Oct. 15, 1968 R. E. OMHOLT 3,405,493

WALL CONSTRUCTION PARTICULARLY FOR PLAYING COURTS

Filed March 22, 1966

FIG. 1

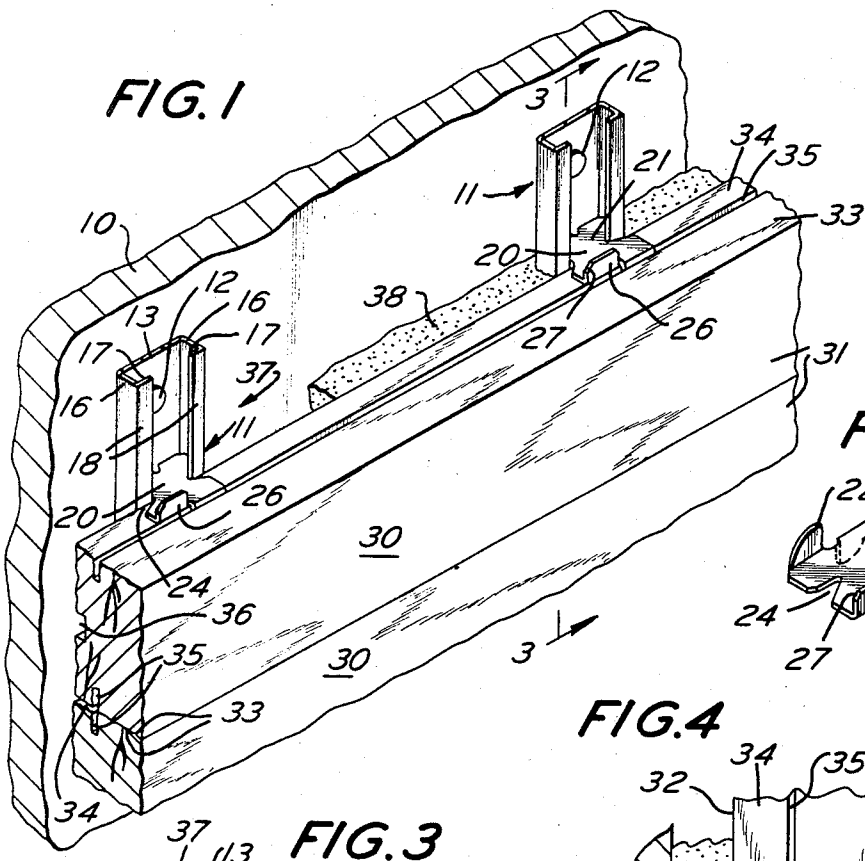


FIG. 2

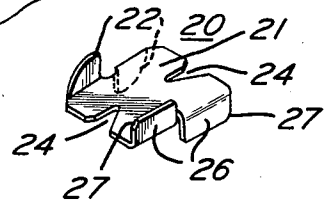


FIG. 3

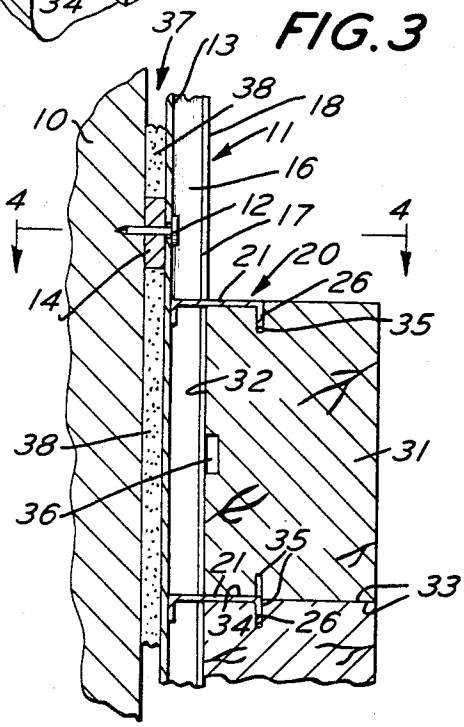
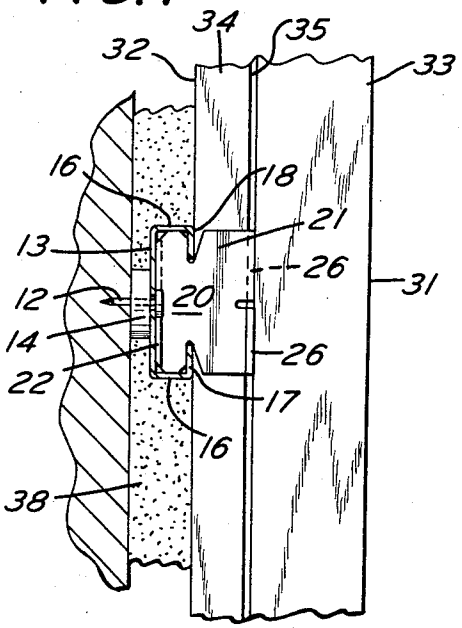


FIG. 4



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WALL CONSTRUCTION PARTICULARLY FOR PLAYING COURTS

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8 Claims. (Cl. 52—480)

ABSTRACT OF THE DISCLOSURE

A wall construction for playing courts which comprises, attached to a supporting wall, a plurality of parallel supporting elements for a wooden lining in non-yielding engagement therewith and the spaces between the wooden lining and the supporting wall having a moisture resisting cohesive compression resisting material therein in adherent engagement with the supporting wall and in adherent and supporting engagement with the wooden lining between the supporting elements, the wooden lining preferably being parallel wooden boards, the wooden lining providing an impact receiving playing surface.

This invention relates to a wall construction which is particularly suited for playing courts and more especially for courts in which the wall itself provides a playing surface.

The game of squash, when properly played, and at tournament level requires a vertical wall with totally uniform bounce, which is flat and distortion free, which is immune to the effects of moisture both in front and behind, which is capable of reduction to the temperature at which squash tournaments are played, and which is stable at other normal temperatures and when not at the temperature for tournament play.

No wholly satisfactory wall for this purpose has heretofore been available.

Walls for other types of use have similar requirements of stability and freedom from transmitted or transferred vibrations with a wood lined wall.

