below groove 68 is inclined or relieved along its inner surface at 72 for smooth merging with the side wall.

Similarly (Figure 7) the ceiling end of strip 65 is formed with a ledge 73 parallel to ledge 66 providing a continuous surface 74 parallel to surface 67 and adapted to abut surfaces 63 in the complete assembly. Groove 75 outwardly of ledge 73 is continuous and large enough to receive tongue 62, and its outer side wall is rounded at 76 for assembly convenience. This terminal of strip 65 is likewise relieved or inclined outwardly to smoothly merge with the ceiling.

While the various ledges and grooves in coving 65 can be formed by laminating suitable width strips of hardboard, I may form the coving by preforming into the desired curvature an adequately thick length of hardboard or hardboard laminations and milling grooves into it to provided the ledges 66 and 73 and the attendant grooves.

With the subassembly length in place along the room corner the coving strip 65 is mounted simply by resting ledge 66 or 73 against its corresponding abutment surface 63 or 59 respectively and pushing the other side of the strip into place as shown in Figure 5. The curvature and lateral flexibility of strip 65 are such that it laterally flexes to permit both ledges to snap into place against the abutment surfaces and the tendency of the strip 65 to regain its original shape holds it in tight contact along both ledges with the parallel abutment surfaces on the mounting subassembly.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiments are therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claim rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.

What is claimed and desired to be secured by United States Letters Patent is:

A coving secured in the corner between the wall and ceiling of a room comprising a molding having an upwardly open groove secured to the wall spaced from the ceiling, an interlock strip secured along the ceiling spaced from said wall, and said coving comprising a prefabricated hardboard strip having an arcuate laterally flexible cross-section with one edge seated in said groove and interlock means along the back face at the other edge of said coving strip, said interlock means comprising spaced side by side strips secured upon said coving strip and disposed in nesting arrangement over said ceiling strip.

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