United States Patent

[11] 3,596,420

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[21] Appl. No. **820,566**
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[45] Patented **Aug. 3, 1971**

[54] **WALL ASSEMBLY**
10 Claims, 6 Drawing Figs.

[52] **U.S. Cl.** 52/222, 52/478, 52/494, 52/DIG. 3
[51] **Int. Cl.** **E04b 2/72**, E04c 2/40
[50] **Field of Search** ..... 52/222, 235, 356, 326, 386, 387, 478, 494, DIG. 3

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Primary Examiner—Price C. Faw, Jr.
Attorney—Jerome P. Bloom

ABSTRACT: Apparatus for mounting and assembly of wall segments of strip or panel form to create a unitized wall structure. The mounting means have a strip form and are characterized by spaced anchor elements devoid of special fixing means and capable in part of serving a dual-holding function.

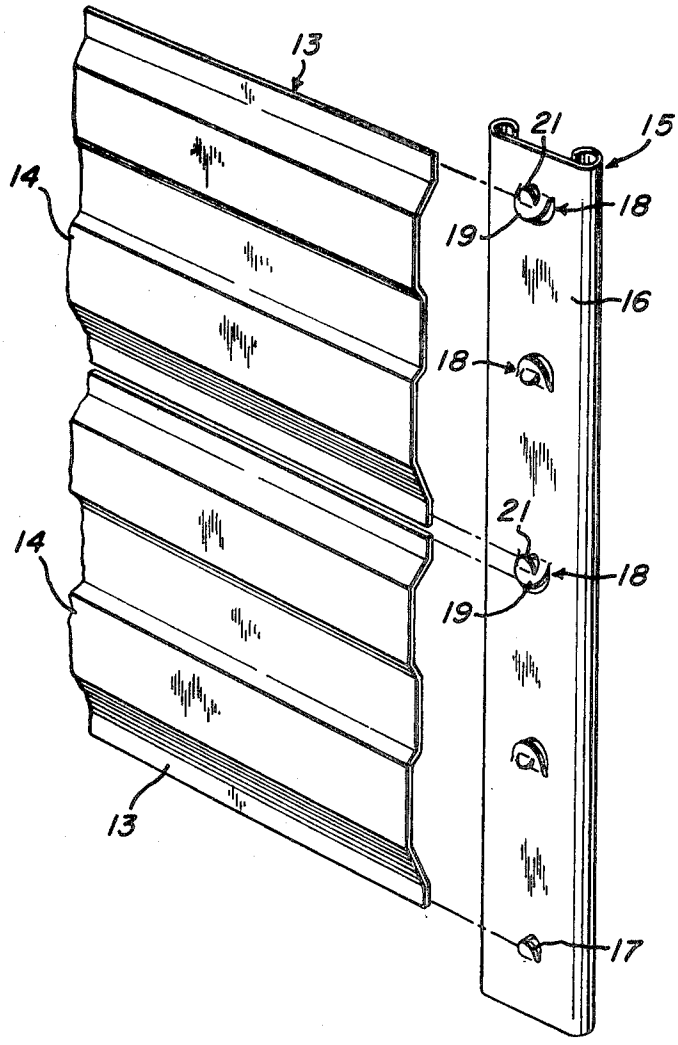


FIG-1

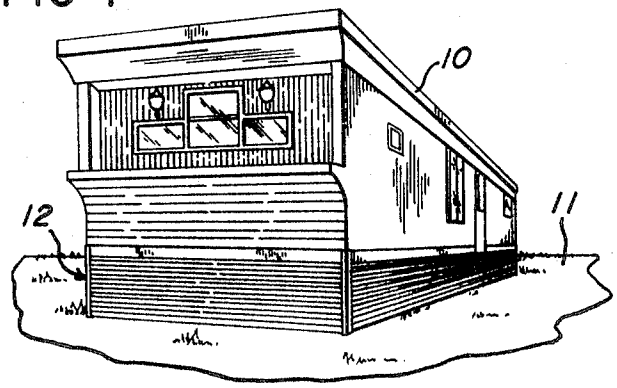


FIG-2

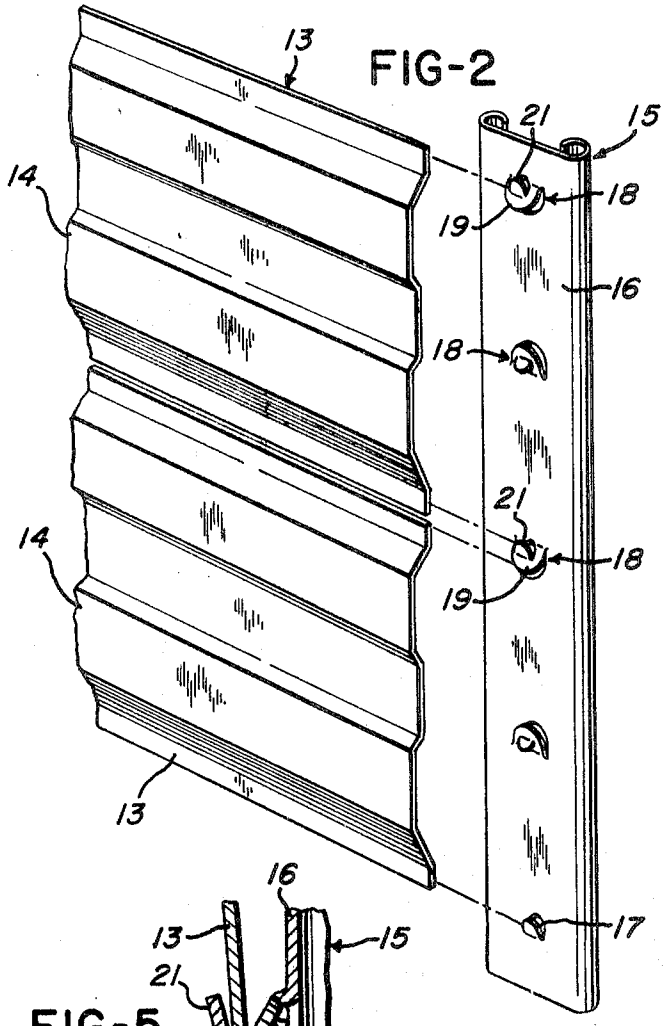


FIG-3

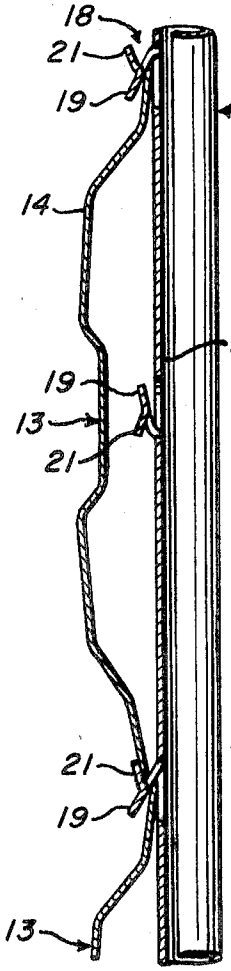


FIG-6

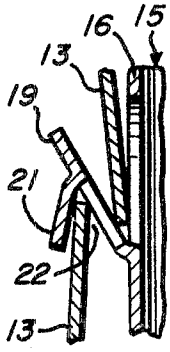


FIG-4

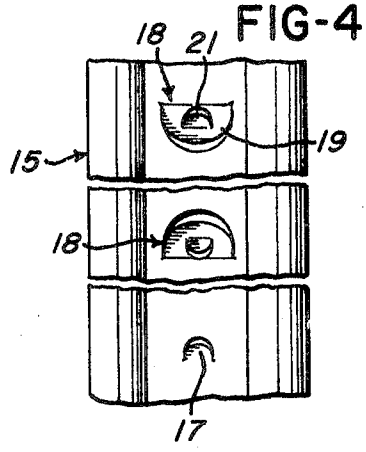
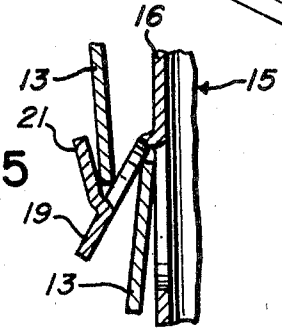