It is the principal object of the present invention to provide an improved wall construction which is particularly suited for the vertical walls of squash courts but is not limited to such use, and in which the wall boards with their exposed playing surfaces are supported and held in a simple but effective manner.

It is a further object of the present invention to provide a wall construction in which the exposed face of the wall provides a totally uniform bounce to a ball, such as a squash ball, which provides a vibrationless quiet bounce of such a ball, which has waterproof characteristics so as to avoid deformation of the wood, and which has thermal insulating characteristics so as to reduce condensation when the enclosed space is at or brought to a reduced temperature for use, and in which the components are stabilized in a simple but effective manner.

It is a further object of the preset invention to provide a wall construction of the character aforesaid in which a vertical wood surface is utilized and is held from the rear by a stable and continuously adherent filling material.

Other objects and advantageous features of the invention will be apparent from the description and claims.

The nature and characteristic features of the invention will be more readily understood from the following description taken in connection with the accompanying drawings forming part thereof, in which:

FIGURE 1 is a fragmentary perspective view of a wall construction in accordance with the invention, parts being broken away to show the details of construction;

FIG. 2 is a view in perspective of a clip which can advantageously be employed;

FIG. 3 is a vertical sectional view, enlarged, taken approximately on the line 3—3 of FIG. 1; and

FIG. 4 is a horizontal sectional view taken approximately on the line 4—4 of FIG. 3.

It should, of course, be understood that the description and drawings herein are illustrative merely, and that various modifications and changes can be made in the structure disclosed without departing from the spirit of the invention.

