Sept. 8, 1970 B. M. SLAVENS 3,527,005

WALL CONSTRUCTION WITH COMPRESSIBLE SPLINES

Filed Nov. 12, 1968 3 Sheets-Sheet 1

FIG. 1

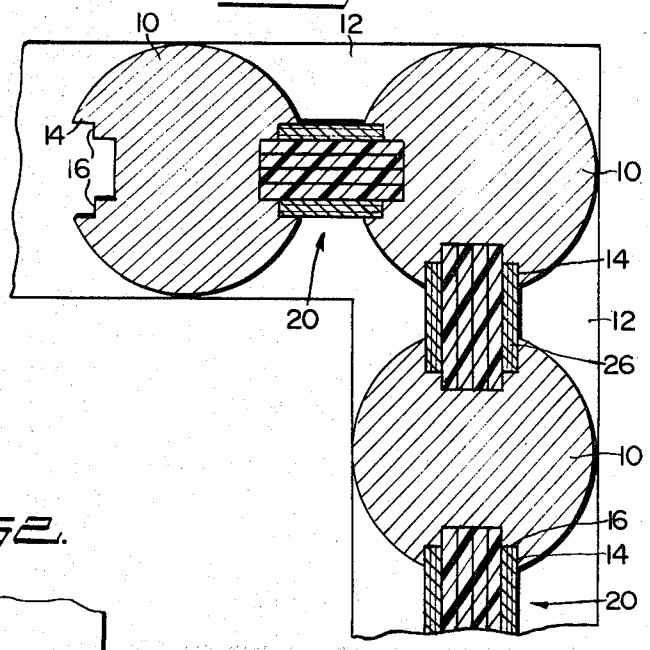


FIG. 2.

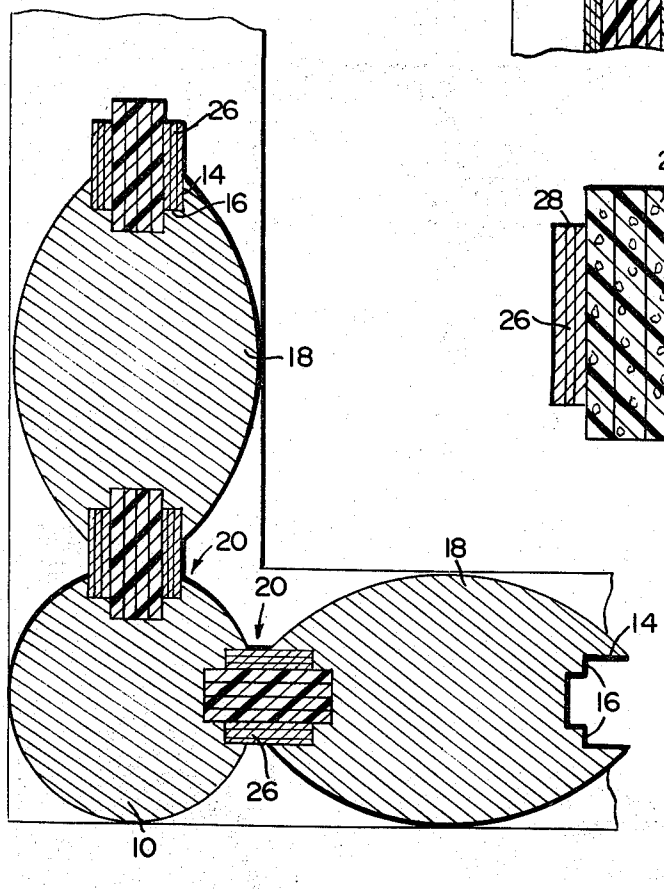
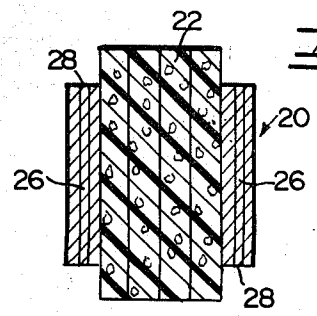


FIG. 3.



INVENTOR

BERT M. SLAVENS

Sept. 8, 1970 B. M. SLAVENS 3,527,005

WALL CONSTRUCTION WITH COMPRESSIBLE SPLINES

Filed Nov. 12, 1968 3 Sheets-Sheet 2

Fig 4.

