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METHOD FOR MOUNTING OF PLASTIC SHEET MATERIAL, PARTICULARLY AS CEILING COVERING IN A ROOM, AND A TOOL ACCOMPLISHING THE METHOD

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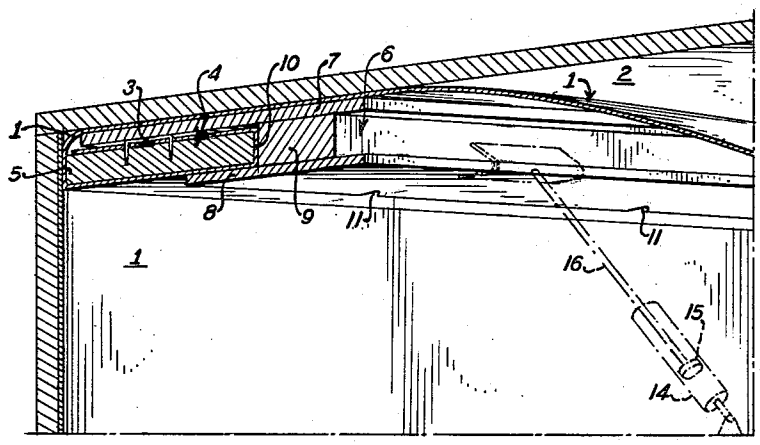



Fig. 1

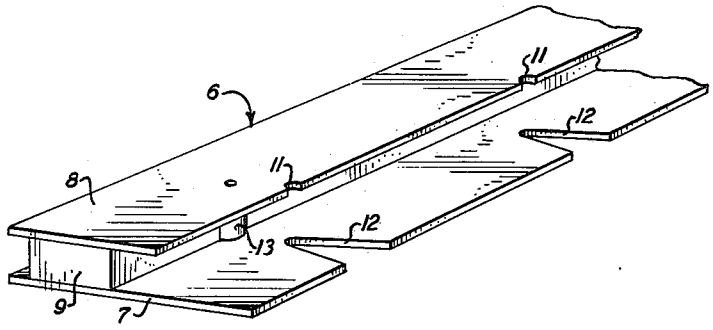



Fig. 2

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# METHOD FOR MOUNTING OF PLASTIC SHEET MATERIAL, PARTICULARLY AS CEILING COVERING IN A ROOM, AND A TOOL ACCOMPLISHING THE METHOD

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The present invention is related to a method for mounting and fastening plastic foil sheet to a surface, particularly to the ceiling of a room, and to a tool for accomplishing the method.

Plastic foil or sheet has considerable advantages when used as a covering for wall and ceiling surfaces of a room, particularly for the ceiling and especially if arranged in self-supporting manner over a large part of or preferably the entire ceiling. Foils or sheets for this purpose are normally prepared from a plurality of foil sections which are welded together. Foils and sheets of the above type have hitherto not been used more extensively due to the great difficulty associated with the mounting of the foil. In order to obtain the most attractive ceiling surface, the foil should be fastened only close up to the splay between the ceiling and the walls, which further increases the difficulties of installation. The installation of the sheets is further complicated by the considerable forces with which the sheet must be stretched during installation.

The method according to the invention for mounting plastic sheet on a surface, particularly a ceiling, is characterized by the fastening of the plastic sheet at one of its edges to a lath or batten, and wrapping or folding the sheet at least once around one of the edges of said lath so that the sheet surface covers at least one side of said lath. Thereafter a tool, in the form of a bar, is inserted between the lath and the part of the sheet extending from the lath. The lath, tool and sheet are then brought to the place intended for fastening the sheet, and the lath with the sheet are then fastened to the surface with appropriate fastening means (for instance nails). The nails are driven through the lath at appropriate notches in the tool and into the surface, so that the tool may be removed after the lath and sheet have been secured in place. Subsequent to removal of the tool, the nails may be driven further into the surface and flush into the lath to cause the latter to be secured tightly against said surface.

A pneumatic piston and cylinder is preferably used for lifting the lath, sheet, and tool to the surface, the forces necessary for stretching the sheet often amounting to several hundred pounds.

To complete the installation, a second lath, somewhat broader than the first one with which the sheet is attached to the surface is then conveniently fastened on top of the first one, the second lath forming with the sheet extending from the first lath a "shadow batten."

A tool for accomplishing the method according to the invention includes a bar having a substantially U-shaped cross section. The bar includes legs which are constituted by plate members, extending in the longitudinal direction of the bar and which are provided with notches distributed longitudinally along the length of the bar. Each notch extends transversely from the free edge of the plate. The width of one of the legs is slightly smaller than the width of the lath to be used for the mounting of the foil. The other leg of the bar is substantially smaller in width than the lath since it must only support the latter under the influence of the force exerted upon it from the foil. The latter leg is preferably provided with marks or notches serving as markings and a guide for the nails, to permit the nails to be driven into the lath and through corresponding notches in the first leg of the bar. A tool according to the invention may preferably consist of several bar units, which can be joined together in the longitudinal direction, in order in a simple way to achieve a tool having suitable length for a paricular room. A beam is provided between the legs of the bar which beam may be provided with rollers, which are rotatable about axes perpendicular to the legs and protruding somewhat into the space between the legs in order to facilitate a lateral movement of the tool in relation to the lath and the plastic foil sheet before and while lifting the sheet.