Like numerals refer to like parts throughout the several views.

Referring now more particularly to the drawings, in which a preferred embodiment of the invention is shown, a conventional wall **10**, of masonry such as stone, brick, block or tile or of wood or metal, is utilized. The wall **10** may be an exterior wall, or an interior partition wall, or other vertical support but must have adequate strength and rigidity and capability of attachment of other components, as hereinafter explained.

The vertical support **10**, at spaced locations, has metal channels **11** secured thereto to serve as supporting members which for a specific construction can be on eight inch centers. While any desired orientation of the channels **11** can be employed to suit the particular installation it is preferred that the channels **11** have their longitudinal axes vertical. The channels **11** are preferably secured in place by any desired type of fasteners **12** which extend through the webs **13** of the channels **11** and into firm engagement in the wall **10**.

It is preferred that shims **14** be interposed between the webs **13** and the wall **10**, at the locations of the fasteners **12**. The shims **14** are of relatively inert material such as metal, synthetic plastic or wood, and for a particular installation can have a thickness of the order of one quarter inch to space the channels **11** from the wall **10**, and permit access to the portions of the channel **11** contiguous to the wall **10** for purposes of filling as hereinafter pointed out.

The channels **11** are preferably of metal with parallel side margins **16** extending from the web **13** and with spaced inwardly facing rims **17** parallel to the web **13**. The rims **17** have outer faces **18**.

Any suitable clamping devices can be employed with the channels **11** but metal clips **20** as shown in detail in FIG. 2 are suitable. The clips **20** have central vertical plate portions **21** and oppositely extending feet **22** with beveled corners **23**. The plate portions **21** have opposite side edge notches **24** to engage the plate portions **21** with the rims **17** of the channels. The clips **20** have oppositely disposed fingers **26** extending from the plate portions **21** with beveled corners **27** to facilitate their insertion.

The exterior wall surface of the wall construction preferably comprises elongated hard wood boards **30**, preferably of maple or other suitable hard wood. The boards **30** have outer or exposed faces **31**, inner or concealed faces **32** to engage the outer faces **18** of the rims **17**, and edge face portions **33** and **34** with longitudinal slots or grooves **35** therebetween.

The edge face portions **33** of adjoining boards **30** are adapted for engagement while the edge face portions **34** of these same boards **30** are spaced apart a sufficient distance to accommodate the plate portion **21** of the clips **20**.

The grooves **35** and the fingers **26** are shaped and dimensioned so that the fingers **26** upon engagement in the grooves **35** draw the boards **30** so that their inner faces **32** firmly engage the rim faces **18** and remain in such engagement.

The faces **32** are preferably provided with relief grooves **36** therealong to reduce the tendency of the boards **30** to warp.

The space **37** between the wall **10** and the inner faces **32**, outside of the channels **11**, and around the shims **14** is filled with a suitable plastic material **38** which, when in place, will be in adherent engagement with the surfaces exposed within the space **37**, and accordingly also with the inner faces **32** of the boards **30**. The plastic material will also enter between the faces **34** and engage therewith and will also enter the grooves **35** and lock therein so as to also provide sheer restraint as well as adherent engagement to restrict unwanted movement of the boards **30**.

The filling material **38** is preferably waterproof, relatively inert, non-toxic, capable of being applied in liquid form to completely fill the voids and to solidify and retain continuous adherent engagement with the surfaces with which it is in contact so as to act in tension and in compression, and which will not be adversely affected by temperature changes after being put in place. For this purpose a suitable material is bitumen, and preferably asphalt which is solid at normal atmospheric temperatures, say of the order of 90° F. and cooler, and which can be heated so as to be fluent for application in the spaces **37**.

In the installation of the wall construction in accordance with the invention, the interior face of the wall **10** has the channels **11** secured thereto by the fasteners **12** through the webs **13** and shims **14**. The shims **14** may be utilized to smooth out irregularities of the wall **10** but it is preferred that the wall **10** be relatively flat, plumb and free from irregularities so as to provide a good base.

