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LOG WALL FLEX JOINT

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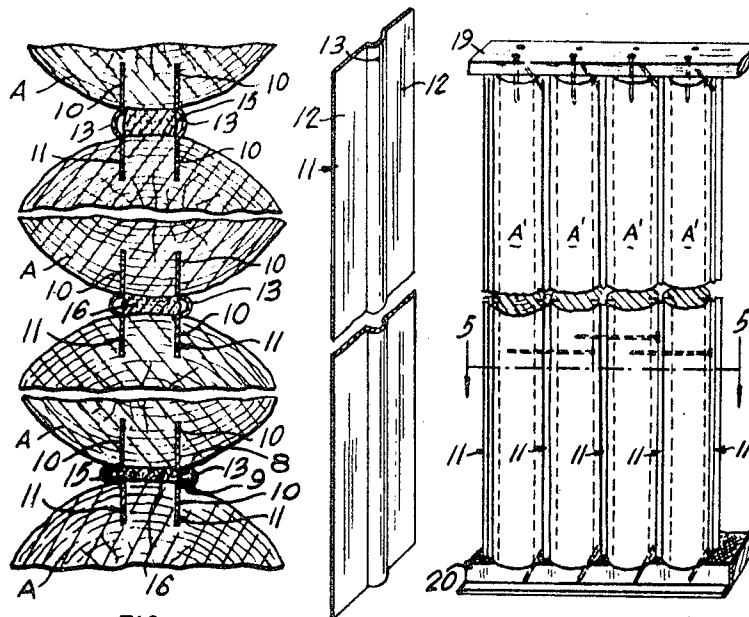


FIG. 1

FIG. 5

FIG. 3

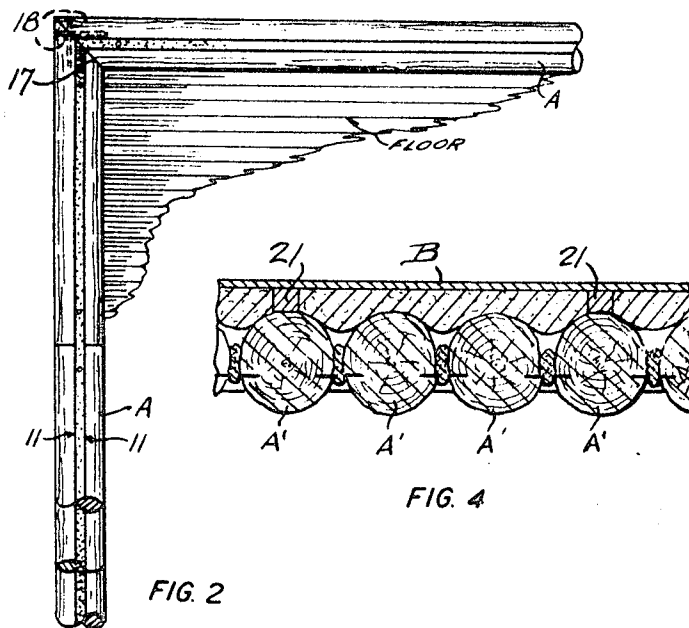


FIG. 4

FIG. 2

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LOG WALL FLEX JOINT

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1 Claim

ABSTRACT OF THE DISCLOSURE

A joint member adapted to be mounted in adjacent logs in the fabrication of a cabin or similar building structure. The joint member is designed to be secured to adjacent logs and said member is provided with a deformable central section that is designed to bulge outwardly when adjacent logs are forced toward one another so as to engage said adjacent logs and act as a stabilizer of the joint.

In buildings constructed of prepared logs such as peeled or milled logs arranged in longitudinal superposed relation, there is a great tendency of twisting and shrinkage as the logs dry out, and this twisting and shrinkage is directly reflected at the line of contact and/or joint between the longitudinally superposed peeled logs, so that disalignment of the joints between the logs results.

Attempts have been made to improve the joints of log buildings, and peeled logs have been provided with a longitudinal peripheral groove extending the full length of the log, and on the diametrically opposite side of the peripheral wall of an adjacent log, an integral longitudinally extending tongue is provided. When the two logs so equipped are positioned in superposed longitudinal arrangement, the tongue of one log engages the groove in the peripheral wall of an underlying log.

