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(72) SIMARD, Urbain, CA
(71) BOIS + VALUE INC., CA

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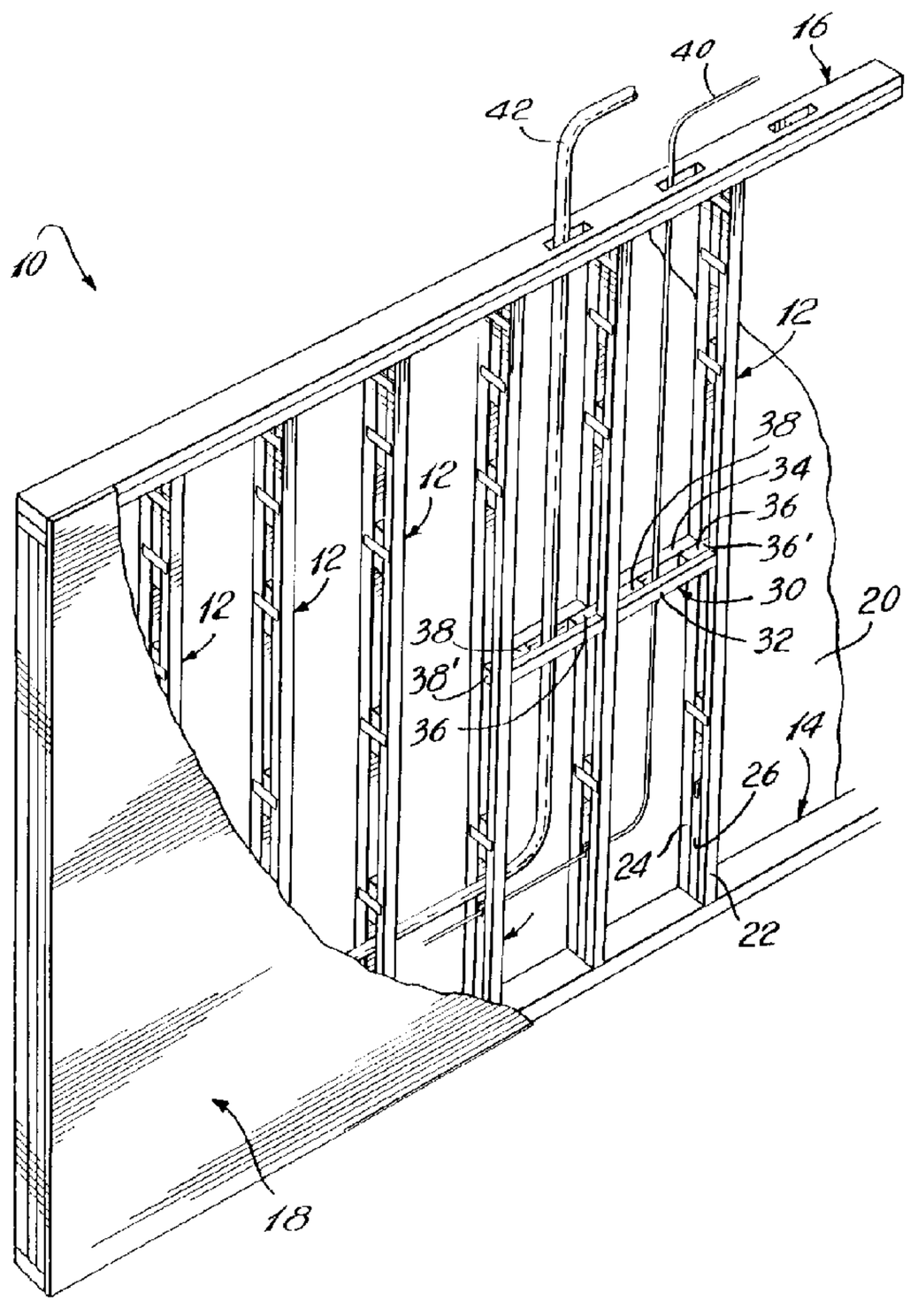
(54) **POTEAU D'OSSATURE EN BOIS POUR LA CONSTRUCTION DE CLOISONS**