FIG-5



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WALL ASSEMBLY

BACKGROUND

This invention relates to improved support structures for wall segments of panel or strip form. Such structures provide for the assembly and disassembly of segmented wall structure without the need for fasteners or special tools for their removal. The invention is here illustrated with reference to the creation of an improved ad simply erected skirt for a trailer-type home and will be so described, though obviously not so limited as to its application.

The growing popularity of mobile homes has been accompanied by increasing attention to their exterior design and configuration. This is particularly evident in locations where the homes are established in semipermanent locations. In order to hide the wheels, landing gear and like undercarriage appurtenances of a mobile home under such circumstances, various skirt structures have been developed and applied to this end.

The object has been, of course, to provide a simple means to give a mobile home a more permanent air. However, one must consider that such skirts should be capable of being readily applied and disassembled since one might desire to move a mobile home at any moment. While efforts in this direction have met with some success, it still remains that the prior structures for the noted purpose have been deficient in a number of respects. For example, their erection in most instances, if not all, require the use of many fastening devices. Such is expensive and time consuming. Further, in most cases the resulting skirt has breaks and gaps in its continuity and is not desirable from either an aesthetic or structural standpoint. Other problems have also arisen, the sum total of which is clearly avoided in the use of the present invention.

SUMMARY OF THE INVENTION

The present invention provides a unique wall form having advantage as a skirt for a trailer-type home featuring narrow elongate backing and support strips for wall segments. The wall segments as here contemplated are capable of a limited degree of bending and flexing and are in the railer home application here illustrated horizontally disposed. The backing strips may be simply fixed to depend from the underframe of a trailer home, in spaced relation to and about its outer peripheral wall. As so disposed, vertically dependent backing strips include vertically spaced anchor means intermediate their ends, the major portion of which have a dual anchoring function. The latter anchor means preferably include oppositely directed tongues or tabs which respectively serve to receive thereunder and anchor thereto adjacent opposite edges of a respective upper and a lower wall segment to cause them to overlap and normally define therebetween a hidden path for flow of ventilating air. The wall segments are formed to readily flex to have opposite edges underlie and frictionally engage in a tensioned relation to vertically spaced tab or tongue portions. The natural resilience of the wall segments enable them to dually function to facilitate their ready mount and removal and to maintain their fixed position in place, if left alone. The result is a very simply erected, readily disassembled, wall or skirt structure having the appearance of full continuity as is aesthetically desirable, while at the same time accommodating flow therethrough of air to reduce the chance of moisture or mildew problems under the mobile home and to obviate the possibility of wind damage.

It is therefore a primary object of the invention to create a wall structure which is easy and economical to fabricate, more efficient and satisfactory in use and adaptable to a variety of applications.

Another object of the invention is to provide unique and simple means for creating a wall structure of strip or panel form.

A further object of the invention is to provide a unique hanger or support structure for wall panels, wall segments and like articles.

An additional object of the invention is to provide a strip-type hanger or support device mounting in longitudinally spaced relation thereon angularly projecting oppositely disposing anchor elements which mount wall segments or panels therebetween without need for any fasteners.

Another object of the invention is to provide improved hanger or mounting means for building a wall or skirt structure including thereon longitudinally spaced outstruck tabs or tongue portions some of which per se incorporate further outstruck portions to provide for mount thereto of adjacent wall portions without the need for fasteners per se.