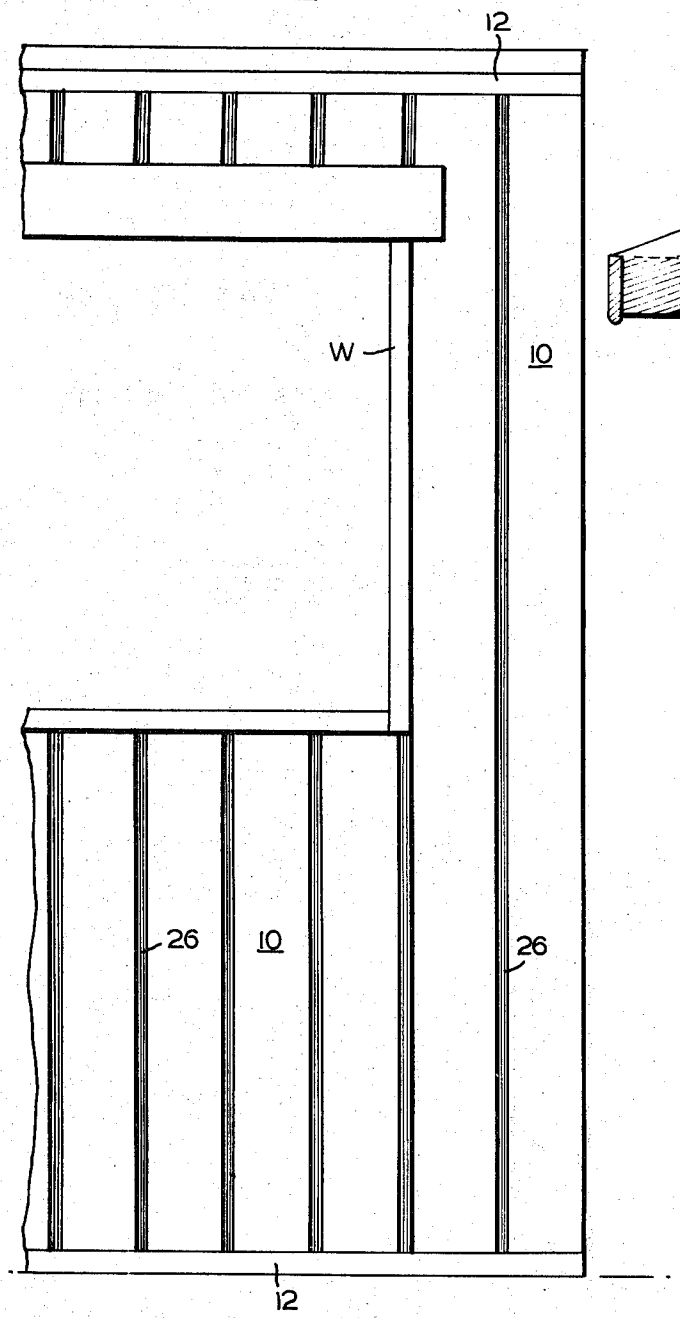
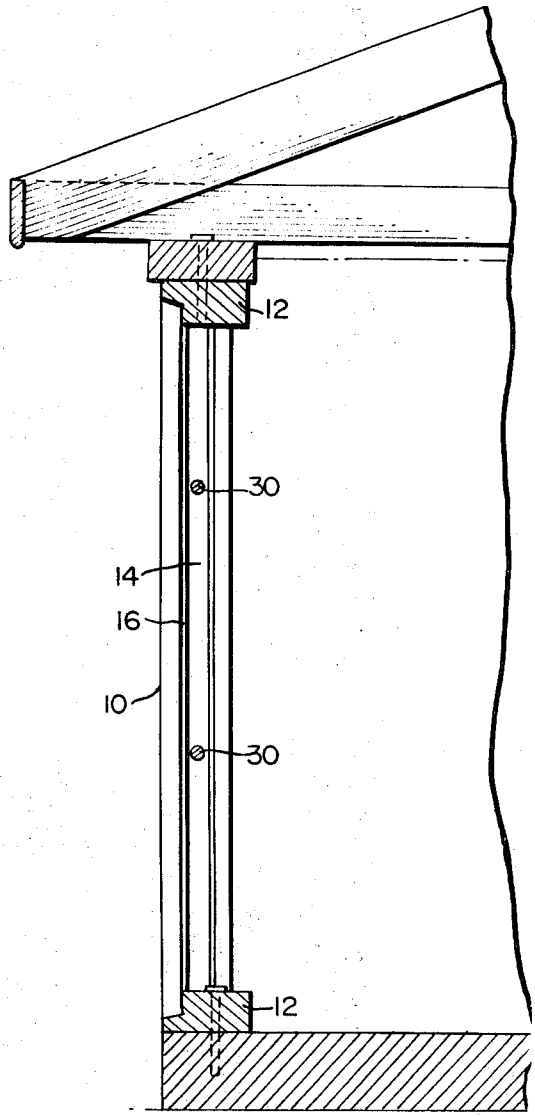


Fig 5.



