July 4, 1972 D. L. BENNETT 3,674,610

TOOLS FOR APPLYING SELF-ADHESIVE SURFACE COVERING MATERIAL

Filed April 14, 1969

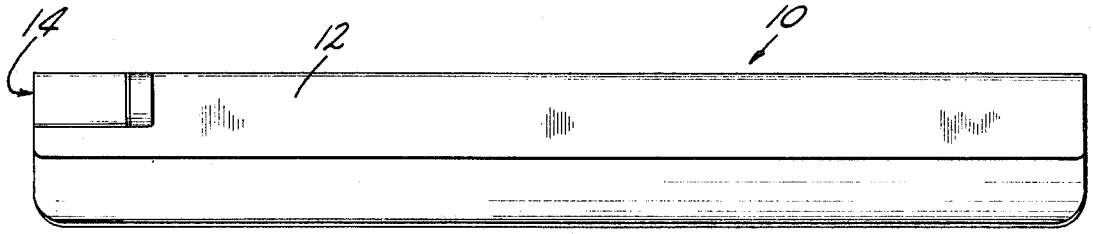


FIG. 1

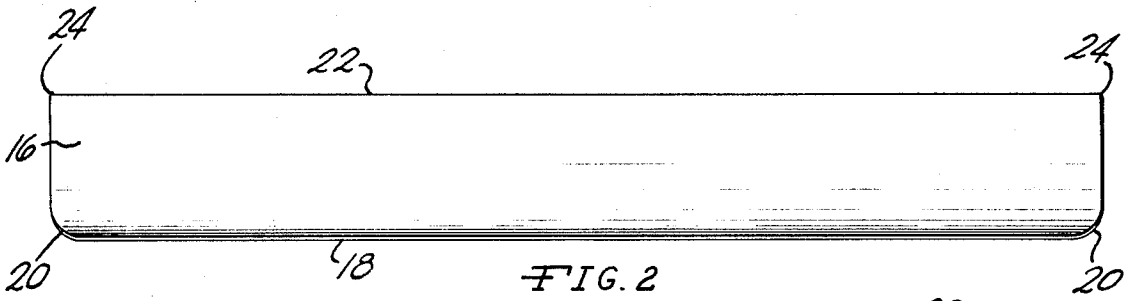


FIG. 2

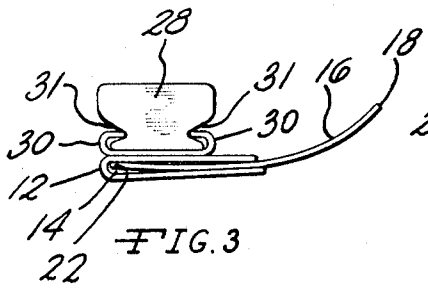


FIG. 3

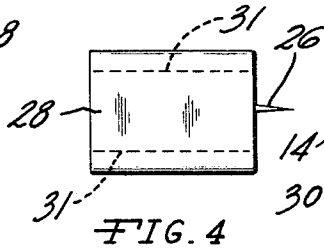


FIG. 4

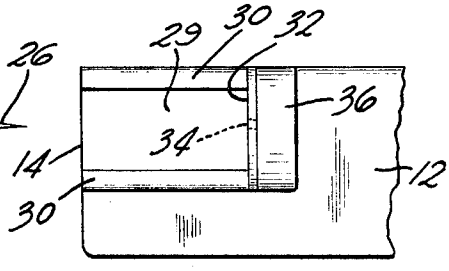


FIG. 5

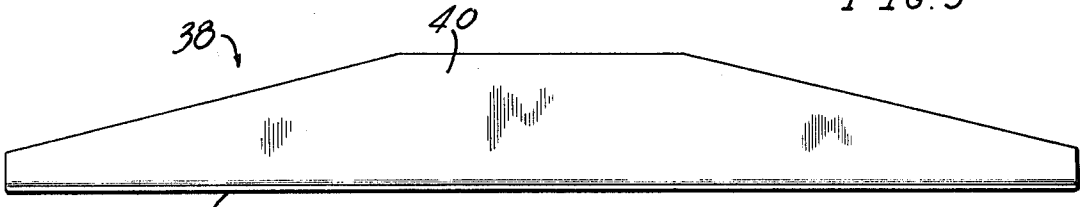


FIG. 6

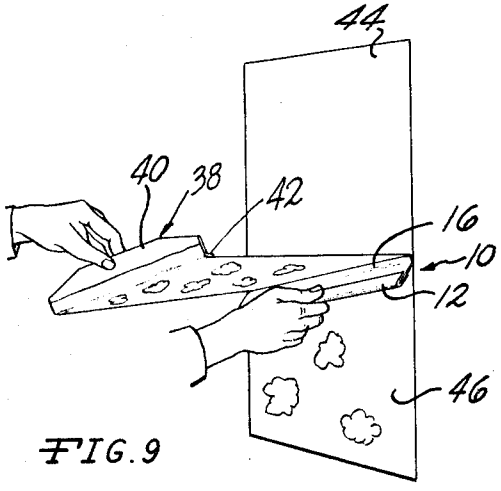


FIG. 9

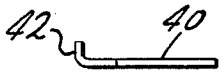


FIG. 7

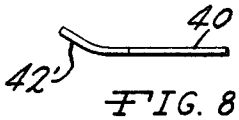


FIG. 8

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United States Patent Office 3,674,610 Patented July 4, 1972

3,674,610

TOOLS FOR APPLYING SELF-ADHESIVE SURFACE COVERING MATERIAL

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Filed Apr. 14, 1969, Ser. No. 815,860
Int. Cl. A47l 17/06; B32b 31/20
U.S. Cl. 156—579 7 Claims

ABSTRACT OF THE DISCLOSURE

A pair of manually operated tools for holding and pressing self-adhesive surface covering material into adhesive contact with a flat surface. One tool includes a blade having a long, straight, thin edge, slightly curved about its longitudinal axis, and is employed to press self-adhesive surface covering material into adhesive contact with a flat surface. The corners of the blade at the ends of the edge may be rounded for ordinary use, or square for use in corners. An extendable sharp point is provided for puncturing the covering material to permit the escape of air trapped thereunder. The other tool includes a long, straight edge bent not more than 90° and disposed to be adhered to by the free end of the surface covering material, so that the unapplied portion of such material may be supported in near-perpendicular extension from such flat surface while the material is being pressed into contact with the surface by the first tool.

BACKGROUND OF THE INVENTION

This invention relates to the application of self-adhesive surface covering material, and more specifically to a first tool for pressing a strip of such material into adhesive contact with a flat surface while simultaneously preventing air from being trapped thereunder, and a second tool for holding the unapplied portion of such strip in a position facilitating such application thereof.

