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CLIP FOR LOCATING AND MAINTAINING ADJACENT NON-INTERFITTING EDGES OF PANELS CO-PLANAR

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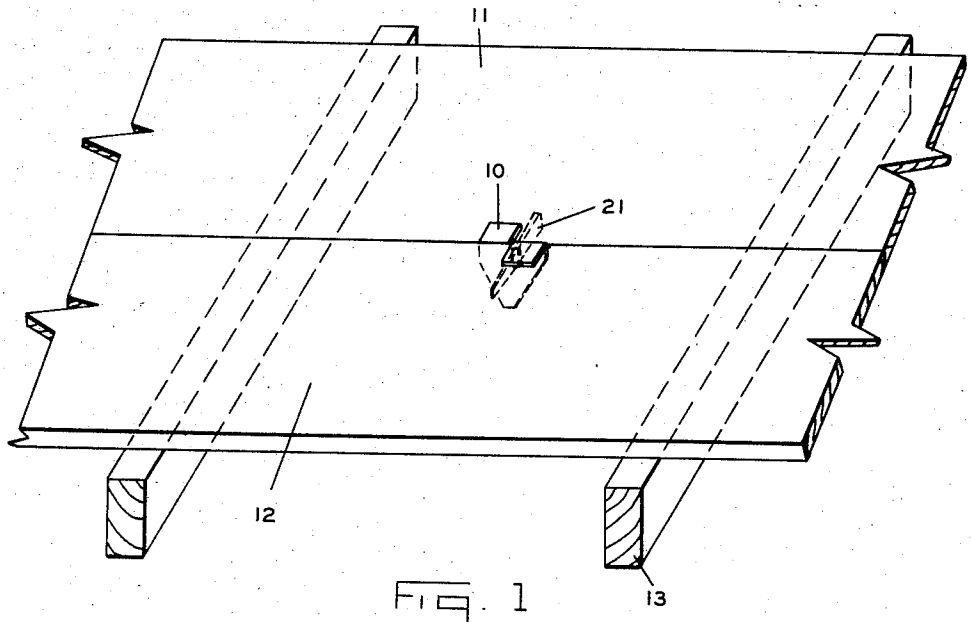


Fig. 1

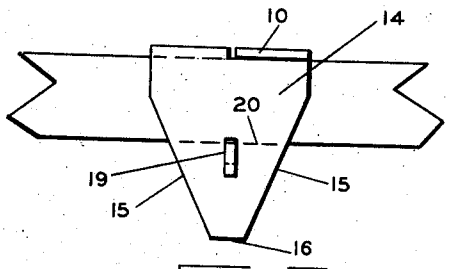


Fig. 2

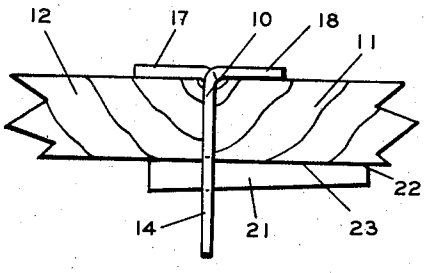


Fig. 3

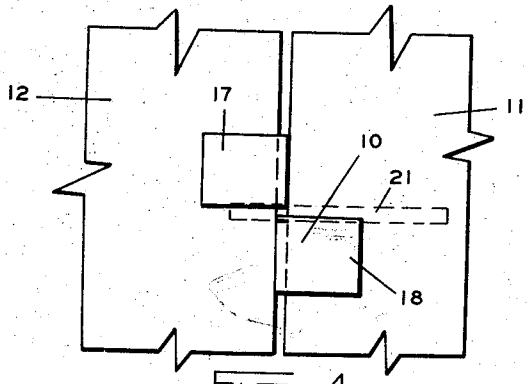


Fig. 4

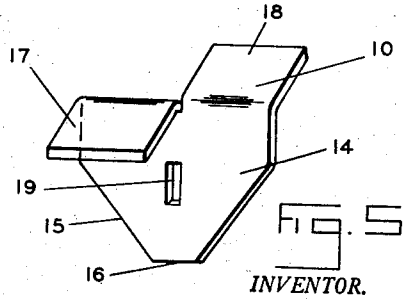


Fig. 5

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CLIP FOR LOCATING AND MAINTAINING ADJACENT NON-INTERFITTING EDGES OF PANELS CO-PLANAR

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2 Claims. (Cl. 20—92.7)

My invention relates to a clip for locating and maintaining adjacent non-interfitting edges of panels coplanar. It has to do, more particularly, with a clip which is adapted to be inserted between the unsupported and non-interfitting adjacent edges of panels to bring the edges in the same plane and to prevent one panel at its edge from bowing inwardly or outwardly relative to the other panel at its adjacent edge. Although I will describe my invention as being especially applicable to panels used in a floor structure, it should be understood that it is applicable to panels used in a vertical wall structure.

