Feb. 20, 1968 J. R. McKINNIE 3,369,831

COVER STRIP IN EXPANSION AND CONTRACTION JOINTS

Filed Jan. 21, 1966

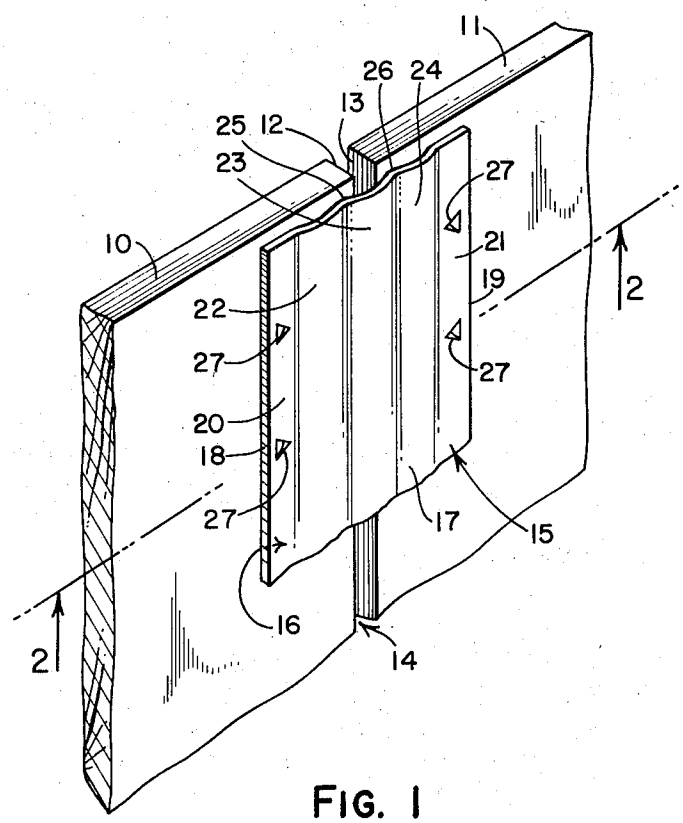


FIG. 1

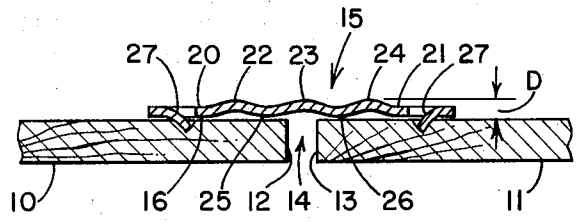


FIG. 2

INVENTOR.
JAMES R. MC KINNIE
BY Elliott & Pastoriza
ATTORNEYS

United States Patent Office 3,369,831 Patented Feb. 20, 1968

3,369,831

COVER STRIP IN EXPANSION AND CONTRACTION JOINTS

James R. McKinnie, 3211 McManus Ave., Los Angeles, Calif. 90034

Filed Jan. 21, 1966, Ser. No. 522,171
2 Claims. (Cl. 287—20.92)

ABSTRACT OF THE DISCLOSURE

An elongated strip for covering joints in adjacent panels to provide a neat appearance and yet permit expansion and contraction of the panels to take place. The strip includes flat longitudinal marginal portions between which there are provided rib portions in an undulating manner to provide the desired flexibility. The rib portions have large radii of curvature relative to the distance the ribs extend above the plane of the panels so that a relatively smooth external appearance is provided. In addition, apex portions on the under surface of the strip lie generally in the plane of the flat margin portions of the strip so that no portions of the strip itself extend into the joint between the adjacent panels. The strip is secured in place by suitable fastening means in the flat longitudinal marginal portions of the strip.

This invention relates generally to building construction and more particularly to a covering strip for joints between wall panels and the like.

It is well known in building construction practice that wall panels and the like must be installed with the adjacent edges being somewhat spaced from each other to allow for expansion and contraction of the panels due to temperature changes. Moreover, when panels made of wood or wood products are used, the exposed edges may swell or thicken due to changes in the humidity of the ambient air. Accordingly, wooden panels are particularly susceptible to expansion and contraction in several directions, including those along and normal to the plane of the panel surface as well as angularly due to uneven or non-uniform expansion and contraction of the exposed panel edges.

