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 [21] Appl. No. **797,500**  
 [22] Filed **Feb. 7, 1969**  
 [45] Patented **Feb. 16, 1971**  
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 [32] Priority **Feb. 22, 1968**  
 [33] **Germany**  
 [31] **H61876**

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[54] **WALL PANEL ASSEMBLY**  
**11 Claims, 2 Drawing Figs.**

[52] U.S. Cl..... **287/20.92,**  
**287/20.924, 292/216, 292/78**  
 [51] Int. Cl..... **F16b 7/00**  
 [50] Field of Search.....**287/189.36,**  
**20.92 (C), 20.924; 52/483, 489; 292/70, 198, 78,**  
**209, 216; 312/(Inquired); 108/(Inquired)**

**ABSTRACT:** Cover members such as wall panels are releasably attached to a load-bearing member by cooperating male and female connecting means. The connecting means are secured against unintentional disengagement by a mechanical locking device which is actuatable by the connecting means during movement of the cover members relative to the load-bearing member. The force applied in moving the cover members away from the load-bearing member releases the locking device.

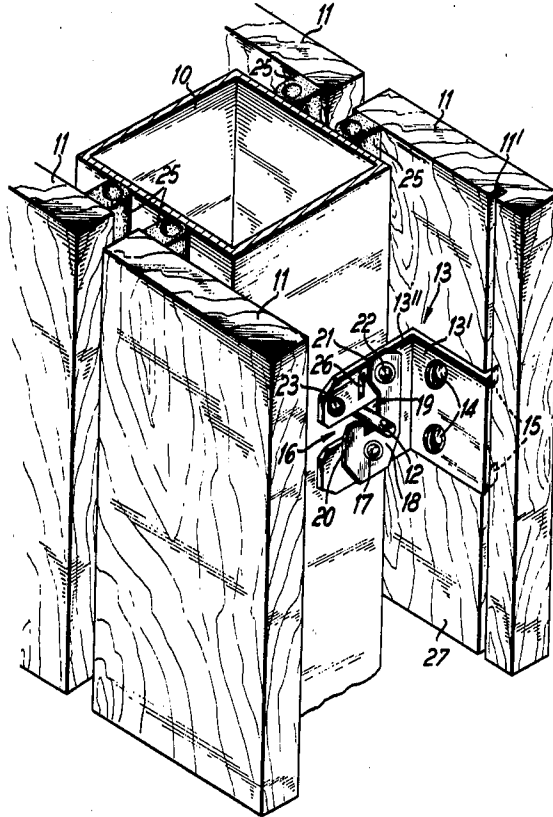
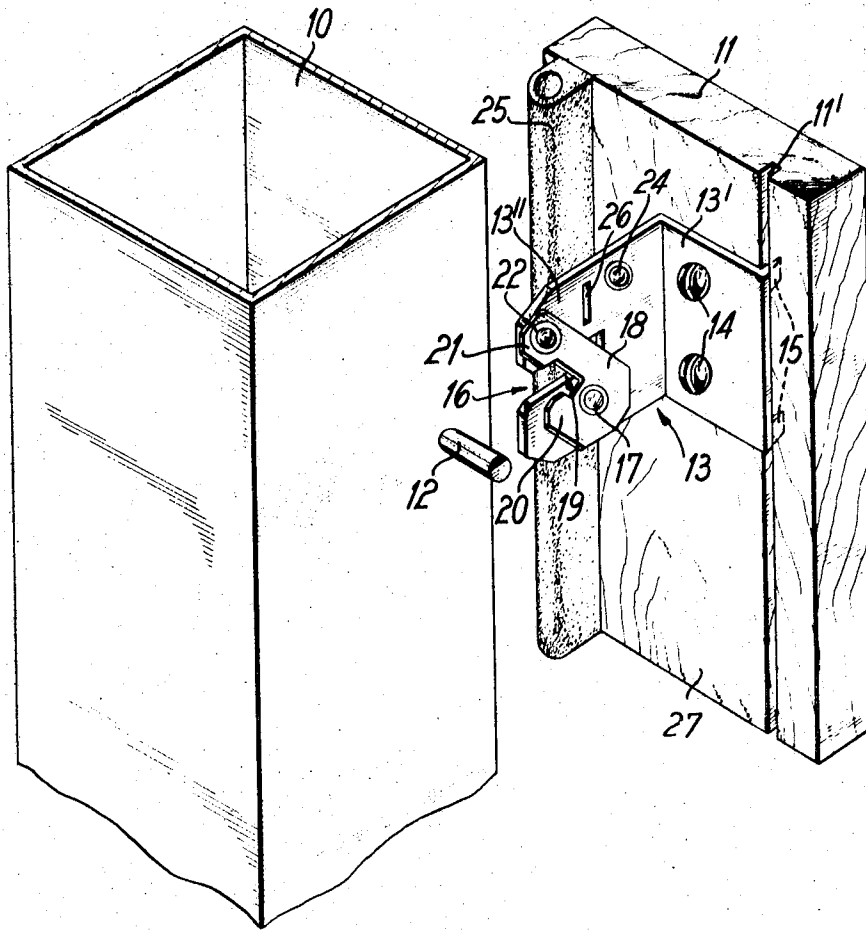
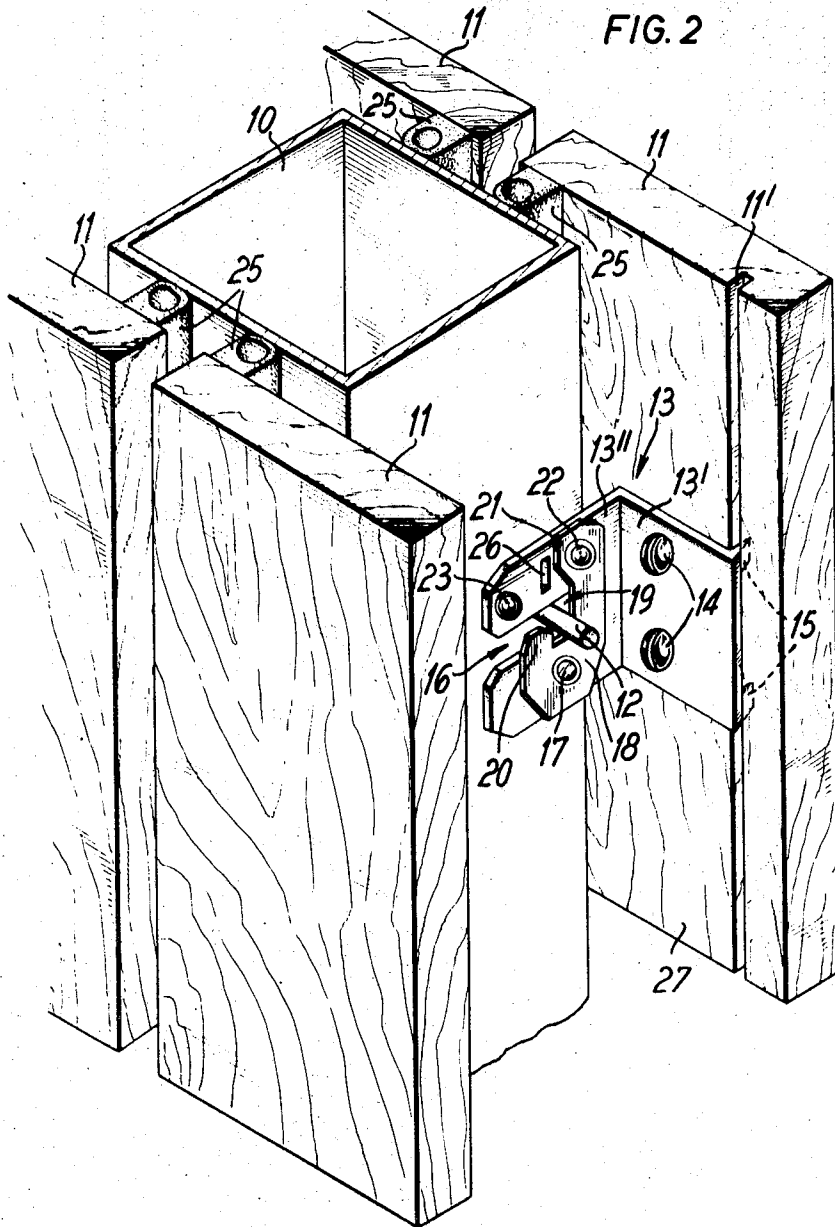


FIG. 1



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## WALL PANEL ASSEMBLY

## BACKGROUND OF THE INVENTION

The present invention relates to separable connections between cover members such as portions of pieces of furniture or wall panels and load-bearing members. Wall panels of this kind are widely used as partitions to subdivide large rooms into two or more compartments. In many instances, the partitions are not intended to be permanent, and the wall panels must therefore be designed so that they can be easily shifted around. This requirement implies that structural changes are to be avoided, and that the installation and subsequent removal of such wall panels leave no disfiguring marks. Nevertheless, even a temporarily installed partition must have walls which form rigid enclosures together with load-bearing members braced against the floor and the ceiling respectively. The movable panels must also fit smoothly against laterally adjoining permanent walls. Furthermore, the installation and removal of the panels should be so easy that the work can be done in a minimum of time even by untrained labor, without having to use special tools, and without requiring finishing steps.