(54) **WOOD STUD FOR USE IN MAKING PARTITION WALLS**



(57) A wood stud for use in the construction of a partition wall is formed of a laminate structure consisting of a pair of outer layers of elongated boards of lumber and of an intermediate layer defined by a series of spaced wood strips disposed between the elongated boards. The strips are vertically spaced from one another so as to define elongated slots in the stud to allow passage of electrical wiring, plumbing and the like therethrough. The improved laminate structure is characterized by the dimensions of the outer boards, one of which having a width approximate double that of the other; this construction provides optimum resistance to heavy load conditions on a partition or exterior wall formed of wood studs.

ABSTRACT

A wood stud for use in the construction of a partition wall is formed of a laminate structure consisting of a pair of outer layers of elongated boards of lumber and of an intermediate layer defined by a series of spaced wood strips disposed between the elongated boards. The strips are vertically spaced from one another so as to define elongated slots in the stud to allow passage of electrical wiring, plumbing and the like therethrough. The improved laminate structure is characterized by the dimensions of the outer boards, one of which having a width approximate double that of the other; this construction provides optimum resistance to heavy load conditions on a partition or exterior wall formed of wood studs.

TITLE OF THE INVENTION

Wood stud for use in making partition walls.

FIELD OF THE INVENTION

The present invention relates to wood studs used in the construction of partition walls.

BACKGROUND OF THE INVENTION

It is known to construct partition walls with parallel horizontal top and bottom metallic plates to which are connected a series of horizontally spaced metallic studs, the latter as well as the top and bottom plates being provided with openings for allowing passage of electrical wiring and plumbing therethrough.

It is also known to construct such partition walls with wood boards in lieu of metallic plates and studs. However, in such type of walls holes must be drilled in the studs as well as in horizontal transverse boards interconnecting adjacent studs to allow the passage of electrical wiring and plumbing therethrough.

While the metallic partition wall requires other metallic components such as brackets and bolts to secure its assembly, the construction of wooden partition walls entails time consuming operations to provide these holes wherever required.

In applicant's co-pending Canadian patent application No. 2,175,865 published November 7, 1997, there is provided a stud configuration which consists basically of a laminated structure of wood boards and wood strips enabling quick assembly as well as providing appropriate slots for the installation of electrical wiring and plumbing. Such stud consists of three layers of lumber pieces, each layer having substantially the same width.

However, it has been found that especially for those partition walls used for forming exterior walls of housings, heavy load conditions such as heavy horizontal winds, some present wood studs offer very weak resistance to these loads.

OBJECT AND STATEMENT OF INVENTION

It is an object of the present invention to obviate to the above problem in present wood studs.

This is achieved by providing a wood stud which is characterized in that one of the outer elongated layers making up the laminated structure has a dimension substantially greater than that of the other elongated layer, in the neighborhood of about twice the width thereof.

The present invention therefore relates to a wood stud for use in the assembly of a partition wall formed of a plurality of identically constructed wood studs horizontally spaced from one another; the stud is formed of a laminate structure of lumber boards of equal thickness and includes a pair of vertically extending and horizontally spaced outer elongated boards of lumber and an intermediate arrangement of a series of vertically spaced lumber strips disposed between and fixed to the pair of elongated boards. The lumber strips are vertically spaced from one another so as to define slots in the laminated structure to allow passage of electrical wiring, plumbing and the like therethrough. As stated above, the laminated structure is characterized in that one of the vertical elongated boards has a width which is about twice that of the other elongated board to provide optimum resistance to heavy load conditions on a partition or exterior wall formed of wood studs.

Other objects and further scope of applicability of the present invention will become apparent from the detailed description given hereinafter. It should be understood, however, that this detailed description, while indicating preferred embodiments of the invention, is given by way of illustration only, since various changes and modifications within the spirit and scope of the invention will become apparent to those skilled in the art.