A further object of the invention is to provide hanger devices or backing strips for wall segments or the like and a wall assembly possessing the advantageous structural features, the inherent meritorious characteristics and the means and mode of use herein described.

With the above and other incidental objects in view as will more fully appear in the specification, the invention intended to be protected by Letters Patent consists of the features of construction, the parts and combinations thereof, and the mode of operation as hereinafter described or illustrated in the accompanying drawings, or their equivalents.

Referring to the accompanying drawing wherein is shown one but obviously not necessarily the only form of embodiment of the invention,

FIG. 1 is a view, in perspective, of a mobile home equipped with a dependent skirt in accordance with an illustrated embodiment of the invention;

FIG. 2 is a fragmentary exploded view, in perspective, showing a hanger device according to the invention and associated wall segments of strip form;

FIG. 3 is a fragmentary view, in longitudinal section, of a skirt or wall construction as assembled per the invention;

FIG. 4 is a fragmented view of the front elevation of the hanger device of FIG. 2;

FIG. 5 is a fragmentary view in longitudinal section, showing in an enlarged scale a portion of the structure of FIG. 3; and

FIG. 6 is a view similar to FIG. 5 showing more detail as to the mounting and the spacing between adjoining edges of adjacent panel strips.

Like parts are indicated by similar characters of reference throughout the several views. DESCRIPTION OF A PREFERRED EMBODIMENT OF THE INVENTION

Referring to the drawings, in the illustrated embodiment the invention is used to construct a wall functioning as a skirt dependent from a mobile home. As shown in FIG. 1, in a semipermanent location the mobile home 10 occupies a raised position relative to ground level 11, being elevated by its undercarriage which includes the usual wheels, landing gear and like structure. The invention provides a skirt 12 which depends from the lower marginal edge of the home to reach substantially to ground level. In this manner, the open space beneath the mobile home is boxed in and the undercarriage beneath the home is concealed. A more pleasing and ornamental appearance is thereby given to the mobile home, an effect which can be added to by choosing the skirting materials to be of colors agreeably contrasting with the exterior colors of the home.

In accordance with the present inventive concepts, the skirt includes elongated wall panels or segments in the form of horizontally elongated strips 13 which are in the disclosed instance made of a lightweight, relatively flexible thin gage metal. A baked-on enamel coating protects and ornaments one side of each strip 13. Each panel includes a succession of reversely formed offset sections 14 which are defined by bends therein. This adds to the ornamental appearance of strips and tends to give them some rigidity. However, each strip so formed is susceptible of being flexed about its longitudinal axis. This aspect of flexibility has significant advantages for reasons which will hereinafter more clearly appear.

The skirt panels or strips are based on and mount to a plurality of striplike, vertically oriented, hanger devices or supports 15. Each device 15 is a member formed of sheet metal to

have a channel form providing it with a flat, planar front face 16. By reason of its channel form, the side edges of the device are curled rearwardly away from and inwardly of the front surface 16, lending strength and rigidity to the support to be provided thereby.

By a blanking out or like process, tongues or tabs are outstruck from the material of the planar surface 16, in longitudinally, or in this instance vertically, spaced relation thereon. As illustrated, at the vertical extremities of each support device 15 are platelike tongues 17. The displacement of tongues 17 form a semicircular apertures in the surface 16, from which surface the tongues incline at a substantially identical acute angle. The inclination of the remote tongues 17 is such that they face or open to each other for reasons which shall become evident. At intermediate locations, with a spacing therebetween depending on the vertical depth of the wall segments 13, are outstruck tongue means 18 having a dual-functional character. Each of the means 18 comprise a primary tongue element 19 having a form similar to and similarly struck from the material of the surface 16 as are the tongues 17. While the tongue 19 is angled in one direction there is outstruck from the central portion thereof to project in an opposite direction a secondary tongue portion 21. Thus, the primary and secondary tongues or tabs are caused to face and to angle away from each other. Of course, the very construction of the primary tongue and the secondary tongue is such that their base portions are longitudinally offset. Moreover, the tongues 17, 19 and 21 thereby provide what may be considered as anchor tabs which are raised above the surfaces from which they are formed and displaced from such surfaces to define therewith, in each instance, a V-shaped recess which, as will be seen, is adapted to snugly receive and fit therein the edge of a wall segment or strip 13 with a relatively snug fit. As is evident from the drawings, tongues 19 and 21 project towards each other at vertically spaced positions to cofunction as do pairs of tongues 17 and 19.

