May 20, 1969 C. D. SWANSON 3,444,657

JOINT STRUCTURE FOR DRY WALL BUILDING PANELS

Filed Oct. 31, 1966

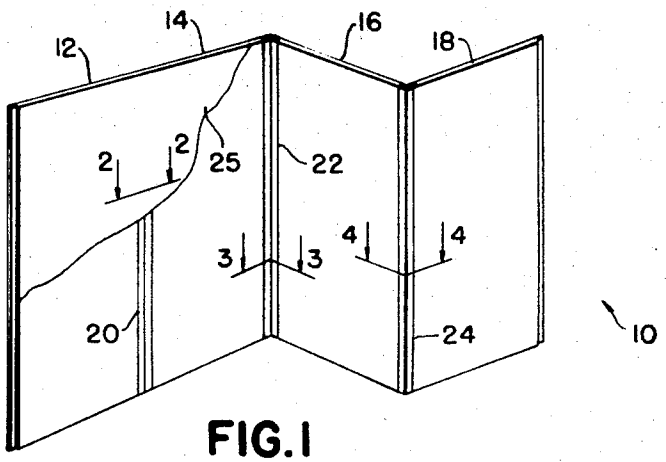


FIG. 1

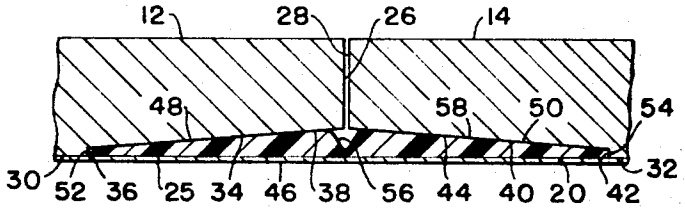


FIG. 2

FIG. 4

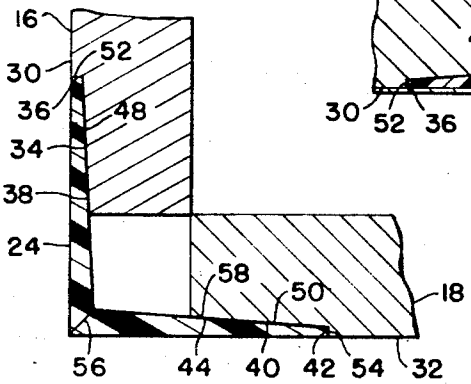


FIG. 5

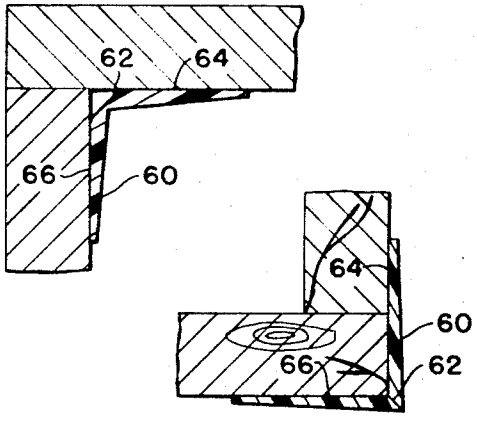


FIG. 6

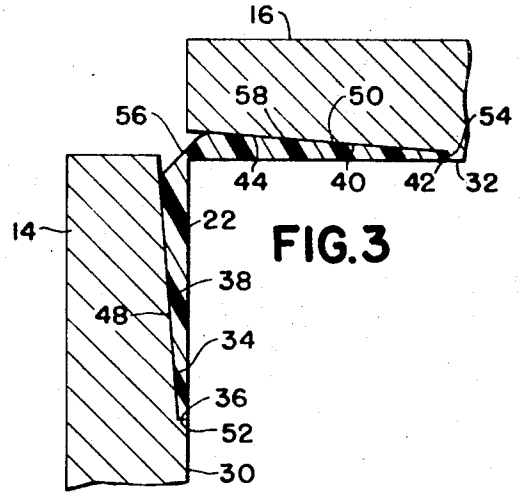


FIG. 3

INVENTOR
CLIFFORD D. SWANSON
BY Whittemore, Hulbert & Belknap
ATTORNEY

United States Patent Office 3,444,657
Patented May 20, 1969

3,444,657

JOINT STRUCTURE FOR DRY WALL BUILDING PANELS

Clifford D. Swanson, 2101 Wellesley Drive, Lansing, Mich. 48910

Filed Oct. 31, 1966, Ser. No. 590,584
Int. Cl. E04b 1/00, 5/00, 7/00
U.S. Cl. 52—288 3 Claims