IN THE DRAWINGS

Figure 1 is a perspective view of a partition wall constructed with wood studs made in accordance with the present invention showing only part of a surface defining panel on the front side thereof;

Figure 2 is a front elevational view of a stud;

Figure 3 is a perspective exploded view showing the connection of the three boards of the stud; and

Figure 4 is a cross-sectional view of the laminate structure of the present invention.

DESCRIPTION OF PREFERRED EMBODIMENTS

Referring to figure 1, there is shown a partition wall, generally denoted 10, suitable for use as a partition wall in a building or dwelling which incorporates a series of horizontally spaced studs 12, disposed in parallel coplanar array, between a base board 14 and a top board 16. The opposite ends of the studs 12 are fixed, preferably by nailing, to the base board 14 and the top board 16, usually affixed to the floor and ceiling of a building structure. The partition wall is covered with a pair of opposite surface panels 18 and 20, such as gypsum wallboards, which are appropriately attached to the partition structure 12, 14 and 16.

Referring also to figure 2, the stud 12 is a laminate structure that includes a pair of outer layers formed of elongated boards 22 and 24

which, as illustrated in figure 1, extend uninterruptedly between the base board 14 and the top board 16. The laminate structure also includes an intermediate layer which is formed of a series of wood strips 26 which are vertically spaced from one another so as defined a series of slots or openings 28 serving a dual purpose, as further described below.

It has been found that, whenever those partition walls are mounted to form an exterior wall of a housing, it is necessary to modify the construction of present wood studs, such as those described in the above identified Canadian patent application. The modification consisting of constructing one of the outer boards, for example board 24 with a width approximately twice that of the other board 22. Such board 24 is placed on the exterior side of the wall.

In one preferred form of the invention, the dimension of the stud is 1½″ X 5½″ (known in the trade as 2″ X 6″) in which case the outer board 24 is 2½″ X 1½″ and board 22 is $1^{3}/_{16}$″ X 1½″; with the exception of the uppermost and lowermost strips, each strip consists in this case of $1^{3}/_{16}$″ X 1½″ wood members having a length of about 48″; the slots may have varying lengths. The height of the studs will vary in accordance with that desired for a particular partition wall.

The partition wall of the present invention may include transverse wooden boards 30 which are also of a laminate structure including two outer strips 32 and 34 and of an intermediate arrangement of two opposite shorter strips 36 and 38. As can be seen in figure 1, these shorter strips 36 and 38 have an end portion 36' and 38' that extend beyond the ends of the strips 32 and 34 so that they may be fittingly inserted into the slot 28 of a stud. It is recommended that these ends 36' and 38' be nailed to the boards 22 and 24 of the stud. The length of the strips 32 and 34 will

depend on the spacing between the studs; usually they are 12″ or 16″ long. The length of each protruding portions 36', 38' is preferably 3/4″. Again, the dimension of the studs corresponds to that of the laminated structure with strip 32 having a width corresponding to that of board 22 and strip 34 having a width corresponding to that of board 24, i.e. strip 34 is double the width of strip 22.

Hence, the purpose of the slots 28 is to allow the interconnection of these transverse boards 30 as well as to receive therethrough the electrical wiring 40 or plumbing conduit 42.

Referring to figures 3 and 4, it can be seen that each laminate structure is secured together by means of metallic braces 60 extending crosswise of the lumber pieces 22, 26 and 24; these braces have a series of pointed prongs 62 that engage the three lumber pieces of the laminated structure.

It has been found that black spruce, pine and fir are preferred lumbers for this type of construction.

Although the invention has been described above with respect with one specific form, it will be evident to a person skilled in the art that it may be modified and refined in various ways. For example, instead of braces, the laminated structure may be assembled by gluing, nailing, screwing, etc. It is therefore wished to have it understood that the present invention should not be limited in scope, except by the terms of the following claims.