## SUMMARY OF THE INVENTION

It is, therefore, an object of the present invention to provide simple and inexpensive means for removably connecting wall panels to a load-bearing member.

This object is attained by mounting a male coupling element, such as a wiper, on the load-bearing member, and by fastening one leg of an L-shaped bracket or an analogous female coupling element onto the wall panel which is to be connected to the load-bearing member. The bracket has a notch which receives the male coupling element on the load-bearing member when the panel is moved toward the latter. A hook or an analogous locking device with two arms defining a slit is pivotally attached to the bracket. In the open position of the hook, one of its legs extends across the notch. During movement into the notch the male coupling element pushes the one leg of the hook away from position and causes the hook to swivel through a predetermined angle, thus placing its other leg across the outer part of the notch proximate to its mouth, whereby the male coupling element is blocked against removal from the notch. Conversely, when the panel is to be separated from the load-bearing member, the force applied in pulling it away acts on the other leg of the hook whereby the other leg is moved away from locking position. Thus unlocked, the male coupling element is withdrawable from the notch, so that the panel member and the load-bearing member come apart.

The novel features which are considered as characteristic for the invention are set forth in particular in the appended claims.

The invention itself, however, both as to its construction and its method of operation, together with additional objects and advantages thereof, will be best understood from the following description of specific embodiments when read in connection with the accompanying drawing.

## BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a perspective view of portions of a load-bearing member and a cover member, with the connecting means in unlocked position; and

FIG. 2 is a perspective view of a portion of the load-bearing member and four cover members, showing one connecting means in locked position.

## DESCRIPTION OF THE PREFERRED EMBODIMENTS

In FIG. 1 there is shown a hollow rectangular beam 10 representing a load-bearing member which is braced respectively against the floor and the ceiling of a room (not shown). A cylindrical projection 12 which constitutes a male coupling element extends outward from one side of member 10 at a

right angle thereto. A cover member 11 which, according to one preferred embodiment is made of wood, is to be attached to member 10 so that its surface 27 is parallel to the axis of projection 12. A groove 11' extends longitudinally through the surface 27 of the member 11.

Leg 13' of an L-shaped metal bracket 13 which constitutes a female coupling element is attached to the surface 27 by a pair of screws 14 and secured additionally against dislocation by talons 15 which extend perpendicularly from leg 13' into the groove 11' of the member 11.

The leg 13'' which makes a right angle with the leg 13' has at its outer end a notch 16 adapted to receive projection 12 when the members 10 and 11 are in adjacent position. A rivet 17 passing through leg 13'' at a point proximate to the notch 16 fastens a hook-shaped locking device 18 to the leg 13'' in parallel alignment thereto. The arms 10, 21 of the locking device 18 are of different length and define an aperture or slit 19, thus giving the locking device a substantially U-shaped configuration. The locking device is adapted to swivel about the rivet 17. In the open position of the device 18, the open end of the notch 19 registers with the notch 16, and a socket 22 of the arm 21 then receives a portion of a first detent 23 provided on the outer end of leg 13''. In the locking position of the device 18, the socket 22 of the arm 21 is engaged by a second detent 24, also mounted on leg 13'', but placed close to the corner where legs 13' and 13'' are joined. The angular displacement of the hook 18 during movement between open and locking positions preferably approximates 45°. A slit 26 provided in leg 13'' between the detents 23 and 24, perpendicular to the longitudinal direction of notch 16, is designed to receive a removable member (not shown) to thus secure the respective parts in the locked position. The arms 20, 21 have cam faces or edge faces which are engaged by the projection 12 when the panel 11 moves toward the member 10.

A sealing ledge 25 attached to the surface 27 of member 11 and, according to one preferred embodiment, made of resilient material, is pressed close to the load-bearing member 10 when the two members are locked to each other.