Self-adhesive surface covering material, such as that known as "Contact paper," consists of a plastic film, cloth, or sheet, usually bearing a design on its upper surface, and an adhesive undercoating to which a temporary backing, customarily of waxed paper, is adhered. When the backing is removed from the underside of the covering material, the material may be applied to a wall, table, cabinet, or other flat surface by pressing the exposed adhesive side of the material against the surface to be covered.

Several difficulties, however, have been heretofore encountered in the application of such surface covering material. The adhesive undercoating of the material adheres to the fingers of the operator and to most other objects which it may accidentally touch during application. In particular, one portion of the adhesive undercoating will adhere to another portion thereof with a tenacity which makes it almost impossible to separate the two without stretching and deforming the surface covering material itself. Another problem frequently encountered is the entrapment of air in bubble-like pockets between the surface covering material and the surface being covered thereby. Such bubbles separate the surface covering material from the surface being covered, prevent adhesion of the material thereto, and tend to stretch and distort the covering material. These several problems, encountered simultaneously by an operator while applying such material to a surface, make the operation difficult and, in some cases, defeat its success.

SUMMARY OF THE INVENTION

The invention overcomes the above disadvantages by providing two tools, one of which includes a blade having a long, thin edge slightly curved about its longitudinal

axis and employed in a particular manner hereinafter taught to press the surface covering material into adhesive contact with the surface to be covered while simultaneously preventing air from being trapped thereunder. The other tool is disposed to be adhered to by the free end of the covering material and to cooperate with the first tool by supporting the unapplied portion of such material in a near-perpendicular extension from such surface while the material is being pressed into contact with the surface by the first tool. The near-right angle formed by the covering material, the apex of which angle constantly coincides with and is being pressed into contact with such surface to be covered, prevents air from being entrapped by the covering material as it adheres to the surface.