CLAIMS

1. A wood stud for use in the assembly of a partition or exterior wall formed of a plurality of identically constructed wood studs horizontally spaced from one another; said stud being formed of a laminate structure of lumber boards of equal thickness including a pair of vertically extending and horizontally spaced outer elongated boards of lumber and an intermediate arrangement of a series of vertically spaced lumber strips disposed between and fixed to said pair of elongated boards, said lumber strips being vertically spaced from one another so as to define slots in said laminated structure to allow passage of electrical wiring, plumbing and the like therethrough; said laminated structure being characterized in that one of said vertical elongated boards has a width which is about twice that of the other of said vertical elongated boards to provide optimum resistance to heavy load conditions imposed on a partition or exterior wall formed of wood studs.

2. A wood stud as defined in claim 1, further comprising metal plates extending on opposite sides of said laminated structure for securing said boards and said lumber strips together.

3. A wood stud as defined in claim 1, wherein said boards are glued edgewise to said lumber strips.

4. A wood stud as defined in claim 1, wherein said elongated boards are nailed to said lumber strips.

5. A wood stud as defined in any one of claims 1 to 4, wherein said boards and said lumber strips consist of spruce lumber.

6. A wood stud as defined in any one of claims 1 to 4, wherein said boards and lumber strips consist of pine lumber.

7. A wood stud as defined in any one of claims 1 to 4, wherein said boards and said lumber strips consist of fir lumber.

8. In a partition or exterior wall, the combination of:

a wooden base plate;

a wooden top plate extending parallel to said base plate; and

a plurality of wooden vertical studs horizontally spaced from one another and having upper and lower extremities thereof fixed to said top and base plates, respectively; each said stud being formed of a laminate structure of lumber boards of equal thickness including a pair of vertically extending and horizontally spaced outer elongated boards of lumber and an intermediate arrangement of a series of vertically spaced lumber strips disposed between and fixed to said pair of elongated boards, said lumber strips being vertically spaced from one another so as to define slots in said laminated structure to allow passage of electrical wiring, plumbing and the like therethrough; said laminated structure being characterized in that one of said vertical elongated boards has a width which is about twice that of the other of said vertical elongated boards to provide optimum resistance to heavy load conditions imposed on a partition wall used as an exterior wall.

9. In a partition or exterior wall as defined in claim 8, said studs including metal plates on opposite sides of said laminated structure for securing said boards and said lumber strips together.

10. In a partition or exterior wall as defined in claim 8 or 9, said boards of lumber are unitary and extend uninterruptedly between said top and base plates.

11. In a partition or exterior wall as defined in claim 8 or 9, wherein the slots of one stud face horizontally corresponding slots of an adjacent stud.

12. In a partition or exterior wall as defined in claim 10, the combination further comprising a plurality of transverse wooden boards extending horizontally between two horizontally spaced studs, each said transverse board being formed of a laminate structure including a pair of outer layers formed of strips extending between two adjacent studs and including an intermediate layer formed of a pair of horizontally spaced strips, each having an extremity received in a facing slot of adjacent studs.

13. In a partition wall as defined in any one of claims 8 to 12, wherein said boards and said lumber strips consist of spruce lumber.

