Nov. 26, 1957 S. W. TVORIK ET AL 2,814,080

DRY WALL TAPE

Filed Jan. 30, 1956

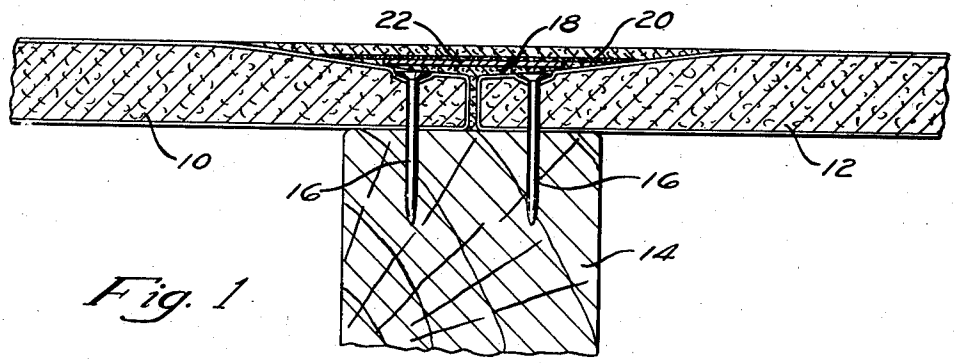

Fig. 1

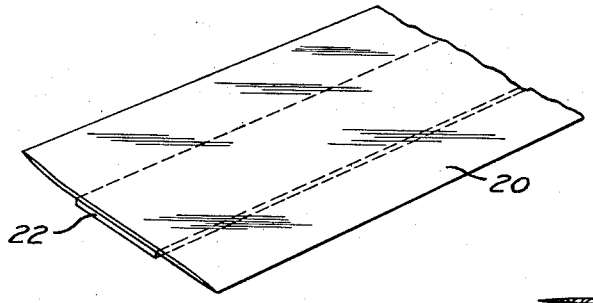

Fig. 2

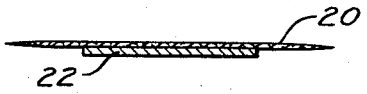

Fig. 3

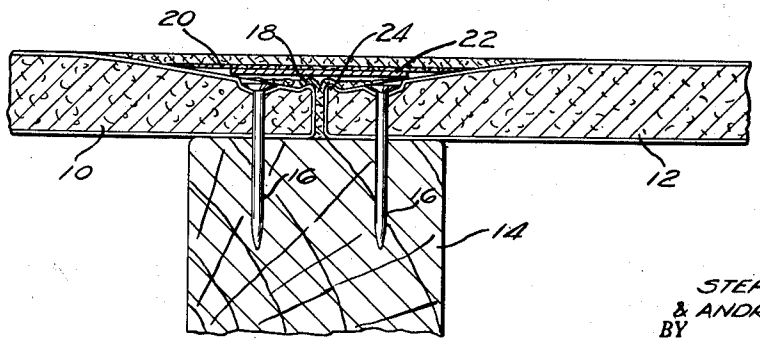

Fig. 4

INVENTORS
STEPHEN W. TVORIK
& ANDREW BRAUNITZER,
BY
RICHEY, WATTS, EDGERTON & McNENNY
ATTORNEYS

United States Patent Office 2,814,080
Patented Nov. 26, 1957

2,814,080

DRY WALL TAPE

Stephen W. Tvorik and Andrew Braunitzer,
Cleveland, Ohio

Application January 30, 1956, Serial No. 562,059

4 Claims. (Cl. 20—92)

This invention relates to dry wall construction and more particularly to materials used in the installation of sheets of plasterboard on the walls of a building to obtain a uniformly smooth surface.

Dry wall construction is the installation of panels of plasterboard nailed on walls and ceilings. The butt joints between the various panels are given a treatment to conceal the joint and any defects in the material. The common material used in closing the joints is paper tape applied with cement. The cement and paper seal the crevices and unevenness and form a smooth continuation of the surface of the wall when installed properly. However, many defects later appear in the work as a result of drying of the cement and edges of the panels.