In assembling a wall of skirt form using the wall segments or panels in the form of strips 13 and the hanger support devices 15 as shown, the latter may be simply attached in any suitable manner, at their upper ends, to a supporting body, as to the lower marginal edge of the sidewalls of a mobile home, at the inner surface thereof. The hanger support devices are of a selected length to vertically depend, in this case, substantially to ground level. They may, if desired, be suitably anchored at their free lowermost ends as by being partly embedded in the ground. The number of the support devices 15 used will be such as may be deemed adequate properly to support the strips 13. The devices 15 are appropriately spaced about the lower edge of the wall of the mobile home according to the length of the strips 13.

As may be seen from the drawings, the strips 13 are applied to or installed upon the supports 15 by inserting their remote upper and lower strip edges between appropriately facing tongues 17 and 19 or 19 and 21 which open towards each other. The width or vertical depth of the strip 13 is provided to approximately coincide with or slightly exceed the spacing between the tongues under which its respective opposite edges are to cooperatively engage. In applying the strips there is produced therein a limited bending or flexing thereof about the longitudinal axis to thereby allow the respective upper and lower edges to be inserted into the V-shaped recesses defined by the tongue or tab elements with the surface portions from which they project. It is to be noted that at one extremity, for example, a strip 13 will have its lower edge engage under a tab 17 and at the other extremity under a tab or tongue 19. The immediately adjacent strip which is vertically thereabove, for example, will then dispose between a tongue 21 and a relatively opposite tongue 19. Of course, the tongues or tabs under which the extremities of a wall panel or segment might engage will depend on where or at what portion of a support device 15 the wall structure is to start.

It will be self-evident that the resilient character of the strips 13 result in the opposing edges thereof seating firmly within the V-shaped recesses and to the support elements in a manner to obviate looseness and rattling. Moreover, side edge portions of each strip 13 will be seen to bear in one instance on the flat planar surface 16 and to the undersurface of the related tongue 19 and in another instance on the outer surface of a tongue 19 and to the undersurface of a tongue 21. There is a resulting snug interengagement of parts which substantially reduces the possibility of vibration in the wind or due to shock. This eliminates the chance of annoying sounds as a result thereof.

Thus, the construction of a wall, as illustrated, involves the use of the strips 13 and the hanger support devices 15 in accordance with the present invention in a manner that the panel strips 13 are extended horizontally and in vertically following adjacent relation. Intermediate the vertical extremities of the support devices 15 are the dual-functional anchoring means 18 providing oppositely facing tongues. The devices 18 cooperate with each other to dispose between tongue portions 19 and 21 which open toward each other, in each instance, a strip 13. Of course a tongue 17 can similarly cooperate with a tongue 19 or 21 as the case may be. With such construction, particularly as related to the use of the dual-functioning means 18, adjacent strips 13 present adjoining edges with, as seen in FIG. 3, one such edge being inserted under a tongue 19, for example, to seat therein while the other adjoining edge is inserted beneath a facing tongue 21 to seat therein. By virtue of the formation of the anchor means 18, the base or seat provided by tongue 21 is longitudinally offset relative to the base or seat provided by tongue 19 in a manner that the respectively inserted adjoining edges of the adjacent strips are in overlapping relation to one another. At the same time, they are held spaced outwardly from one another by at least the thickness of the tongue 19. Accordingly, under such circumstances, between each adjacent pair of wall panels or segments there is defined an opening 22 (FIG. 6). The construction of the integral anchor means 18 accordingly produces an inherent overlapping of vertically adjacent strips 13. The result is to give an appearance of an essentially continuous wall structure and to provide at the same time, however, ventilating-openings between adjacent wall segments. Accordingly, in the application described, the skirt requires no special enforcement against wind action and permits air circulation which avoids problems that may be created by dampness occurring beneath the trailer home.