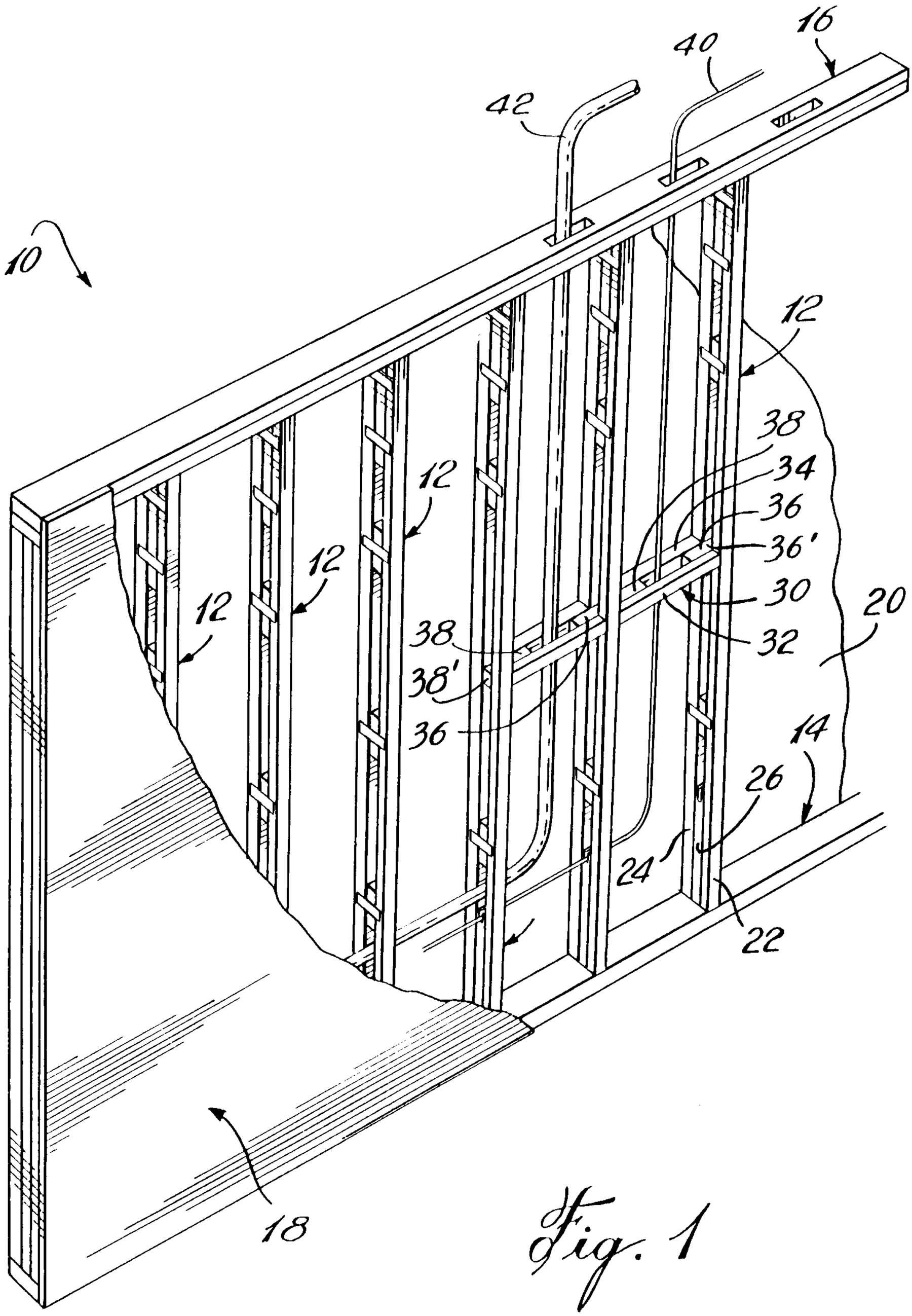


Fig. 1