The sheets of plasterboard are often times damaged at the edges which results in a recess which must be filled with the cement, covered with the tape, and recemented to obtain a smooth wall surface. In applying the tape it is first covered with a cement, after the tape has been placed over the joint or defect being covered. A broad knife having a blade of considerable width is drawn over the tape in order to remove the excess cement beneath the tape whereupon the seams are left to dry and additional coats of cement are applied as required to achieve a smooth, uniform surface. After the dry wall installation is complete, the wall may then be painted and will appear smooth and free of defects.

Certain conditions which alter the surface of the cement occur after the use of conventional taping methods. These result primarily from shrinkage and warpage and are outside the control of the worker at the time of the installation. In a matter of weeks after the job is finished, certain defects appear which results in bad appearance and dissatisfaction.

Accordingly, the most important object of this invention is to provide a taping material that may be applied to a joint which will maintain the finish, although shrinkage and warpage of the materials ordinarily used may occur.

Another object of this invention is to provide a finishing process for dry wall construction which will eliminate bad effects resulting from changes in the materials used over a period of time.

A still further object of this invention is to provide a taping structure having characteristics simplifying the installation and reducing the skill required in the workman to obtain results of a better quality than those previously obtainable.

Another important object of the invention is to provide a taping material which controls the warpage and beading of the plasterboard after the installation is completed in such a manner that defects do not later appear and damage the appearance of the wall or ceiling.

Other objects and advantages more or less ancillary to the foregoing, and the manner in which all the various objects are realized, will appear in the following description, which considered in connection with the accompanying drawings sets forth the preferred embodiment of the invention.

In the drawings:

Fig. 1 is a sectional view of a finished dry wall joint utilizing the preferred embodiment of our invention.

Fig. 2 is a perspective view of the tape.

Fig. 3 is an end view of the tape, and

Fig. 4 is a structural view of a finished dry wallboard after the shrinkage and beading has taken place.

Referring first to Fig. 1, a typical dry wall joint is shown therein, wherein, a wallboard **10** and a wallboard **12** are mounted in abutting relationship on the frame **14**. Wallboards **10** and **12** are affixed to the frame **14** by the use of nails **16**.

The wallboards **10** and **12** are reduced in thickness along the margins thereof which provides a sloping surface **18** recessed from the level of the general wall surface for receiving the nails **16** in order that the heads of the nails **16** may be below the surface of the finished wall and completely covered.

To hide the joint and to make a smooth wall surface, a treatment is applied to the joint area which hides the joint and forms a continuation of the smooth surface of the wallboards **10** and **12**. Cement is first applied to the surface **18** and introduced into the crevice, if any, between the confronting ends of the wallboards **10** and **12**. A tape **20** as shown in Figs. 2 and 3 is then coated with cement and placed over the joint area. The tape **20** is in the form of a strip of paper scarfed at the longitudinal edges to obtain a thin or feathered edge. The tape **20** also has a metal tape **22** fixed to the center of the paper tape **20** by gluing the metal tape **22** being approximately 5/8 of an inch wide and having a thickness of approximately 0.020 of an inch. The function of the metal tape **22** is to provide a central rigid portion which will resist bending in a transverse direction and be sufficiently flexible in a longitudinal direction to accommodate for unevenness in the wallboard installation. After the tape **20** is in position, further coats of cement are applied thereover as required to form a level and smooth surface over the joint.

When the tape **20** is in position as shown in Fig. 1 and the cement shrinks at the seam area, the tape **22** has sufficient lateral strength to support the surface cement while allowing the cement beneath the tape to break away, thus maintaining the surface of the wall in unaltered condition and unaffected by shrinkage which results from ultimate drying of the cement, for weeks, after the job is completed.