INVENTOR
BERT M. SLAVENS

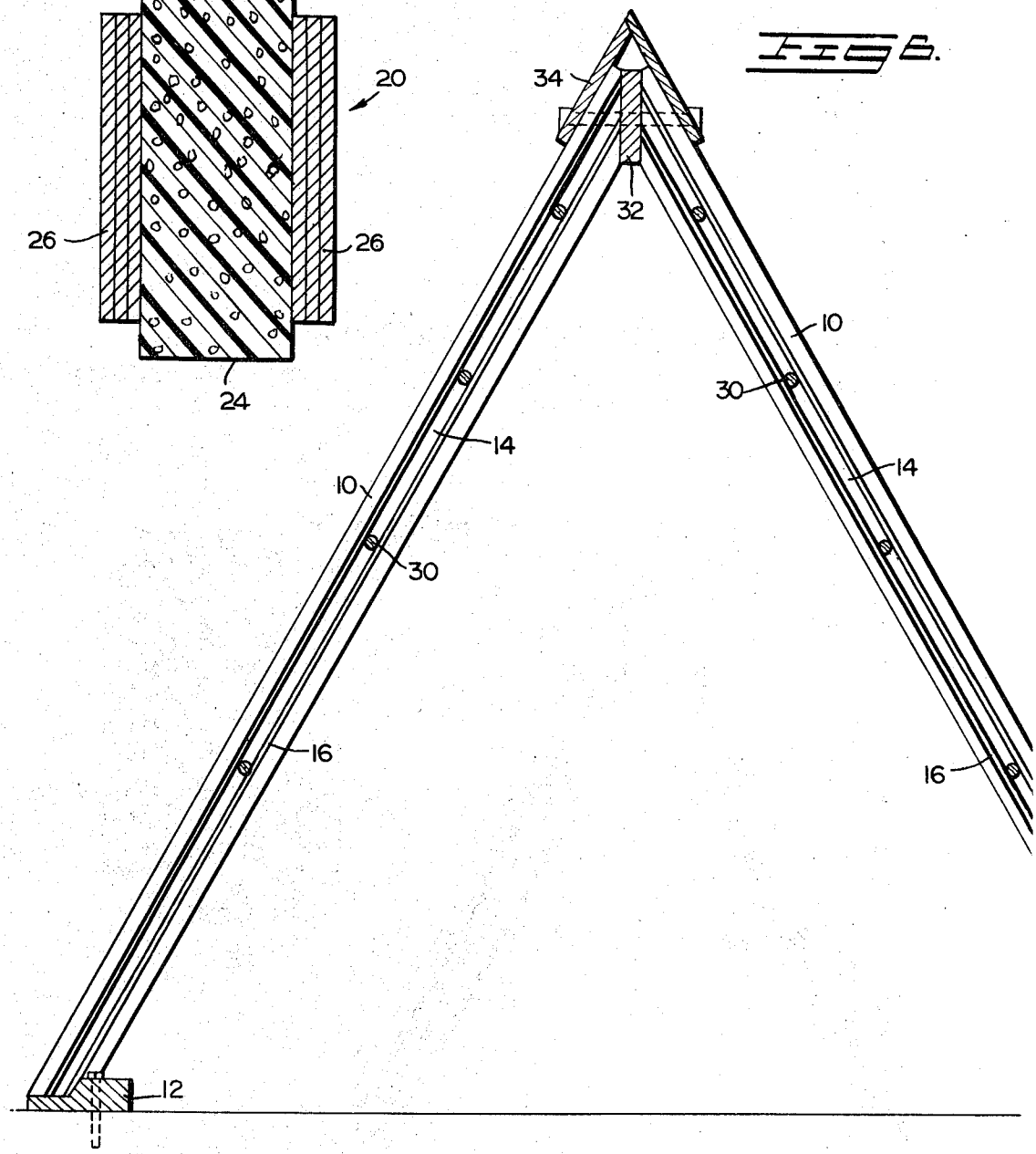
Sept. 8, 1970 B. M. SLAVENS 3,527,005

WALL CONSTRUCTION WITH COMPRESSIBLE SPLINES

Filed Nov. 12, 1968 3 Sheets-Sheet 3

Fig 7

Fig 8.