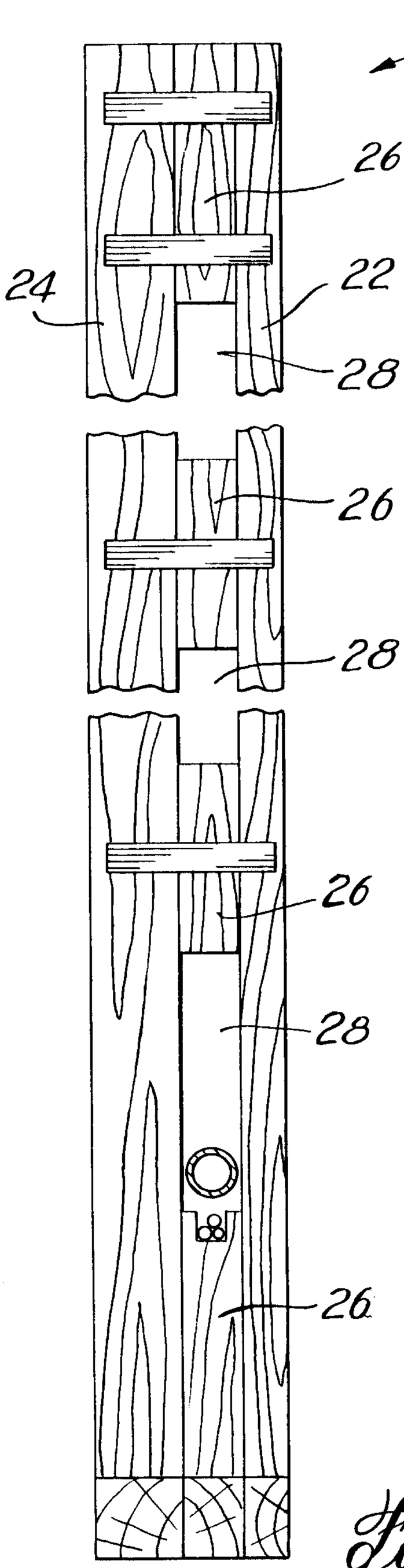


Fig. 2

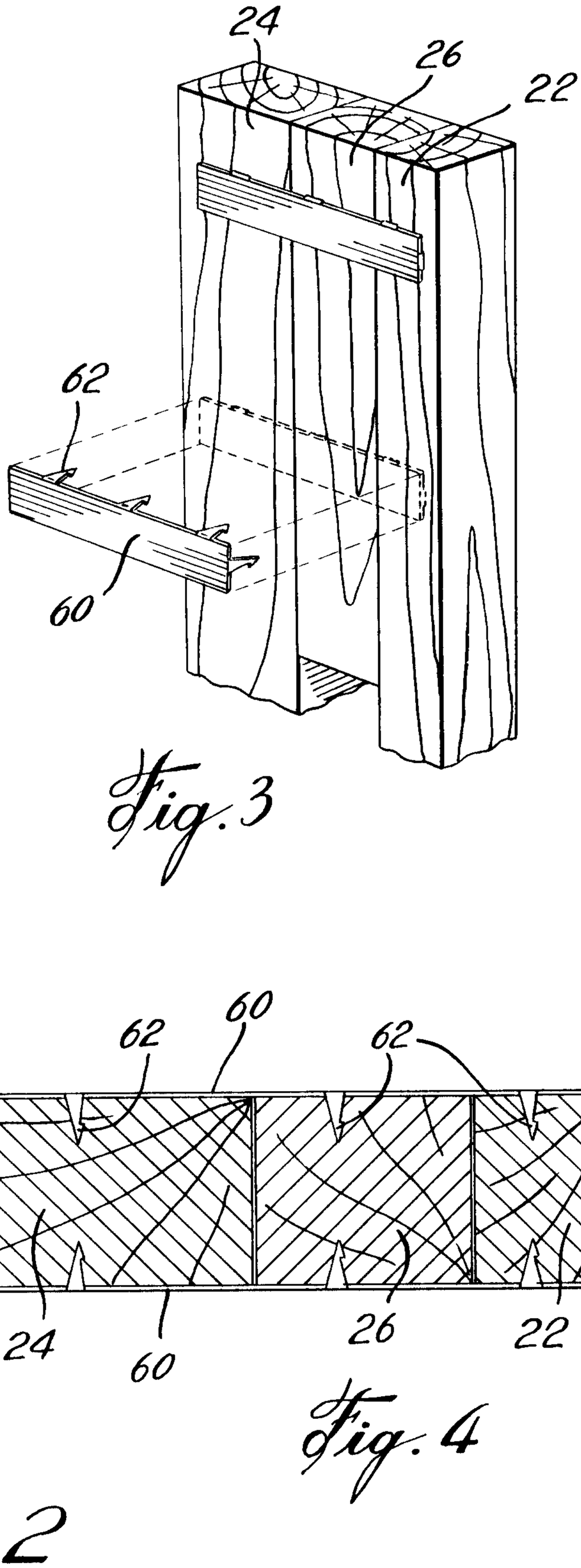