The metal strip **22** tends to support the paper strip **20** in such a manner that the pressure of the broad knife used to apply and smooth the cement is not critical. Without the metal strip **22**, it is possible to press too hard, therefore, forcing out the cement from beneath the tape **20** with the result that due to unevenness in the plasterboard **10** and **12**, dry spots will occur where there is insufficient cement to form a bond and the tape being unbonded, tends to blister or raise from the wallboard. The metal tape therefor, operates as a gauge and reduces the skill requirement for the workman to do an adequate job in installing the tape by distributing an optimum quantity of cement in the tape area.

The wallboards **10** and **12** are formed from gypsum, having a paper cover which extends around the abutting ends of the board. When the wallboard is taped, moisture from the cement enters the board and softens the paper. After the cement dries, which may take weeks, depending upon the humidity and location of the wall, the extreme edges of the wallboard tend to raise, which, without the use of this invention would produce an objectionable line across the finished surface of the wall.

The effects of the drying and aging of the finished joint

is best illustrated in Fig. 4 which shows the upturned beading **24** at the edges of the boards **10** and **12** and also the shrinkage of the cement **18** in the joint area. It is noted that the surface of the joint is unaffected by any changes which take place immediately below the strip **22** since the joint treatment is supported in the previously finished condition. Without such a strip, the outer surface of the joint would follow the contours of the shrunken material and the beaded ends with the result that an irregularity would appear on the surface which would be readily noticeable under normal lighting conditions especially when found in the ceiling construction. Also with the metal strip **22** in place, a few thousandths of an inch spacing results which will accommodate the twisting action of the wallboard if it takes place beneath the center tape. The smooth, uniform surface established by working the cement in the ordinary installation is not affected therefore, and the unsightly lines which would otherwise appear due to the twisting of the wallboard are eliminated. It is possible, therefore, to produce a permanent fine finish and eliminate difficult and expensive reworking of the joints some time after the walls have been finished and decorated.

It is to be understood that the specific nature of the present disclosure is not intended to be restrictive or confining and that various rearrangements of parts and modifications of design may be resorted to without departing from the scope or spirit of the invention as herein claimed.

Having thus described my invention, what we claim and desire to be secured by Letters Patent is:

1. In dry wall construction a pair of panels attached to a supporting member in abutting relation to form a joint, a strip of thin metal over said joint secured by cement, a web of thin pape-like material covering said strip and being cemented to said panels at each side of said strip, and a coating of cement applied over said web to form a smooth continuation of the surface of said panels.

2. In dry wall construction a pair of panels attached to a supporting member in abutting relation to form a joint, a strip of thin metal over said joint secured by cement, a web of thin pape-like material covering said strip and being cemented to said panels at each side of said strip, and a coating of cement applied over said web to form a smooth continuation of the surface of said panels, said strip being affixed to said web along the center line thereof.

3. In dry wall construction a pair of panels attached to a supporting member in abutting relation to form a joint, cement on said panels adjacent said joint, a strip of thin metal over said joint, a web of thin paper-like material covering said strip and having a portion at each side of said strip respectively, a coating of cement applied over said web to form a smooth continuation of the surface of said panels.

4. In dry wall construction a pair of panels attached to a supporting member in abutting relation to form a joint, cement on said panels adjacent said joint, a strip of thin metal over said joint, a web of thin paper-like material covering said strip and having a portion at each side of said strip respectively, a coating of cement applied over said web to form a smooth continuation of the surface of said panels, said strip being affixed to said web along the center line thereof.

References Cited in the file of this patent

UNITED STATES PATENTS

1,703,667	Green	Feb. 26, 1929
1,970,989	Walker	Aug. 21, 1934
1,999,741	Schultz	Apr. 30, 1935
2,181,530	Davenport	Nov. 28, 1939
2,231,529	Dey	Feb. 11, 1941
2,314,523	Speer	Mar. 23, 1943

FOREIGN PATENTS

580,999	Great Britain	Sept. 26, 1946