The invention will be further illustrated with reference to the accompanying drawing wherein:

FIG. 1 illustrates in perspective, installation of a lath and sheet to a ceiling, using a tool according to the invention and FIG. 2 shows the tool alone in perspective.

In FIGURE 1 a plastic foil **1**, which is to be fastened to a ceiling **2**, is attached by suitable means **3** to an upper surface of a lath **4**. The foil is folded or wrapped around the lath **4** to extend around the lower surface thereof and the edge **5** of the lath as to extend above the lath on the side of the lath facing the ceiling. **6** is a tool of substantially U-shaped cross section. The tool has legs constituted by plate members **7** and **8**, attached to a steel beam **9**.

According to the method of the invention, the plastic foil sheet is folded around the lath, and the tool is inserted with member **7** between the sheet which is secured to the upper surface of the lath and the sheet extending beyond the lath until the steel beam **9** of the tool rests against the sheet which is secured to the edge **10** of the lath. The tool, lath, and the plastic foil sheet are then lifted up to the intended place for fastening the sheet, preferably by means of a pneumatic lifting device, schematically illustrated in dashed lines in FIG. 1 and for instance consisting of a cylinder **14**, controllably connected to a pressure air supply and a piston **15**, the piston rod **16** of which is coupled to the tool **6**, the cylinder resting against a firm abutment. The lath is then secured to the ceiling by nails at the locations indicated by notches **11** in the plate member **8** and corresponding to notches **12** in the plate member **7**. Thereafter the tool is removed and the nails are further driven into the ceiling and the lath to tightly secure the latter to the ceiling.

FIGURE 2 shows a segment of a tool, illustrating the notches **12** and the corresponding notches **11**. One of a plurality of rollers, which may be arranged for facilitating an adjustment of the tool in the longitudinal direction thereof relative to the lath and sheet, is indicated at **13**.

Although the invention has been described above with reference to mounting a foil sheet to a ceiling, it is evident that it may also be used for mounting foils on walls or other similar surfaces.

What I claim is:

1. A tool for mounting a plastic sheet on a surface, the tool comprising: a bar extending in a longitudinal direction, said bar including legs and a beam defining a substantially U-shaped cross section, said legs being substantially plate-shaped mutually parallel members having free edges extending in a longitudinal direction and defining a groove adapted for accommodating a lath, at least one of said plate-shaped members being provided with notches in the free edge of the member, said notches extending in the transverse direction of the tool and being spaced in the longitudinal direction of the tool, and means associated with the other of the legs for indicating locations thereon aligned with the notches in the first mentioned plate-shaped member.

2. A tool as claimed in claim 1, wherein said means associated with the other plate-shaped member comprises notches provided in the free edge of said other plate-shaped member aligned with the notches in the first-mentioned plate-shaped member.

3. A tool as claimed in claim 2, wherein said plate-shaped members are of unequal width, said notches in each of the members also being of unequal depth and having apexes which are aligned with one another.

4. A method of mounting a plastic sheet and a lath onto a surface, said method comprising: fastening an edge of the sheet to a side surface of the lath and completely wrapping the sheet around the lath to face said side surface and extend laterally thereof, supporting the lath and the sheet attached thereto in a tool having a flat member interposed between the portion of the sheet which is fastened to the side surface of the lath and the portion of the sheet which faces the latter and extends from the lath, placing the latter said portion of the sheet against the surface to which the lath and sheet are to be mounted by engaging and moving the tool supporting the lath and sheet and while stretching the latter, the lath tending to pivot under the stretching of the sheet as said lath is moved by said tool towards said surface, the lath being supported in the tool to prevent pivoting of the lath while the latter is brought towards said surface on which the sheet and lath are to be secured, securing the lath and sheet to the latter surface while leaving the tool free for removal and thereafter removing the tool from the lath and sheet to leave the latter secured to said surface.



5. A method of mounting a plastic sheet and a lath onto a surface, said method comprising fastening an edge of the sheet to the lath and wrapping the sheet around the lath to extend therefrom, supporting the lath in a U-shaped tool having legs, with the lath between the legs and abutting the tool along an edge of the lath and with one of the legs of the tool extending over the lath and the sheet extending over the latter leg, moving the lath, tool, and thusly wrapped sheet towards said surface on which the lath and sheet are to be installed while stretching the sheet, said moving and stretching tending to cause rotation of the lath, the legs of the tool resisting rotation of the lath, and connecting said sheet and lath to the surface independently of the tool and with the sheet in stretched condition and removing the tool subsequent to the connecting of the sheet and lath to the surface.

**References Cited** in the file of this patent

UNITED STATES PATENTS

| | | |
|---|---|---|
| 1,000,859 | Vaughan | Aug. 15, 1911 |
| 1,016,383 | Wellman | Feb. 6, 1912 |
| 2,823,745 | Hill | Feb. 18, 1958 |
| 2,943,676 | Grenci | July 5, 1960 |