Fig. 3

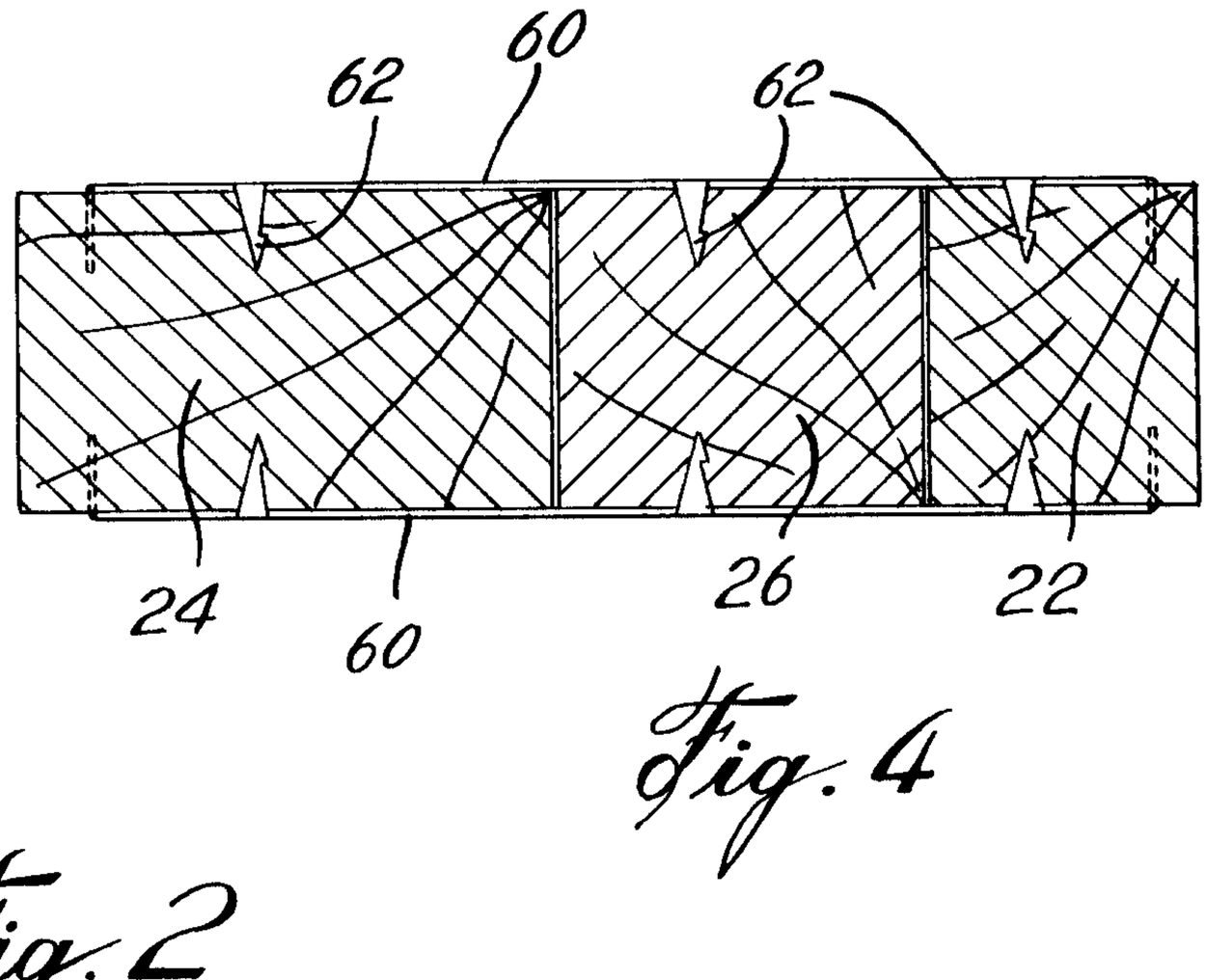


Fig. 4