ABSTRACT OF THE DISCLOSURE

Joint structure for dry wall building panels is disclosed. The structure includes recesses in the exposed surface of the adjacent panel edges having vertical transverse abutment surfaces extending substantially perpendicularly of the exposed panel surfaces and a plastic joint strip positioned within the recesses at the edges of the adjacent building panels having a width slightly larger than the total dimension of the recesses in the adjacent building panel edges and vertically extending abutment surfaces at the edges thereof engageable with the abutment surfaces in the recesses in the building panels, whereby the building panels may be moved toward each other to insure abutment of the edge surfaces of the joint strip with the abutment surfaces of the recesses.

The joint strip is provided with an unexposed surface sloping toward the exposed surface thereof away from the longitudinal center of the joint strip and the recesses are provided with complementary surfaces. A longitudinally extending groove is provided centrally of the joint strip on the unexposed surface thereof whereby the joint strip may be deformed to provide either interior or exterior corners in conjunction with the building panels. The joint strip is dimensioned with respect to the recesses in the edges of the building panels so as to provide an exposed surface flush with the exposed surface of the building panels and a wall covering material is provided over the exposed surface of the building panels and the joint strip to provide a flush, smooth wall surface.

The invention relates to building structures and refers more specifically to structure for providing joints in dry wall construction and for corner mouldings and the like.

In the past closing joints between abutting edges or dry wall panels in dry wall construction to provide a smooth wall surface has been a particular problem. Thus, the joints have previously been plastered over and have been defective in that cracks have occurred along the plastered joint between the dry wall panels. Cloth, metal and other reinforcing strips have been positioned across the joint between the edges of adjacent dry wall panels to prevent cracking of the construction at the joint which reinforcing strips have later been plastered over, sanded, plastered over and sanded again, a plurality of times to provide a smooth wall surface.

Such construction is undesirable in that the plaster takes time to dry whereby even if the plaster does not crack, some of the advantages of dry wall construction are lost. Thus, for example, it is necessary to wait for plaster to dry to finish the walls as by painting.

Also, the prior reinforcing strips have usually been inefficient in making interior corner and exterior corner joints in the dry wall construction where required. Further the reinforcing strips of the past have often been constructed of stiff elongated material and have therefore been difficult to ship and store.

In addition wherein interior and exterior corner mouldings have been provided in the past, it has usually been the practice to provide separate moulding members for the interior and exterior corners having a cross section

including portions extending perpendicularly to each other. The interior and exterior corner mouldings of the past have therefore been restricted in their decoration since for example it is difficult to imprint an acceptable wood grain on surfaces extending at an angle to each other.

It is therefore one of the purposes of the present invention to provide improved structure for finishing a joint between the edges of adjacent dry wall panels.

Another object is to provide building structure for closing the joint between abutting edges of adjacent dry wall panels comprising a plastic joint strip secured in a recess in the dry wall panels adjacent the edges thereof at the exposed surfaces of the dry wall panels.

Another object is to provide building structure as set forth above wherein the recesses and the plastic joint strip are tapered toward the exposed surfaces of the dry wall panels away from the abutting edges of the panels.

Another object is to provide building structure as set forth above wherein the plastic joint strip is held within the recesses by an adhesive.

Another object is to provide building structure as set forth above wherein the plastic joint strip includes a longitudinally extending central groove in the surface thereof secured to the dry wall panels whereby the plastic joint strip may be bent at ninety degrees in either direction from flat about a longitudinally extending central axis.

Another object is to provide building structure as set forth above and further including paint extending over the exposed surfaces of both the dry wall panels and plastic joint strip.

Another object is to provide an improved joint strip for dry wall construction.

Another object is to provide a joint strip for dry wall construction which is constructed to be used at interior or exterior joints as well as at flat joints.

Another object is to provide a joint strip for dry wall construction which may be rolled into rolls for shipping and transporting.

Another object is to provide a plastic joint strip for dry wall construction including means integral therewith for securing the joint strip in position on the dry wall construction.