While the application here illustrated shows the strips 13 as horizontally oriented, this is not to be construed as limiting. The invention concept of using the dual-functional tabs in hanger-type supports may be just as easily applied to vertical wall panels or segments at their lateral edges. In any event, we see a unique and simple means devoid of fasteners whereby wall segments may be firmly and tightly mounted to hanger devices without the need of special fastening means.

As will be obvious, the strips 13 here illustrated may be simply and economically formed from lightweight metal by an inexpensive forming process. Similarly the production of the support or hanger devices 15 may be very economically achieved. The devices 15 may be provided in any required lengths with the anchoring devices 17 and 18 formed in a continuous spaced relation along the length thereof. Selected lengths may then be cut to suit the requirements of each installation.

While not preferred, the invention does contemplate vertical mounting supports with duofunctional devices 18 spaced laterally on separate mounting segments yet nevertheless cofunctioning in an obvious manner.

In the application such as here illustrated, where corners are involved a pair of devices 15 may be used and placed in angular substantial abutting relation. Alternatively, a corner form of hanger device may be provided presenting surfaces 16 and outstruck tongues at right angles to one another and united along continuous edges.

From the above description it will be apparent that there is thus provided a device of the character described possessing

the particular features of advantage before enumerated as desirable, but which obviously is susceptible of modification in its form, proportions, detail construction and arrangement of parts without departing from the principle involved or sacrificing any of its advantages.

While in order to comply with the statute the invention has been described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific features shown, but that the means and construction herein disclosed comprise but one of several modes of putting the invention into effect.

Having thus described my invention, I claim:

1. Apparatus for mounting wall segments of strip or panel form to create a readily assembled and disassembled wall structure without the need for special fasteners, comprising support means, said support means including elements which project outwardly from said support means, said elements forming anchor means disposed in spaced-apart relation and at least in part arranged in pairs disposed in opposed relation to detachably contain wall segments, by engagement therewith at the remote edges of said segments, at least some of said projecting elements including dual anchor means having oppositely directed anchor portions for simultaneously anchoring adjacent edges of successively adjacent wall segments to create the impression of an essentially continuous wall structure.

2. Apparatus for mounting wall segments of strip or panel form to create a readily assembled and disassembled wall structure without the need for special fasteners, comprising support means, said support means including anchor means disposing in spaced relation and in part opposed to nest and detachably contain wall segments by engagement therewith at their remote edges, at least part of said anchor means having a duofunctional character providing that said part may releasably mount and support adjoining edges of adjacent segments characterized in that said anchor means of said part include a primary tongue or tab portion projected angularly in one direction from a surface of said support means and a secondary projection from said tongue projected oppositely, the tongue and said projection providing thereby a structure including offset portions so that an edge of one wall segment may fit under said primary tongue and to the base thereof while the adjoining edge of an adjacent wall segment may fit under said secondary projection, the adjoining edges of said segments being disposed thereby in an overlapped relation.

3. Apparatus as set forth in claim 2 characterized by said primary tongue and secondary projection being so formed to produce a spacing between the overlapped edges of adjacent wall segments which anchor thereto.