DESCRIPTION OF THE DRAWING

The description refers to the accompanying drawings in which like reference characters refer to like parts throughout the several views, and in which:

FIG. 1 is a plan view showing the preferred embodiment of a smoothing tool;

FIG. 2 is a plan view of the blade of a smoothing tool disengaged from a blade holder;

FIG. 3 is an end view from the left of the smoothing tool of FIG. 1;

FIG. 4 is a plan view of a sliding block, supporting a sharp point;

FIG. 5 is a plan view of a bracket, stop, and sheath for slidingly receiving the article of FIG. 4 in either a sheathed of unsheathed position;

FIG. 6 is a plan view of a covering material supporting tool;

FIG. 7 is an end view from the left of the tool of FIG. 6;

FIG. 8 is a plan view of a modified form of supporting tool;

FIG. 9 is a perspective view of the supporting tool and applicator tool of my invention cooperatively employed in use.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings, as best shown in FIG. 1 I provide an applicator tool generally indicated at **10**. A blade holder **12** is formed from a single piece of substantially inflexible material, such as aluminum, galvanized iron, or polystyrene, and is folded once upon itself to form opposed walls defining a deep pocket therein extending the entire length thereof, as best shown at **14**. A thin elongated blade **16** of similar material is provided. Blade **16** is formed with a slight curvature about its longitudinal axis, as best shown in FIG. 3. The leading or operative edge **18** of blade **16** is perfectly straight, and is preferably provided with rounded end corners **20**, **20**, to avoid scraping the surface to which the surface covering material is to be applied. The opposite edge **22** of blade **16** in the preferred embodiment of the invention is also perfectly straight, but is provided with square, rather than round, corners **24**, **24**, for a purpose more particularly hereinafter described. As best shown in FIG. 3, either edge **22** or edge **18** of blade **16** may be manually inserted into pocket **14** of holder **12**, whereby the curvature of the blade effects frictional retention of the blade in the holder pocket. Holder **12** may then be grasped manually by the operator when the blade is in use.

I also provide for use in combination with my applicator tool **10** a sharp point **26**, consisting of a needle embedded in one end of a sliding block **28**, as best shown in FIG. 4. A bracket **29** having a pair of flanges **30**, **30** arranged to extend into a pair of longitudinal grooves **31**, **31** in the sides of sliding block **28** whereby to slidingly receive the block, is cemented or otherwise supported

upon holder **12** near one end thereof, as best shown in FIGS. 1 and 5. Bracket **29** bears a stop **32** at its medial end, and an aperture **34** is provided in the stop to receive point **26** when block **28** is fully received within the bracket with the point extending in the medial direction. A sheath **36**, preferably formed from Styrofoam, rubber, cork, or similar material, is cemented to stop **32**, to sheath point **26** when the point is not deployed for use. It should be particularly noted that sliding block **28** is adapted to be slidingly received by bracket **30** with point **26** either directed toward aperture **34** and sheath **36**, whereby it may be sheathed, or, in the alternative, with the point directed away from the stop and sheath, in which latter position the point is deployed for use and, in combination with holder **12**, forms an extending piercing device for puncturing pockets of air trapped beneath surface covering material.

I also provide a covering material supporting tool generally indicated at **38**, also formed from substantially inflexible material such as aluminum, galvanized iron, or polystyrene. One longitudinal edge **40** of tool **38** is disposed to serve as a handle to be grasped manually by the operator, and the opposing longitudinal edge **42** is bent upward. In the preferred embodiment of the invention, edge **42** is bent at approximately a 90° angle, as best shown in FIG. 7. In a modified form of the invention, best shown in FIG. 8, edge **42** is bent at an angle of less than 90° from the plane of handle portion **40**.

In use, a strip of conventional self-adhesive surface covering material **46** is first laid face downward upon a table, floor, or other flat surface, and the waxed paper backing material peeled back from one end thereof. The outer surface of edge **42** of holder tool **38** is then placed against the adhesive undersurface of the covering material and the material pressed into adhesive contact therewith. Handle **40** of holder **38** is then grasped in one hand by the operator, while with the other hand he strips the remainder of the backing material from the covering material. It should be noted that holder **38** keeps the covering material under uniform tension and in a flat position, from which it cannot roll up upon and adhere to itself, while the backing material is being removed.

The surface covering material, with the aid of holder **38** supporting the end thereof last to be applied, is then positioned adjacent the surface which it is to cover, such as a wall **44**, with the adhesive undercoat thereof facing such surface. The lower edge of the surface covering material is then pressed manually against the surface to be covered at the desired starting point. Applicator tool **10** is then grasped in the operator's free hand and leading edge **18** pressed against the surface covering material with the curve of blade **16** extending in the direction toward which the material is to be applied.