Another object is to provide a joint strip for dry wall construction which requires a minimum of additional finishing to provide a complete joint smooth and even with the exposed surface of dry wall panels with which it is used.

Another object is to provide improved moulding structure.

Another object is to provide moulding structure which is readily adapted to both interior and exterior corner moulding.

Another object is to provide moulding structure as set forth above and further including means integral therewith for securing the moulding structure in position on the building structure.

Another object is to provide building structure as set forth above which is simple in construction, economical to manufacture and efficient in use.

These and other objects will become more apparent as the descriptinon proceeds, especially when taken in conjunction with the figures of the drawing, wherein:

FIGURE 1 is a perspective view of building structure including joint strips constructed in accordance with the invention.

FIGURE 2 is an enlarged partial section view of the building structure illustrated in FIGURE 1 taken substantially on the line 2—2 in FIGURE 1.

FIGURE 3 is an enlarged partial section view of the building structure illustrated in FIGURE 1 taken substantially on the line 3—3 in FIGURE 1.

FIGURE 4 is an enlarged partial section view of the building structure illustrated in FIGURE 1 taken substantially on the line 4—4 in FIGURE 1.

FIGURES 5 and 6 are cross section views of a portion of a building structure illustrating the plastic strips of the invention used as interior and exterior corner mouldings.

With particular reference to the figures of the drawing, one embodiment of the present invention will now be considered in detail.

As shown in FIGURE 1, the building structure **10** includes the dry wall building panels **12, 14, 16** and **18** and the joint strips **20, 22** and **24**. The exposed surfaces of the building structure **10** is partly finished with paint **25**. The joint strip **20** is used in a flat joint while the joint strips **22** and **24** are used in an interior corner joint and an exterior corner joint respectively.

The joint strips **20, 22** and **24** as well as the panels **12, 14, 16** and **18** are respectively identical unless so indicated. Therefore, the same reference characters will be used to designate the details therefo.

As best shown in FIGURE 2 the dry wall panels **12** and **14** which may be of plaster board, gypsum wallboard or other rigid wall board are positioned in the same plane and have adjacent abutting edges **26** and **28**. The dry wall panels **12** and **14** further have the exposed surfaces **30** and **32** respectivelly. The exposed surface **30** and the edge **26** of the dry wall panel **12** are provided with a recess **34** having an inner abutment surface **36** and a longer sloping surface **38** which slopes toward the exposed surface **30** of the dry wall panel **12** from the edge **26** of the dry wall panel **12** toward the abutment surface **36**. The recess **34** extends for the full height of the dry wall panel **12** along the edge **26** thereof at the exposed surface of the panel. A similar recess **40** is provided in the dry wall panel **14** at the edge **28** thereof and includes the abutment surface **42** and the sloping surface **44**.

The joint strip **20** is an elongated flexible plastic member. The plastic which the joint strip **20** is constructed of may be semi-rigid vinyl material having substantially no memory characteristics, that is the plastic material should retain any configuration into which it is deformed. One such material is sold by the B. F. Goodrich Company under the trademark Geon 82816.

As shown in FIGURE 2 the joint strip **20** includes a substantially flat exposed surface **46**. The unexposed surfaces **48** and **50** taper from the center of the joint strip **20** outwardly toward the exposed surface **46** toward the abutting surfaces **52** and **54** at the edges of the joint strip.

The joint strip **20** further has a deep groove **56** extending the full length thereof centrally of the joint strip between the surfaces **48** and **50**. The groove **56** is so dimensioned that the joint strip **20** may be bent 90 degrees from flat as illustrated in FIGURE 2 to form an interior corner joint or an exterior corner joint with equal facility.

Thus as illustrated in FIGURE 3 the joint strip **22** is bent to form an interior corner joint in conjunction with the building panels **14** and **16**. With the interior joint illustrated in FIGURE 3 it is necessary to separate the panels **14** and **16** somewhat as shown.

An exterior joint formed between the building panels **16** and **18** and in conjunction with the joint strip **24** is illustrated in FIGURE 4. It will be noted that when an exterior corner is formed with the joint strip **24**, it is necessary to remove a portion of the abutting edges of the building panels **16** and **18**.

In accordance with the usual construction the building panels **12, 14, 16** and **18** are secured to a frame structure such as provided by wood studs or the like by convenient means, such as nails.