INVENTOR
BERT M. SLAVENS

United States Patent Office

3,527,005
Patented Sept. 8, 1970

3,527,005

WALL CONSTRUCTION WITH COMPRESSIBLE SPLINES

Bert M. Slavens, 577 Hooulu St., Kailua, Oahu, Hawaii 96734

Continuation-in-part of application Ser. No. 586,602, Oct. 10, 1966. This application Nov. 12, 1968, Ser. No. 775,016

Int. Cl. E04b *1/10*; E04c *2/10, 1/10*

U.S. Cl. 52—227 7 Claims

ABSTRACT OF THE DISCLOSURE

Wall construction composed of substantially parallel timber members having opposed dados and a spline in the form of a compressible insulating member in compressed sealing engagement with adjacent opposed dados.

This application is a continuation-in-part of my copending application Ser. No. 586,602, filed Oct. 10, 1966, now abandoned.

The invention relates to improvements in wall construction, preferably utilizing timber members, logs for example, and is concerned, more particularly, with improvements in spline seals for interconnecting such members.

The principal object of the invention is to provide a wall construction which features a novel spline for interconnecting the substantially parallel wall forming members, the spline being formed of compressible insulating material compressed in engagement with opposed dados provided in adjacent wall forming members for forming a pressurized interconnecting insulation shield. The spline, as contemplated by the invention, also provides adjustment for any lack of precision in the form of the dados or positioning of the wall forming members and eliminates the necessity of chinking and caulking or shrinkage and slippage of standard wood splines heretofore employed.

Another and more specific object of the invention is to provide a spline of compressible material which is cut longer than the depth of the dados with which it is to be engaged so that lengthwise compression of the spline by tightening of lag bolts or manual or other means of pressure will form the desired pressurized seal.

The invention also contemplates the provision of rigid board members at opposed sides of the compressible spline engagable with shoulders extended outwardly of the dados to fit the spline within the dados and also to limit the lengthwise compression of the spline into the dados.

Such board members control the spacing of the wall forming members and add firm cross-wise pressure on the compressible spline core. Also, the board members, being the only exteriorly exposed part of the spline connection, may be surfaced in any manner to provide the interior and exterior appearance desired for the wall construction.

Another object of the invention is to provide wall forming members and interconnecting spline wall construction having a pleasing appearance in accordance with modern architectural concepts particularly when employed with logs or other timber members.

In the drawings:

FIG. 1 is a fragmentary horizontal sectional view through a corner portion of a wall construction utilizing logs or log cores and embodying the invention;

FIG. 2 is a view similar to FIG. 1 but of a wall construction utilizing logs and milled timbers;

FIG. 3 is an enlarged sectional view of a spline constructed in accordance with the invention;

FIG. 4 is a fragmentary elevational view of a wall construction in accordance with the invention with a window assembly;

FIG. 5 is a fragmentary vertical sectional view of a wall before insertion of the splines but showing the lag bolts or through rods in section and one form of milled top and bottom plates for the wall;

FIG. 6 is a fragmentary view similar to FIG. 5 but taken through an A-frame or chalet type building wall and showing one form of ridge board and ridge shake assembly; and

FIG. 7 is an enlarged sectional view of another form of spline construction in accordance with the invention.

Referring more particularly to the drawings, wherein like numerals refer to like parts, the fragmentary horizontal sectional view of FIG. 1 illustrates a wall construction utilizing logs or log cores, such as after peeling of the logs for plywood, **10** and a top or bottom cap or base **12** for the wall. Dados **14**, as shown, are cut into opposed portions of the log members **10** and the dados **14** are each provided with inwardly extending shoulders **16** for a purpose to be hereinafter described.

The similar view of FIG. 2 illustrates the same construction but utilizing milled timbers **18** in combination with the logs **10**. It is to be understood, however, that the invention contemplates the use of any kind of timber or timber-like members or other wall forming members capable of being interconnected to form a wall. Such timber or other wall forming members form no part of the present invention except as they may be employed in combination with the novel spline and dado connecting means to be more fully described.

FIG. 4 illustrates in front elevation the wall construction of FIGS. 1 and 2 in assembly with a window indicated in its entirety at W.