The boards **30** are next secured in place on the channels **11** by inserting the clips **20** in the channels with the side edge notches **24** gripping the channel rims **17** and with the fingers **26** engaged in the grooves **35** to hold the boards **30** with their faces **32** in firm engagement with the rim faces **18**. The edge faces **33** are in meeting relation.

The filling material in fluent condition is poured into the space **37** so that it fills that space without voids, engages the wall **10**, engages the inner faces **32** of the boards **30**, engages the outsides of the channels **11** and encloses the shims **14**, and solidifies in place and in adherent engagement.

The adherent filling material **38** locks the boards **30** along their lengths against movement toward or away from the wall **10**, and stabilizes the shims **14** and the channels **11**, and eliminates the span effect of the initial mounting of the boards **30** and which span effect would contribute to uneven impact response and to permit moist air to have access to the inner faces of the boards which would induce warpage.

The boards **30**, as thus held, provide over their faces **31** upon impact with a ball such as a squash ball totally uniform bounce of the ball. The bounce will also be quiet and vibrationless so that the noise level is reduced. In a particular embodiment the thickness attributable to the shims **14**, channels **11** and boards **30** will be of the order of one and one quarter inch.

The wall construction as described above is waterproof along the wall **10**, thereby eliminating deformation of the boards **30** and provides thermal insulation so that condensation is reduced at lowered temperatures. For tournament squash, played at a temperature of 40° F., the wall construction will be very effective but higher or lower temperatures will not adversely affect the construction.

I claim:

1. A wall construction for playing courts comprising
a vertical support having a continuous surface,
spaced parallel supporting members,
members for fixedly securing said supporting members to said vertical support,
means providing an exposed non-yielding impact receiving playing surface,
members for holding said playing surface means in intersecting relation to said supporting members and in fixed engagement with said supporting members, and
said vertical support and said playing surface means having a space therebetween,
said space being filled with a compression, tension, and moisture resisting fill in simultaneous and continuous engagement with said surface of said vertical support and in continuous and adherent supporting engagement with said playing surface means between said supporting members.

2. A wall construction as defined in claim **1** in which said playing surface means comprises spaced parallel wooden boards having outer exposed faces providing said playing surface.

3. A wall construction as defined in claim **2** in which said fill comprises bituminous material.

4. A wall construction as defined in claim **2** in which spacer members are interposed between said supporting members and said vertical support.

5. A wall construction as defined in claim **2** in which
said supporting members are channels, and
said members for holding said playing surface means are clips engaged with said boards and said channels.

6. A wall construction as defined in claim **2** in which
said supporting members are channels,
spacer members are interposed between said channels and said vertical support, and
said fill is in engagement with said spaced members.

7. A wall construction as defined in claim **2** in which
said supporting members are channels,
said boards have side edges,
said members for holding said playing surface means are clips which engage said channels and at least one of said side edges, and
said fill comprises bituminous material and is in simultaneous and continuous engagement with said vertical support, the inner faces of said boards and said channels.

8. A wall construction as defined in claim **2** in which
said supporting members are channels,
said boards have at least one side edge groove,
said members for holding said playing surface means are clips which engage said side edge grooves and said channels, and
said fill comprises bituminous material and is in simultaneous and continuous engagement with said vertical support, the inner faces of said boards and said channels.

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PATENT OFFICE

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,405,493 October 15, 1968

Ray E. Omholt

It is certified that error appears in the above identified patent and that said Letters Patent are hereby corrected as shown below:

Column 1, line 57, "preset" should read -- present --.
Column 4, line 35, "spaced" should read -- spacer --.

Signed and sealed this 24th day of February 1970.

(SEAL)
Attest:

Edward M. Fletcher, Jr.
Attesting Officer

WILLIAM E. SCHUYLER, JR.
Commissioner of Patents