The above-described conditions are commonly called creeping and warping, and experience has shown that conventional covering devices are not satisfactory in protecting the panel joints against exposure to the elements, while at the same time accommodating unavoidable expansion and contraction of the panels. Many conventional covering devices comprise relatively complex arrangements which allow for expansion and contraction of the panel joint only in a direction parallel to or along the plane of the outer panel surfaces. Accordingly, swelling and warping of the panel edges, causing movement in a direction normal to or at an angle with respect to the panel surfaces, is not adequately accommodated. Moreover, conventional joint covering devices are often constructed of relatively large thicknesses so as to be prominently visible at the panel joints, thereby presenting an unsightly or undesirable appearance in the overall wall structure.

With the foregoing in mind, it is accordingly a primary object of this invention to provide a joint covering strip capable of accommodating expansion and contraction of the joint in all directions, while at the same time effectively protecting the joint against exposure to adverse external conditions.

Another object is to provide a joint covering strip designed to cover panel joints in such a manner so as to be substantially unnoticeable to the end that the overall wall structure presents a smooth appearance.

Another object is to provide a joint covering strip of

simple and rugged construction to the end that the strip may be manufactured and installed economically.

Briefly, these and many other objects and advantages of this invention are attained by providing a relatively thin cover strip made, for example, of aluminum and including longitudinal margin portions and a flexible median portion interconnecting the margin portions so as to overlap a joint defined between edges of adjacent wall panels or the like. The margin portions are adapted to be positioned on the respective panels forming the joint and may include integrally formed tab members bent inwardly so as to project into the surface of the panels to thus secure the cover strip to the panels.

The flexible median portion of the strip preferably includes a plurality of arcuate raised rib portions extending parallel to the joint and of large radii of curvature relative to the distance of the ribs above the plane of the panels to provide a smooth appearance. These rib portions are designed to flex or bend in response to expansion and contraction of the joint, while permitting the strip to remain firmly secured to the panels.

A better understanding of the invention will now be had by referring to a preferred embodiment thereof as illustrated in the accompanying drawings, in which:

FIGURE 1 is a fragmentary perspective view of a cover strip of the invention secured to a pair of wall panels so as to extend over the joint formed therebetween; and,

FIGURE 2 is a sectional view taken in the direction of arrows 2—2 of FIGURE 1.

Referring first to FIGURE 1, there is shown a pair of wall panels **10** and **11** having longitudinal edges **12** and **13**, respectively, spaced apart to define a longitudinal gap or joint **14** therebetween.

In accordance with the invention, a cover strip **15** made, for example, of aluminum is shown secured to the respective wall panels so as to extend over the joint **14**. The cover strip **15** is formed with inner and outer sides **16** and **17**, respectively, the inner side **16** being adapted to face the surfaces of the panels **10** and **11** as shown.

The width or lateral extent of the strip **15** is defined by parallel edges **18** and **19**, respectively; and, in practice, it has been found that a width of approximately three inches is satisfactory for most purposes. It will, of course, be understood that the width of the strip may be varied as desired to accommodate joints of various sizes.

The strip **15** includes a pair of flat longitudinal margin portions **20** and **21**, respectively, which are adapted to be positioned on the panels **10** and **11**, respectively, in parallel relationship to the joint **14**.

In order to accommodate expansion and contraction of the joint **14**, the strip **15** further includes a flexible median portion including a plurality of symmetrical arcuate rib portions shown at **22**, **23**, and **24**. The rib portions are disposed in parallel relationship and extend over the joint **14** to thus interconnect the margin portions **20** and **21**.

As best shown in FIGURE 2, the rib portions **22** through **24** form parallel apex portions **25** and **26** on the inner side **16** of the strip and are preferably disposed in the plane formed by the sides of the margin portions **20** and **21** which contact the panels **10** and **11**. By this arrangement, relative movement of the panels **10** and **11** in any direction may be accommodated by the strip **15** without the possibility of the rib portions projecting into and binding between the edges **12** and **13** of the respective panels.