4. Apparatus for mounting wall segments of strip or panel form to create a readily assembled and disassembled wall structure without the need for special fasteners, comprising support means, said support means including anchor means disposing in spaced relation and in part opposed to nest and detachably contain wall segments by engagement therewith at their remote edges, at least part of said anchor means having a duofunctional character providing that said part may releasably mount and support adjoining edges of adjacent segments characterized by said support means having a strip form and a longitudinally extended generally flat planar surface including at longitudinally spaced positions thereon tabs, providing said anchor means, said tabs projecting angularly from said planar surface and including, at least in part, oppositely projecting tabs functioning in pairs and so formed to contain therebetween in slip fit relation thereto wall segments, a portion of said tabs having oppositely projecting portions adapting them to dually mount in contained relation thereto adjoining edges of wall segments.

5. Apparatus as in claim 4 characterized by said tabs with oppositely projecting portions having the respective portions thereof rising from base portions which are in planes spaced progressively outward from said planar surface of said support means.

6. Apparatus as in claim 5 characterized in that said tabs are outstruck from the planar surface of said support means and said dual-mounting tabs include, at least in part, oppositely facing projections comprising a primary tab portion outstruck from the said planar surface and a secondary tab portion outstruck from said primary tab portion.

7. Apparatus for providing a segmented wall structure or the like comprising support means including thereon longitudinally spaced anchor means, individual of said anchor means being formed to simultaneously mount and support ends of adjacent wall segments in an overlapped relation and spaced anchor means being opposed to receive and contain therebetween a wall segment by engagement with remote edges thereof, said individual anchor means formed to simultaneously mount adjacent edges of wall segments in an overlapped relation consisting of a compound tablike structure having oppositely projecting portions one of which is in connection with the other to individually engage and produce an overlapped spacing between the adjacent edges of the wall segments which respectively mount thereto, said wall segments having the capability of being flexed to facilitate mounting to said tablike structures, the distance between said structures being limited to produce a fastener-free frictional containment of the wall segments.

8. A wall structure readily assembled and disassembled for use as a skirt for mobile homes and the like, including at least one hanger support device having a substantially flat front face of longitudinal extent, a plurality of longitudinally spaced apart tongues outstruck from said front face, adjacent tongues projecting oppositely of one another, said tongues presenting relatively flat front faces disposing angularly of the front face of said support device, another tongue outstruck from the front face of at least a portion of the first said tongues and projecting oppositely thereof, adjacent ones of said other tongues projecting oppositely of one another, the first said tongues and said other tongues providing seats spaced differentially outward from the front face of said support device, and wall strips disposing transversely of said support device and having their longitudinal edges variously interengaged with said tongues in the seats there provided.

9. A wall structure according to claim 8, wherein a said other tongue is outstruck from a first said tongue at a location on the front face thereof to provide in conjunction with the said front face of the said first said tongue a seat spaced from the seat defined by the first said tongue in conjunction with the front face of said support device whereby the adjoining edges of adjacent strips respectively received in said longitudinally spaced seats substantially overlap one another and are spaced outwardly of one another a distance at least equal to the thickness of said other tongue.

10 Apparatus as in claim 1 characterized by said dual anchor means each defining immediately adjacent pockets differentially spaced in a sense outwardly of and with reference to said support means.

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,596,420 Dated August 3, 1971

Inventor(s) Yale Ducker

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 7, -- a -- is inserted following "of";

line 10, "ad" should read -- and --;

line 42, "railer" should read -- trailer --.

Column 2, lines 43-44, "DESCRIPTION OF A PREFERRED EMBODIMENT OF THE INVENTION" should read as a heading for the following material;

line 48, "semipermanent" should read -- semi-permanent --;

line 74, "striplike" should read -- strip-like --.

Column 3, line 10, "platelike" should read -- plate-like --;

line 11, "a" is deleted.

line 17, "outstruck" should read -- out-struck --;

line 36, "cofunction" should read -- co-function --.

Column 4, line 67, "cofunctioning" should read -- co-functioning --.

Signed and sealed this 11th day of April 1972.

(SEAL)
Attest:

EDWARD M.FLETCHER,JR.
Attesting Officer

ROBERT GOTTSCHALK
Commissioner of Patents

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