The joint strips **20, 22** and **24** are provided with an adhesive material **58** on the unexposed sides thereof so that they may be secured in place in the recesses in the dry wall panels. The adhesive material may be any of a

number of well known adhesive which dry only on prolonged exposure to air and which may be protected before use of the joint strips **20, 22** and **24** by the usual treated paper placed on the surface of the adhesive on the joint strips. At the time of use the protecting paper is stripped from the joint strips to expose the adhesive for securing the joint strips in the recesses.

A completed dry wall construction may then be accomplished by painting the dry wall panels and the joint strips to completely cover the fine line separating the exposed surfaces of the joint strips and abutting dry wall panels. If necessary before painting some slight sanding may be accomplished to insure a smooth transition between the joint strips and the dry wall panels.

Thus, it will be seen that in accordance with the invention there is provided a particularly simple, economical and efficient building structure providing flat, interior and exterior joints in dry wall construction requiring no wet plaster or separate attaching members. In addition it will be readily recognized that the joint strip material may be furnished in large coils to be unwound and used in any desired length thus eliminating shipping, storage and inventory problems.

As shown in FIGURES 4 and 5 applicant's elongated joint strip or a modification thereof **60** which is provided with the same longitudinally extending central groove **62**, the same tapered surface **64** and the same adhesive on the unexposed surface **66** may be used for moulding in conjunction with wood or other building materials at either interior corners as illustrated in FIGURE 5 or exterior corners as illustrated in FIGURE 6.

The moulding members **60** illustrated in FIGURES 5 and 6 again have the particular advantage of requiring only a single member for interior and exterior corner mouldings and require no separate unsightly attaching means, such as nails driven through the usual wood mouldings. In addition, as pointed out in conjunction with the joint strip for dry wall construction above, the moulding members **60** may be produced and shipped in large coils having the adhesive protected by treated paper so that individual sections may be cut from a large coil and used as required as moulding of various lengths. An added advantage of the moulding members **60** is that since they can be produced with the exposed surface substantially flat, it is much easier to produce a design on the mould, such as for example a simulated wood grain which is very difficult to produce on exposed surfaces at angles to each other.

While one embodiment of the present invention and a modification thereof have been considered in detail, it will be understood that other embodiments and modifications are contemplated by the inventor.

What I claim as my invention is:

1. Building structure comprising two dry wall panels having adjacent vertically extending edges and exposed surfaces, recesses in the exposed surfaces at the adjacent edges of the dry wall panels having a longitudinally extending abutment surface positioned inwardly from the said adjacent edges thereof and extending transversely of the wall panels substantially perpendicularly to the exposed surfaces thereof, said recesses further including surfaces extending from the inner edge of the abutment surfaces inwardly of the wall panels toward the adjacent edges thereof, a plastic joint strip positioned within the recesses in the exposed surfaces of the wall panels including an exposed surface flush with the exposed surface of the wall panels, abutment surfaces at the edges thereof extending vertically and transversely of the joint strip substantially perpendicularly to the exposed surface thereof, an unexposed surface sloping toward the exposed surface from the center of the joint strip and a longitudinally extending groove in the unexposed surface centrally thereof extending at substantially forty-five degrees from the exposed surface of the joint strip, whereby the joint strip may be bent longitudinally substantially ninety

degrees in either direction along the longitudinal center line thereof, said joint strip being slightly wider than the dimension of the recesses in the plane of the wall panels, whereby the wall panels may be moved toward each other in assembly to provide surface-to-surface engagement of the edges of the joint strip and the abutment surfaces of the wall panels, an adhesive operable between the wall panels and joint strip for securing the joint strip in the recesses and wall covering means extending over the exposed surfaces of the wall panel and joint strip to provide a flush wall surface.

2. Structure as set forth in claim 1, wherein the wall panels are positioned at substantially ninety degrees to each other and the joint strip is bent to form a ninety degree exterior wall corner.

3. Structure as set forth in claim 1, wherein the wall

panels are positioned at substantially ninety degrees to each other and the joint strip is bent to form a ninety degrees interior wall corner.

References Cited

UNITED STATES PATENTS

1,657,332	1/1928	Absmeier	52—417
3,200,547	8/1965	Johnson	52—288

FRANK L. ABBOTT, *Primary Examiner.*

P. C. FAW, JR., *Assistant Examiner.*

U.S. Cl. X.R.

52—417