The strip **15** is adapted to be secured to the panels by means of tab members **27** which are integrally formed with the margin portions **20** and **21**. As shown in FIGURE 1, each of the tab members **27** is preferably formed of triangular shape; and, as shown in FIGURE 2, the tab members **27** are bent inwardly so as to project into the

surface of the panels to thus firmly hold the strip in position over the joint 14. It will be understood that the margin portions of the strip may be secured to the respective panels by means including nails and adhesives, if desired, although the above-described tab members have been found to be highly satisfactory for most conditions. In some instances, it has been found that in addition to the engagement of the tabs into the panels, nails may be conveniently driven into the panels through the openings in the strip defined by the inturned tabs.

As best shown in FIGURE 2, the strip 15 is uniquely designed to project only slightly above or away from the surfaces of the panels a distance D as shown. This distance is preferably maintained as short as possible in order that the strip "blend in" with the overall wall surface to thus eliminate unsightly or undesirable ridge lines at the joints of the panels. Towards this end, each of the arcuate rib portions 22 through 24 is designed of relatively large radius in cross section as shown. In FIGURES 1 and 2, the thickness D is greatly exaggerated for purposes of clarity.

In operation, the cover strip functions to protect the joint against adverse external conditions, while permitting the joint to expand and contract in response to humidity and temperature changes. The flexibility of the median or ribbed portion of the strip permits the panels to expand or contract in several directions. Moreover, non-uniform, relative movement between the panels is effectively accommodated by the strip. Thus, for example, conditions may be encountered which cause a first portion of the joint to expand and a second portion to contract. In such a case, the median or ribbed portion of the strip will expand at the first portion and contract at the second portion without damage to the panels or the strip.

The cover strip is also effective to accommodate movement of the panels in a direction generally perpendicular to the surfaces of the panels. In this regard, wooden panels are particularly susceptible to swelling at the edges which may cause the thickness of one of the panels to increase more than that of the adjacent panel. The consequent shift or movement between the panels in a direction generally perpendicular to the surface of the panels is accommodated by the strip without binding or undue stress.

From the foregoing, it will be apparent that the joint covering strip of this invention provides a greatly simplified and effective means for covering joints in building structures while accommodating expansion and contraction of the joint in all directions. Various changes falling within the scope and spirit of this invention will occur to those skilled in the art. The joint covering strip is, accordingly, not to be thought of as limited to the specific embodiment set forth.

What is claimed is:

1. An expansion and contraction joint comprising: a pair of structural panels disposed in spaced relationship to define an elongated joint therebetween; an elongated covering strip having longitudinal flat margin portions positioned on said panels, said strip including a flexible median portion interconnecting said margin portions and spanning said joint, said median portion including a plurality of symmetrical arcuate rib portions of large radii of curvature relative to the distance said rib portions extend above the plane of said panels, said rib portions defining laterally spaced parallel apex portions formed on the inner side of said strip and positioned generally in the plane formed by the inner surface of said flat margin portions on either side of said joint so that no portion of said strip extends in between the adjacent edges of said panels defining said joint; and securing means disposed in said margin portions engaging said panels, whereby said strip is secured to said panels so that movement therebetween is accommodated by flexure of said median portion of said strip and whereby a smooth appearing outer surface is provided on said strip.

2. The subject matter of claim 1, in which said securing means includes triangular portions integrally formed with said margin portions and being bent inwardly therefrom so as to penetrate into the surface of said panels.

References Cited

UNITED STATES PATENTS

1,053,267	2/1913	Benson et al.	52—573
1,373,036	3/1921	Upson	52—573
2,853,871	9/1958	Compton	52—573
3,310,925	3/1967	Le Brun	52—573

CARL W. TOMLIN, *Primary Examiner.*

THOMAS F. CALLAGHAN, *Examiner.*

R. S. BRITTS, *Assistant Examiner.*