Nov. 17, 1942. F. S. BEIGER ET AL 2,302,487

HOLLOW CORE FLUSH PANEL DOOR

Filed March 24, 1941

Fig. 1

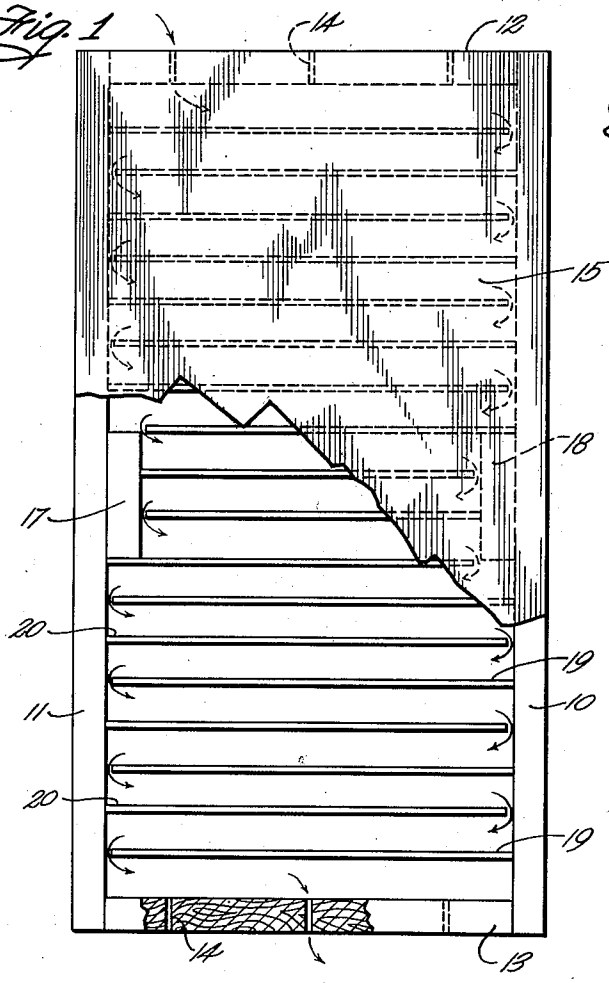


Fig. 2

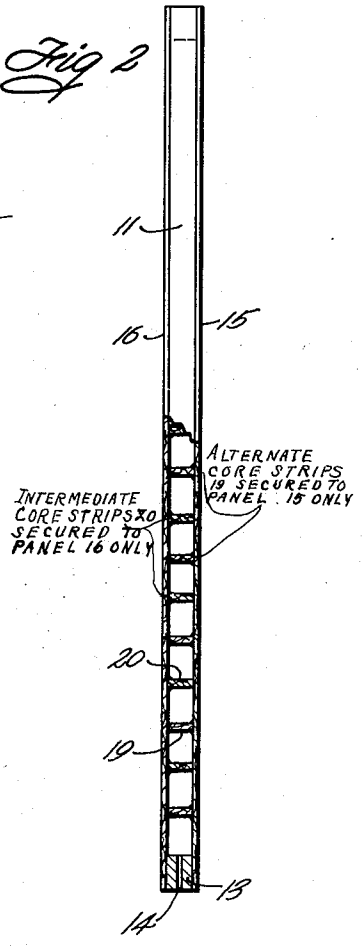
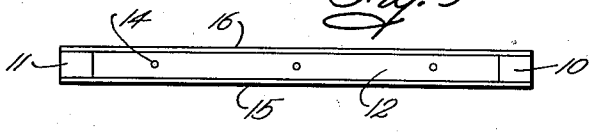


Fig. 3



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HOLLOW CORE FLUSH PANEL DOOR

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4 Claims. (Cl. 20—35)

This invention relates to a hollow core flush panel door.

An object of the invention is to provide a flush panel door which is hollow and which is so designed that warpage of the door due to either moisture or temperature conditions is effectively prevented. Heretofore, flush panel doors have been devised between the panels of which there are positioned transversely extending strips or core pieces. These may be interlocked with each other or separate. Usually, however, each transverse piece or core piece is glued or otherwise fastened to the inner faces of both panels of the door. Such a construction is disadvantageous for several reasons. If the core pieces or transverse strips are glued to both panels of the door, the door is very apt to warp either bowing or twisting under moisture and temperature conditions. Any tendency of one panel to warp is transmitted directly to the other through these core pieces and the entire door under these circumstances warps as a unit. By means of the present invention the warping of the door is effectively eliminated.

Another object of the invention is to provide a ventilated hollow core flush panel door which will cause the door to remain dry and well ventilated at all times and which will permit of the temperature within the door becoming equalized with the temperature on the exterior thereof quite readily.

With the foregoing and other objects in view, which will be made manifest in the following detailed description and specifically pointed out in the appended claims, reference is had to the accompanying drawing for an illustrative embodiment of the invention, wherein:

Figure 1 is a view in side elevation, parts being broken away of the improved hollow core flush panel door embodying the present invention;

Fig. 2 is an edge view of the same, parts being broken away and shown in vertical section; and

Fig. 3 is a top plan view of the door.