At the present time, it is customary to use in floor structures of houses or other buildings, sheets of material, such as plywood, for the sub-flooring. These sheets are supported by suitable joists and the panels are disposed with their side edges adjacent. These edges ordinarily do not interfit and are unsupported. Therefore, there is a tendency for one panel adjacent its edge to be displaced inwardly or outwardly relative to the adjacent panel edge, especially if a load is applied thereto and immediately removed therefrom which occurs, for example, in walking over the panels. If the plywood sub-flooring is covered by wood block, tile, or similar sectional covering, there is a tendency for the sections overlying the joints between adjacent panels to be loosened. If the floor covering is continuous, it may become cracked or worn at the joints due to the relative flexing of the adjacent panel edges. This relative flexing of the edges of the panels has caused so much difficulty that in some homes and buildings a requirement is made that the edges of the panels be supported by supports extending transversely of the joists under the joints. Obviously, this is quite costly and delays construction.

It is the main object of this invention to provide a simple, inexpensive clip which can be inserted quickly and with ease between the adajcent unsupported and non-interfitting edges of panels, which have been fastened to suitable supports, to locate such edges in the same plane and to maintain them co-planar even when the panels are subjected to loads tending to spring or bow them.

Various other objects will be apparent.

In the accompanying drawings, I have illustrated the preferred form of my invention. In this drawing:

Figure 1 is a perspective view showing my clip inserted between the adjacent side edges of two panels which are supported by joists.

Figure 2 is a side view of the clip associated with a panel.

Figure 3 is an edge view of the clip showing it inserted between the adjacent edges of two panels.

Figure 4 is a plan view of the clip associated with two adjacent panels.

Figure 5 is a perspective view of the clip.

With particular reference to the drawing, I have illustrated in Figures 1 to 4 the clip of my invention disposed in association with the edges of panels which are used in a floor structure. The clip is indicated in such figures generally by the numeral 10 and is shown in Figure 5 in

the way in which it is manufactured before being applied between the panels.

The panels may be plywood panels which are used as sub-flooring. They are indicated at 11 and 12 with their longer edges or side edges disposed adjacent each other. The panels 11 and 12 are supported by the joists 13 or other suitable supports.

The clip 10 is made of metal and comprises a vertically disposed body 14 which has the inwardly tapering side edges 15 which converge to a point 16. The body 14 is made of relatively thin metal, as shown in Figure 3, so that it can pass readily through the joint between the adjacent panels 11 and 12. Reversely directed stop tabs 17 and 18 are provided on the upper end of the body 14 by slitting the upper portion of the body midway between its side edges and bending the tabs reversely into horizontal position as shown in Figure 4. Thus, the tabs 17 and 18 extend laterally in both directions and are normal to the body 14. Consequently, when the clip is driven into the joint between adjacent panels, the tabs 17 and 18 will prevent movement entirely therethrough.

A vertically disposed locking slot 19 is formed in the body 14 substantially midway between its edges. As shown in Figure 2, this slot 19 extends slightly above the dotted line 20 which indicates the thickness of the panels with which the clip is to be used. In other words, the distance from the top of the slot 19 to the lower surfaces of the tabs 17 and 18 is less than the thickness of the panels. The slot 19 is adapted to receive a locking wedge 21 which may be in the form of an ordinary floor nail that has one corner rounded so that it will not dig into the lower surface of the one panel when it is driven transversely into the slot 19, as shown in Figure 3. When it is so driven, it will exert a downward pull on the tabs 17 and 18 and pull the panels down against the wedge 21. It will be noted that the upper edge 23 of the wedge 21 is straight or flat.