The novel connecting spline of the invention, as best shown in the enlarged sectional view of FIG. 3, is indicated in its entirety at **20**. The spline **20** comprises a central rigid compressible insulation core or member **22** of foam or cellular material, polystyrene foam, for example. Such material is known in the building trades as rigid insulation, its rigidity being a contrast between its board type and other blanket or poured types. However, the cellular structure of such material enables it to be forced into a space smaller than the normal size of the uncompressed material and compressed within such space to form a pressurized tight seal. Such is the waterproof sealing effect of the member **22** when it is compressed within the dados **14** in accordance with the present invention.

The central member **22** of the spline may be formed of a plurality of laminated sheets of compressible plastic foam material as shown in FIGS. 1–3 or it may be formed of a single sheet **24** as shown in FIG. 7. In either form, the central compressible insulating member has extended end portions of greater length than the depths of the dados so that the insulating member is compressed lengthwise in the dados.

For controlling the spacing of the wall forming members and limiting the insertion of the central core members **22** or **24** in the dados **14**, hardboard members **26** are secured to opposed outer surfaces of the central core members intermediate their length. The hardboard members also apply firm cross-wise pressure against the central compressible cores when the splines **20** are seated in the dados **14** with their end wall portions **28** against the shoulders **14**.

The hardboard members **26** may be formed of any suitable rigid material such as wood flooring or plywood

strips or plastic material, Masonite for example. The hardboard members **26** may be a laminated strip structure as illustrated or in single strip sheets.

The outer surfaces of the members **26** are adapted for selected coloring, enameling, for example, or the application of any other ornamental matter to provide any desired decorative or architectural appearance to the exposed interior or exterior of the wall construction.

FIG. 6 illustrates a modified form of wall construction in an A-frame or chalet type building having a ridge board **32** and ridge shakes **34**. No other roofing is required because when the adjacent wall forming members **10** are interconnected by the splines **20** and the splines fitted and compressed in the dados **14**, such as by tightening of the bolts **30**, the completed structure is a combined waterproof wall and roof.

In assembling the wall construction, as contemplated by the present invention, a spline **20** is inserted in the opposed dados **14** of adjacent substantially parallel wall forming members **10**. Pressure is applied to thrust the adjacent wall forming members toward each other by the lag bolts **30**, manually or by any other means, and the end wall portions **28** of the relatively rigid outer board members **26** are seated against the shoulders **16** formed in the dados **14**. The extended ends of the central cores **22** or **24**, which are greater length than the depth of the dados, are sealed against the end walls of the dados **14** and the cores are compressed transversely or in the direction of their length. Such compression exerts outward pressure against the board members **26** toward their seating areas in the dados and the rigidity of the board members when seated in turn exerts cross-wise pressure against the central cores to complete full compression of the spline **20** in the opposed dados **14** to form a permanent insulating, waterproof, rot-proof and vermin-proof connection.

It is to be understood that the present invention is not confined to the precise construction or arrangement of parts as herein illustrated and described but embraces all such modifications thereof as may come within the scope of the following claims.

I claim:

1. In wall construction,

adjacent substantially parallel wall forming members;

opposed dados in said wall forming members;

a spline engaged in said opposed dados;

the said spline comprising;

a central elongated compressible core member;

relatively rigid board members at opposed sides of said central core member;

the opposed ends of said core member extending outwardly beyond the ends of said board members; and

the said core member being compressed between said opposed dados and between said board members to form a seal between said adjacent wall forming members.

2. The wall construction of claim **1** wherein the central core member is compressed lengthwise between said opposed dados and is compressed transversely between said opposed board members.

3. The wall construction of claim **1** wherein the dados are provided with inwardly opposed shoulders between their bottoms and open mouths and the end wall portions of the board members are seated against said shoulders.

4. The wall construction of claim **1** wherein the end portions of the compressible core member are of a greater length than the depths of the dados.

5. The wall construction of claim **3** wherein the extended end portions of the compressible core member are of a greater length than the depth of the dados between their bottoms and opposed shoulders.

6. The wall construction of claim **1** additionally including bolt means connected between adjacent wall forming members and the spline is compressed by tightening of said bolt means.

7. The wall construction of claim **1** wherein the central compressible core member comprises a polystyrene foam material.

References Cited

UNITED STATES PATENTS

180,975	8/1876	West	52—233
2,289,018	7/1942	Jonsrud	52—233
2,961,478	11/1960	Burns.	
3,003,810	10/1961	Kloote.	
3,175,652	3/1965	Brekell	52—586
3,327,441	6/1967	Kelly	52—309
3,256,657	6/1966	Phipps	52—227

JOHN E. MURTAGH, Primary Examiner

U.S. Cl. X.R.

52—233, 309, 586