In order to connect the wall panel member 11 to the load-bearing member 10, the projection 12 is introduced into the notch 16 with sufficient force to pivot the locking member 18 in a clockwise direction as viewed in FIG. 1, so that the socket 22 of arm 21 is moved away from the detent 23. The applied force disengages the arm 21 from the detent 23, and the device 18 pivots until the socket 22 of arm 21 receives the detent 24. The locking device 18 then places its arm 20 into a blocking position across the mouth of the notch 16, thus preventing unintentional removal of the projection 12 from the notch 16.

To separate the panel member 11 from the member 10, a force has to be applied to disengage the arm 21 from the detent 24, whereby the cam 20 is swung away from its blocking position across the notch 16 to release the projection 12, so that member 11 can be moved away from the load-bearing member 10.

In the embodiment of FIG. 2 one load-bearing member 10 is shown to support four wall panels or cover members 11 which form two parallel walls of a temporary partition. As described and illustrated, the L-shaped brackets can be firmly attached to the wall panels in the factory where the parts are manufactured, so that a readily mountable unit is deliverable at the building site.

It will be understood that each of the elements described above, or two or more together, may also find a useful application in other types of movable wall assemblies differing from the types described above.

While the invention has been illustrated and described as embodied in wall panels attached to a load-bearing member, it is not intended to be limited to the details shown, since various modifications and structural changes may be made without departing in any way from the spirit of the present invention.

Without further analysis, the foregoing will so fully reveal the gist of the present invention that other can by applying

current knowledge readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention.

I claim:

1. In a wall panel assembly, a combination, comprising, a load-bearing member having a pair of faces extending transverse to each other and a plate-shaped cover member having an inner surface, said cover member being movable with reference to said load-bearing member to and from a predetermined position in which said inner surface extends spaced from and substantially parallel to one of said faces of said load-bearing member; a male coupling element on one of said members extending substantially parallel to said one face and a female coupling element on the other member and extending with a portion thereof substantially normal to said one face, said male coupling element being arranged to enter said portion of said female coupling element in response to movement of said movable cover member to said predetermined position; locking means on said other member for releasably holding said male coupling element in said female coupling element, said locking means being movable by said male coupling element to a locking position in response to movement of said movable cover member to said predetermined position and away from said locking position to an open position in response to movement of said movable member away from said predetermined position; and a sealing ledge fixed to one of said members and extending between said one face of said load-bearing member and said inner surface of said cover member when the latter is in said predetermined position and cooperating with said coupling elements for maintaining said inner surface of said cover member substantially parallel to said one face of said load-bearing member when said locking means in said locking position holds said male coupling element engaged in said female coupling element.

2. A combination as defined in claim 1, wherein said male coupling element is a pin and said female coupling element is a bracket having two legs inclined with reference to each other, one of said legs being attached to one of said members and the other of said legs forming said portions of said female coupling element having a notch for receiving said male coupling ele-

ment.

3. A combination as defined in claim 2, wherein said plate-shaped cover member has a pair of longitudinal side edges, wherein said bracket is attached to said cover member with said other leg located inwardly of one of said side edges and engaging the other face of said load-bearing member when said cover member is in said predetermined position, said sealing ledge extending fixed to said cover member along the other edge of the latter and projecting from said inner surface toward said one face of said load-bearing member, said pin projecting from said other face of said load-bearing member.

4. A combination as defined in claim 1, wherein said locking means comprises a hook which is pivotally attached to said female coupling element.

5. A combination as defined in claim 4, wherein said hook comprises two substantially parallel arms.

6. A combination as defined in claim 5, wherein one of said arms is shorter than the other arm.

7. A combination as defined in claim 6, comprising two detent means, one of said detent means being engageable with said locking means in said open position and the other of said detent means being engageable with said locking means in said locking position.

8. A combination as defined in claim 7, wherein movement of said locking means between open and locking positions involves a pivotal movement through an angle of about 45°.

9. A combination as defined in claim 3, wherein one of said arms extends across said notch in the locking position of said locking means.

10. A combination as defined in claim 1, wherein said female coupling element comprises means for receiving a removable blocking device arranged to prevent movement of said locking means to open position.

11. A combination as defined in claim 1, wherein said locking means comprises a pair of cam faces one of which is engaged and moved by said male coupling element during movement of said movable member to said predetermined position, and the other of which is engaged and moved by said male coupling element during movement of said movable members from said predetermined position.

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