The use of this clip 10 will be apparent from the above description. After the panels 11 and 12 are secured to the joists 13 in any suitable manner, such as by nails or screws, the clip 10 is applied. It is applied by driving the body 14 into the joint between adjacent panels 11 and 12, it being understood that the wedge slot 21 is not yet in position. This driving can be accomplished with an ordinary hammer and is continued until the tabs 17 and 18 rest firmly on the upper surfaces of the panels or are embedded slightly therein. The body 14 will project downwardly below the lower surfaces of the panels, as shown in Figures 2 and 3, when the tabs 17 and 18 are resting on the upper surfaces of the panels, as shown in Figures 1 to 4. As previously indicated, the slot 19 will extend slightly upwardly beyond the lower surfaces of the panels. If the wedge 21 is now driven in place in the slot 19, it will locate the two panels 11 and 12 in the same plane and will maintain them in such plane, due to the cooperation of the tabs 17 and 18 and the straight edge 23 of the wedge which clamp the edges of the panels and hold them at the same level.

It will be apparent from the above description that I have provided a simple clamp structure which can be manufactured cheaply in large quantities by ordinary stamping, slitting and punching operations. The clip structure can be applied easily and quickly with an ordinary hammer. It will effectively locate and hold the adjacent edges of the panels at the same level so that any type of floor covering can be applied without danger of loosening or damage by the uneven bowing or sagging of the panels at their adjacent unsupported edges.

Various other advantages will be apparent.

According to the provisions of the patent statutes, the principles of this invention have been explained and have

been illustrated and described in what is now considered to represent the best embodiment. However, it is to be understood that, within the scope of the appended claims, the invention may be practiced otherwise than as specifically illustrated and described.

Having thus described my invention, what I claim is:

1. In combination, a pair of weight-supporting panels of substantially equal thickness having adjacent unsupported an non-interfitting edges providing a joint therebetween, said panels being adapted to receive the weight to be supported on their upper surfaces, supports for the panels extending transversely thereof and of the joint therebetween beneath the panels and spaced longitudinally of the joint, a clip for use in the joint between said edges intermediate said supports, said clip comprising a thin body adapted to be passed downwardly through the joint longitudinally thereof, fixed stop tabs extending in opposite directions on the outer end of the body substantially at right angles thereto for engaging the upper surfaces of both panels adjacent their edges, a vertically disposed slot in the inner portion of the body and extending transversely therethrough, said slot having its upper end spaced below the lower surfaces of said stop tabs a distance less than the thickness of said panels, and a lock pin passed through said slot and engaging the under surfaces of both panels at their adjacent edges, said lock pin having a continuous unbroken straight upper edge and an inclined lower edge so that it is tapered towards its inner end with the edges in fixed relationship to each other, the lower inclined edge of said pin engaging the lower end of the slot and the upper straight continuous edge of the pin extending transversely across said joint and engaging the lower surfaces of the panels at each side of the joint and being substantially parallel to the cooperating stop tabs so as to provide weight supporting bearing edges beneath the panel surfaces at opposite sides of the joint which cooperate with said stop tabs to prevent relative vertical movement of the adjacent panel edges so that they will be maintained in the same horizontal plane.

2. A clip for use in the joint between a pair of panels of substantially equal thickness having adjacent unsupported and non-interfitting edges, said clip comprising a thin body adapted to be passed through the joint longitudinally thereof, fixed stop tabs extending in opposite directions on the outer end of the body substantially at right angles thereto for engaging the surfaces of both panels of the outer face thereof adjacent their edges, a slot in the inner portion of the body and extending along the body and transversely therethrough, said slot having its outer end spaced within the inner surfaces of said stop tabs a distance less than the thickness of said panels, and a lock pin for passing through said slot for engaging the surfaces of the inner faces of both panels at their adjacent edges, said lock pin having a continuous unbroken straight upper edge and an inclined lower edge so that it is tapered towards its inner end with the edges in fixed relationship to each other, the lower inclined edge of said pin adapted to engage the lower end of the slot and the upper straight continuous edge of the pin adapted to extend transversely across said joint and engage the inner faces of the panels at each side of the joint and being substantially parallel to the cooperating stop tabs so as to provide supporting bearing edges for the surfaces of the inner panel faces at opposite sides of the joint which will cooperate with said stop tabs to prevent relative movement of the adjacent panel edges so that they will be maintained in the same plane.

References Cited in the file of this patent

UNITED STATES PATENTS

1,723,500 Campbell ---------- Aug. 6, 1929

FOREIGN PATENTS

622,156 Great Britain ---------- Apr. 27, 1949