The joint between the logs is sometimes finished by grouting with a cementitious material or by caulking material which may be applied by a gun to the space adjoining or flanking the joint and on each side of the said joint.

However, as the logs dry, twisting and shrinkage sets in with the result that the wooden tongues break or crack and the caulking or grouting materials cracks and becomes displaced.

Other attempts have been made to provide a satisfactory joint between superposed prepared building logs, but owing to low efficiency, such joints have been extremely poor and the life of the joint of short duration.

These are a few of the objections or difficulties encountered on former log structures, and I have sought to overcome these difficulties by my log flex joint.

The present invention is directed to a joint member that is formed with coplanar marginal sections that are joined or connected by a deformable central section. The marginal sections are designed to be inserted into grooves formed in adjacent logs of a building wall or the like and in certain instances a pair of said joint members are utilized with a sealing material being inserted therebetween. The central section is susceptible of being deformed outwardly due to the pressure being exerted upon adjacent logs or due to the weight of the logs. The joint members may be formed of metal, plastic or other suitable material and they are arranged preferably in spaced, parallel relation to one another throughout the length of the logs.

A further object of my invention is to provide each strip-like joint member with a longitudinally extending

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median groove, and the grooves of two parallel joint members are outwardly disposed so that when pressure is applied to the juxtaposed logs of the wall, these median portions of the joint members are caused to bulge outwardly so diverging from each other, and a sealing material is inserted between the parallel joint members and distributed across and throughout the length of the joint.

A further object still of my invention is to divide the strips constituting the side walls of the joint into three sections, namely, longitudinal marginal sections of appreciable width which are coplanar, and an intermediate or centre section also of appreciable width and formed with a groove of appreciable size extending outwardly from the plane of the aforesaid marginal sections.

Another object of my invention is to utilize metallic, plastic or other suitable strip material which is rodent and insect proof and which is resistant to and inhibits rusting of the joints whereby longevity of the joints is established and maintenance of the joint is restricted to a minimum.

A further object of my invention is to construct my log flex joint so that it is strong and durable and may be readily examined periodically to ascertain if the joint is in good condition.

Other objects will be made clear as the specification develops.

So that the nature of my invention will be readily understood, I have illustrated an embodiment of the same which I shall describe in detail, but I wish it understood that I do not limit my invention to the specific form so illustrated and described, but reserve the right to modify the structural parts of the joint within the scope of my appended claim and without departing from the spirit of my invention.

In the drawings:

FIGURE 1 is a cross sectional elevation of a portion of a log wall in which the logs may be juxtaposed either horizontally or vertically, and showing the logs broken away transversely permitting the illustrating of the progressive closing of the joints between the juxtaposed logs.

FIGURE 2 shows a plan view of a pair of horizontally disposed logs which are mitred at their converging ends.

FIGURE 3 is a front elevation of a plurality of logs vertically disposed with my improved flex joint located between adjacent logs.

FIGURE 4 is a transverse section on the line 4—4 of FIGURE 3.

FIGURE 5 is a perspective view of a joint member or strip employed in conjunction with adjacent logs in a wall.

Like characters of reference refer to like parts in the several figures or the drawings.

Referring to the drawings, there is shown in FIGURE 1 a plurality of prepared logs A which may be debarked, peeled or milled, and in the periphery of each log a plurality of longitudinal grooves 10 are provided and these grooves are arranged in pairs.

Each pair of grooves 10 is located diametrically opposite another pair in the same log, and each pair of grooves is in parallelism. Each pair of grooves in one log register and are aligned with a similar pair of grooves in the periphery of an adjacent underlying or overlying log so that similarly located opposing grooves in adjacent logs are aligned or coplanar.

The grooves 10 are each of a substantial depth and extend the complete length of the log A in which they are formed. Coacting with each pair of aligned grooves 10 are a pair of spaced resilient strips 11, FIGURE 5, of suitable material such as metal or plastic which are similar in all respects and each pair of strips 11 con-

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stitute the side walls of the joint between juxtaposed logs. Each strip 11 of metal, plastic or the like is formed in three sections, namely, two marginal sections 12 of similar width and a median section 13, and the median section 13 is arcuate in cross section and bulges outwardly, while the marginal sections 12 are coplanar.