Referring to the accompanying drawing wherein similar reference characters designate similar parts throughout, the improved door comprises two opposed stiles 10 and 11 joined at the top and bottom by rails 12 and 13. The rails and stiles may be connected together at the corners of the door in any suitable or preferred manner. The rails have preferably a plurality of openings or holes 14 drilled therethrough. The panels of the door are indicated at 15 and 16 and in the preferred form of construction, these panels are formed of plywood although panels of single thickness may be employed if so desired. These panels are flush or in other words present planar outer surfaces. They overlie the sides of the stiles and rails. At about the center of the stiles there are lock blocks 17 and 18, these being secured to the inner edges of the stiles and preferably extend a sufficient vertical length so that regardless of which rail is positioned at the bottom of the door the lock blocks will be suitably positioned to receive the door lock. Between the opposed panels there are positioned core strips which are staggered as follows. Alternate core strips 19 extend from stile 10 toward stile 11. Intermediate core strips 20 extend from stile 11 toward stile 10. These core strips do not bridge the entire distance between the stiles so that collectively they define a tortuous passage running from stile to stile of the door through which air may circulate. Thus air descending through the openings 14 in the upper rail 12 progresses from side to side throughout the length of the door and finally exits through the opening 14 in the bottom rail 13. Thus, the entire interior of the door is well ventilated at all times and as air may readily pass therethrough temperatures on the inside and on the outside of the door will tend to remain equalized at all times.

In addition to being staggered as above described, the core pieces are staggered with respect to their attachment to the panels 15 and 16. Thus, core pieces 19 are glued or otherwise fastened to the inner face of panel 15. Core pieces 20 are glued or otherwise fastened to the inner face of panel 16. The core pieces 19 are unattached to panel 16 but merely bear against its inner face. The same is true of core pieces 20 which are unattached but merely bear against the inner face of panel 15. Thus, although the core pieces bridge the space between the panels, each core piece is only fastened to one panel merely bearing against the inner face of the other. Any tendency of one panel to warp is consequently not transmitted through the core pieces to the other panel.

We find that a door manufactured as above described has greatly superior qualities of resisting warping under moisture and temperature conditions over doors that employ core pieces which are glued or otherwise fastened to both panels. In addition thereto the door is well ventilated.

We also observe that a door as thus constructed has this additional quality. For some reason unknown to us, if an enamel coating is applied over the outside faces of the panels 15

and 16 the presence of the core pieces behind the panel will be apparent through the enamel if the core pieces are glued to both panels. This may possibly be due to a slight deformation of the panels at the sides of the core pieces where the core pieces are glued to both panels. With the improved door wherein the core pieces are merely attached to one panel the presence of the core pieces is not observable through the enamel under like conditions.

Although the core pieces are preferably horizontally arranged as shown, it will be readily understood that if desired these core pieces may be arranged vertically or at any other inclination. The essential feature of the present invention is that a continuous air ventilating passage is provided thereby and each core piece is attached to one panel only, merely bearing against the inner face of the opposite panel of the door.

It is desirable to effectively dry out the door upon completion and to seal the pores of the wood where exposed on the interior of the door. To this end, the holes in the rails may be used to advantage. By employing a multiple hose, not shown, warm air laden with oil vapor or atomized oil may be blown through the door from the holes in one rail through the tortuous passages and out the holes in the other rail. This is effective to dry out the door and the oil or wood preservative will effectively seal the pores of the same.

Various changes may be made in the details of construction without departing from the spirit or scope of the invention as defined by the appended claims.

We claim:

1. A hollow core flush panel door comprising stiles and rails, panels against said stiles and rails and core pieces arranged between the panels, each core piece being attached to one panel and bearing against but being unattached to the opposed panel.

2. A hollow core flush panel door comprising stiles and rails, panels against said stiles and rails and core pieces arranged between the panels, each core piece being attached to one panel and bearing against but being unattached to the opposed panel, the alternate core pieces being attached to the panel on one side of the door and intermediate core pieces being attached to the panel on the opposite side of the door.

3. A hollow core flush panel door comprising stiles and rails, panels against said stiles and rails and core pieces arranged between the panels, each core piece being attached to one panel and bearing against but being unattached to the opposed panel, each core piece extending from one stile toward the other but terminating short thereof.

4. A hollow core flush panel door comprising stiles and rails, panels positioned thereagainst, and core pieces arranged between the panels, alternate core pieces extending from one stile toward the other and intermediate core pieces extending from said other stile toward the first mentioned stile, said core pieces terminating short of their opposed stiles, the rails having openings therein, said alternate core pieces being attached to one panel and bearing against but being unattached to the opposed panel and said intermediate core pieces being attached to said opposed panel and bearing against but being unattached to the mentioned panel.

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