Tool **38**, grasped in the other hand of the operator, is then drawn away from the surface to be covered, placing the unapplied portion of the covering material under slight tension and extending in a near-perpendicular position from the surface. It will be noted that the applied and unapplied portions of the covering material are now arranged at a right angle by the cooperative action of tools **10** and **38**, with edge **18** of applicator tool **10** pressing the apex thereof against the surface, such as wall **44**, as best shown in FIG. 9. Applicator tool **10** is then slowly moved upward, as best shown in FIG. 9, the leading edge **18** thereof constantly pressing the covering material into adhesive contact with the surface to which it is to be adhered, such as wall **44**. The straight, thin edge **18** of applicator **10** constantly maintains the covering material in intimate contact with the surface to which it is to be adhered along a line of pressure at the apex of the angle, and the unapplied portion of the covering material, being held away from the surface by holder tool **38**, is prevented from adhering to the surface except at the line of pressure exerted by edge **18**. Not only is air thus prevented from getting under and being trapped by the covering material as it is applied, but edge **18**, with the assistance of the curvature of blade **16**, actually forces forwardly and squeezes out from under the covering material any tiny pockets of air which may have been trapped thereunder.

Should any small pockets of air nonetheless be found accidentally trapped between the covering material and the surface after application of the covering material, it is not necessary to remove the covering material to deflate such. Sliding block **28** is removed from bracket **29** and replaced therein in reverse position, with sharp point **26** deployed and extending outwardly beyond the end of holder **10**. Blade holder **10** may then be grasped at its opposite end by the operator and point **26** utilized to pierce the surface of the covering material over the air pocket, thereby permitting the air to escape therefrom. Leading edge **18** of applicator **10** may then be used to press the covering material in the area of the former air pocket against and into intimate adhesive contact with the surface, working from the perimeter of the air pocket towards the tiny aperture pierced in the covering material by point **26**, thereby forcing all of the air out of the pocket.

While I have described applicator tool **10** and particularly blade **16** thereof as being formed of substantially inflexible material, it is to be understood that the blade retains sufficient flexibility to conform to minor variations in the texture of the surface, such as wall **44**, to which the surface covering material is to be applied, while maintaining sufficient stiffness to prevent air bubbles from being trapped beneath the surface covering material during the application process.

Having described my invention, I claim:

1. A tool for applying self-adhesive surface covering material comprising an elongated strip of substantially inflexible material, said strip being slightly curved about its longitudinal axis, one longitudinal edge of said strip being disposed to be grasped manually, the opposite longitudinal edge of said strip being straight, relatively thin, and disposed to press such surface covering material into adhesive contact with a flat surface and simultaneously expel air from thereunder, and a sharp point supported upon and extending from said tool, and disposed to puncture said surface covering material to permit the escape of air trapped beneath said material after application thereof.

2. The construction set forth in claim **1** including a sheath supported upon said tool and arranged to sheath said sharp point when not in use.

3. The construction set forth in claim **1** including an elongated blade holder having a deep, longitudinal fold therein, said one longitudinal edge of said strip being grippingly received within said fold.

4. The construction set forth in claim **3** wherein the corners of said opposite longitudinal edge of said strip are rounded, and the corners of said one longitudinal edge of said strip are square.

5. The construction set forth in claim **3** including a bracket supported upon said blade holder near one end thereof, a reversible sliding block adapted to be slidingly received by said bracket, said sharp point being supported upon and extending from one end of said sliding block, a stop at the medial end of said bracket to limit movement of said sliding block in the medial direction, said point extending beyond the end of said blade holder when said block is received within said bracket and the end of said block opposite said point rests against said stop, and sheathing means for sheathing said point when said block is received within said bracket and rests against said stop with said point directed in the medical direction.

6. A tool for applying a covering to a surface comprising an elongated blade curved about its longitudinal axis, and a blade holder having opposed, straight walls defining a pocket in which one edge portion of said blade is accommodated with the remainder of said blade extending

beyond said blade holder, the curvature of said blade effecting frictional engagement of said edge portion of said blade with the walls of said holder and frictional retention of said blade portion in said pocket.

7. The construction set forth in claim 6 wherein said blade is formed of a material which has properties of stiffness and flexibility.

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U.S. Cl. X.R.

D8—14; D49—23; 15—105; 156—576