In forming a joint, two strips 11 are arranged in parallelism with one marginal section 12 of a strip engaging an adjacent groove 10 in a log A so that the arcuate median section 13 is outwardly disposed. When two strips 11 are so arranged in a log they form a channel 15 which extends the complete length of the supporting log and in this channel 15 a strip of resilient packing 16 is deposited. Any packing suitable for this purpose may be used.

A second log A is superposed on or located adjacent the first log and the upper flat marginal edges of the side walls of the joints are then engaged with a pair of parallel grooves 10 in the second log.

On pressure being applied to the upper log A, the grooves 10 will intimately embrace the upper planar marginal portion 12 of the joint walls 11, and the weight of the log and/or other applied pressure presses the groove 10 into intimate contact with the upper marginal edge of each coacting strip 11 and the arcuate median section 13 of the strips 11 of the joint wall will flatten outwardly in FIGURE 1, and as the building of the wall continues the joints between the logs will progressively close.

A feature of material importance is that as the joint is completed the arcuate median portion 13 of each strip 11 ultimately assumes the position illustrated at the lowermost joint shown in FIGURE 1, and the arcuate median portion 13 of the strip 11 of the joint form upper and lower concave surfaces 8 and 9, the upper of which cradle the upper log A while the lower concave surface 9 straddles an underlying portion of the periphery of the lower log.

This feature of the arcuate surfaces causes the laterally projecting portion of the joint to exert a wedging effect on the adjacent logs so overcoming any tendency of the upper log rolling laterally, and thus these arcuate concave surfaces 8 and 9 act as stabilizers of the joint.

In FIGURE 2 of the drawings tow debarked or peeled or milled logs A are arranged in converging relation and these logs form a mitred joint 17 at their point of contact and conventional toe-nails or other suitable fastening means 18 are used to firmly secure the two logs in contact at the mitred joint.

Referring now to FIGURES 3 and 4, it will be seen that the logs A' are vertically disposed with the adjacent logs in abutting relation, and these adjacent logs are connected by a flex joint similar in all respects to that described with respect to FIGURE 1.

An upper plate 19 engages with and is secured to the upper ends of the logs A' and a lower plate 20 engages

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the lower ends of the logs A'. This type of wall lends itself to a panelled interior finish and I have illustrated spaced nailing strips 21 of wood arranged at sixteen inch centres and secured to some of the logs A'.

The panels B are secured to the nailing strips 21 by nails or other suitable means and the space between the panels B and the logs A' is packed with a suitable insulating material.

While I have described my flex joint as consisting of two strip-like members, it will be realized that in some forms of structural walls it may be necessary to use only one strip-like member. Irrespective of the form of flex joint whether formed of a pair of parallel spaced side walls or a single side wall, the joint will function efficiently in both cases. The flexing of the median section of each strip insures that spring pressure is exerted on the marginal coplanar sections of the strips, so that these coplanar sections are at all times pressed into intimate contact with their respective coacting grooves.

From the above description it will be seen that I have invented a flex joint for log structures, and this flex joint will assure that inadvertent lateral displacement of the logs is eliminated, and a wall constructed of peeled or milled logs and using my flex joint lends itself to a finish which is very attractive and durable, vermin and draft proof, and adds to the aesthetic value of the building.

I claim:

1. A flex joint for use with juxtaposed logs arranged in spaced, parallel relation to one another and formed with at least one pair of longitudinally extending, diametrically disposed grooves in each log, the grooves of the juxtaposed logs being in confronting relation, said joint comprising a strip of resilient material having coplanar marginal sections joined by a central section of arcuate configuration, said marginal sections engaging the confronting grooves of juxtaposed logs and said central section being deformed outwardly when said logs are pressed toward one another, said outwardly deformed central section having inner edges that are closely spaced to one another and an arcuate shaped outer portion to define a tubular bead along the center portion of said strips that cooperates with the periphery of the juxtaposed logs to exert a wedging action to inhibit lateral displacement of said logs, and a sealing material interposed between said strip and adjacent logs.

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U.S. Cl. X.R.

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