

PATENT SPECIFICATION

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DRAWINGS ATTACHED

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(54) PANEL MEMBER

(71) We, DART INDUSTRIES INC., a Corporation organised and existing under the Laws of the State of Delaware, United States of America, of 8480 Beverley Boulevard, Los Angeles, State of California, 90054, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to a panel member and to a panel construction set. Such a set can enable a user to fashion a variety of configurations, including typical dollhouse-like structures. More particularly, the invention contemplates varying arrangements of such panels and accommodates such arrangements so as to engage securely each panel with respect to another. Similarly, the panel edge construction provides a continuous smooth flowing transition at the points of panel intersection during engagement.

Several aspects similar to the toy construction of British Patent Specification No. 959581 are employed in the present invention. Of particular significance, however, is the fact that the panels of this invention are interengageable at only their corner-most portions and that intermediate these portions, there is positioned a beveled side wall construction. Such beveled construction, as will become more evident hereinbelow, lends itself to producing a smooth flowing uniform edge arrangement regardless of the manner in which the various panels are interconnected.

The invention provides a panel member for interengagement with members similar thereto, and including a top wall member having a dependant skirt portion extending partially therearound, ledge portions positioned at spaced intervals around said skirt portion and extending approximately per-

pendicularly therefrom, and beveled side-wall members placed intermediate of said ledge portions and extending outwardly from said top wall member to a terminus proximate the outermost edge of said ledge portion.

It is preferred that said ledge portions are positioned along said skirt portion adjacent the respective corners of said top wall member.

It is further preferred that said beveled side wall members extend from a major portion of the edge of said top wall member.

According to a further feature of the invention an opening may be provided in said top wall member and conveniently said opening extends to the said skirt portion on at least one side of said panel member.

The invention also provides a panel construction arrangement including a plurality of interengaged panels each having top wall members substantially bounded by a depending skirt portion, ledge portions extending from said skirt portion receiving couplings thereon to securely fasten said panels together, and beveled side wall members extending between said ledge portions, adjacent side wall members on the interengaged panels being in juxtaposition so that a substantially smooth transitional area is provided at the junctions of said panel members.

In this form it is preferred that said ledge portions are positioned along said skirt portion adjacent the respective corners of said top wall member.

Preferably said beveled side wall members extend from a major portion of the edge of said top wall member.

A specific embodiment of the invention and some variants thereof will now be described by way of example with reference to the accompanying drawings wherein:—

[Price 25p]

Figure 1 is a top plan view of a wall panel.

Figure 2 is a bottom plan view of the wall panel shown in Figure 1.

5 Figure 3 is a side elevation of the wall panel depicted in Figure 1.

Figure 4 is a cross-section of the wall panel along line 4-4 in Figure 1.

Figure 5 is a top plan view of a door panel.

Figure 6 is a bottom plan view of the door panel shown in Figure 5.

Figure 7 is a side elevation of the door panel depicted in Figure 1 looking at the side to which the opening in the panel extends.

Figure 8 is a cross-section of the door panel along line 8-8 of Figure 5.

Figure 9 is a top plan view of a window panel.

Figure 10 is a bottom plan view of the window panel shown in Figure 9.

Figure 11 is a side elevation of the window panel depicted in Figure 9.

25 Figure 12 is a cross-section of the window panel along line 12-12 in Figure 9.

Figure 13 is a top plan view of a roof panel.

Figure 14 is a side elevation of the roof panel shown in Figure 13.

Figure 15 is an end elevation of the roof panel shown in Figure 13.

Figure 16 is a cross-section through the roof panel along line 16-16 of Figure 13, and.

Figure 17 is a perspective view of several interconnected wall panels.

Referring to the annexed drawings, there are disclosed in Figures 1, 5 and 9 three very similar hollow body element constructions of a wall panel 10, door panel 12, and window panel 14, respectively. Each of these panels takes approximately the same form with the exception that the door and window panels 12 and 14 include inwardly disposed openings 16 and 18, extending therethrough respectively. Thus, it may be further seen that each panel or hollow body element includes a substantially flat top portion or wall 20 which is bounded by a skirt member 22 dependant from the perimeter of each top portion or wall 20. From the cornermost portion 24 of this skirt member there projects a substantially horizontally directed, relatively thin ledge portion 26 that is located about midway on the height of the skirt member 22.

In the embodiments illustrated, each element 10, 12 and 14 is square and the ledge portion 26 extends around the corners thereof. This part of the ledge portion is preferably cut-off at approximately a 45° angle; however, they may be rounded, if desired. The ledge portion 26 is therefore

divided into two sections at each of the four corners of the panels, each having a top face 26a and a bottom face 26b. These faces have at their outermost edges elongated bosses or projections 28 & 28a respectively; preferably there are two bosses 28 on the top face of each ledge section, and in staggered relation thereto there are three bosses 28a on the bottom face (see Figures 1 and 3). These bosses or projections are arranged a predetermined distance from each other, as shown; and form, together with the ledge portion 26, a first male part of a detachable joint structure.

Intermediate these corner ledge portions 26, there is positioned a beveled side wall member 30 which extends downwardly from top portion 20 to the outermost edge 32 of ledge portion 26. The corner junction between top wall 20 and skirt members 22 at the panel corners are also beveled at 31 so to produce a more pleasing appearance.

As is most readily apparent from Figure 17, the beveled side wall members 30 of adjacently positioned interengaged panels are juxtapositioned and form a continuous smooth outer wall between panels regardless of their relative positions with respect to each other. As can be seen, an outside cornering arrangement 33 of the top walls 20 exposes the couplings or column-shaped elements 34 but the intermediate beveled side wall members 30 produce a mating surface area that forms a smooth transition between the top walls. Similarly, where the topwalls are positioned to produce an inside corner 36 the beveled side wall members 30 are positioned face to face and a sharp corner area results. Planar positioning of the panels results in a V-shaped joint being formed therebetween as at 38 but this is negated by the smooth disposition produced by the couplings 34 between the top walls 20.

Another similar hollow body element is a roof panel 40 depicted in Figures 13-16. This panel includes a dual top wall area having portions 42 & 44 which are angularly disposed with respect to one another and are joined together at a peak 46. The roof is completed by integral end wall members 48.

As with the wall type panels, this panel also incorporates a skirt member 22 which is placed along the lower edges of portions 42 & 44. Likewise, the ledge portion 26, bosses 28, 28a and beveled side wall members 30, as hereinabove described, are similarly employed so that this element may be securely joined with any of the others.

Referring again to the wall, door and window panels and particularly to Figures 2, 4, 6, 8, 10 and 12, it will be apparent

that the hollow body elements are reinforced by an interconnected web structure 48 emanating outwardly from the underface of the top wall portion 20. Also there are attached to that underface and to the inner face of skirt member 22, a plurality of rib means 50. Each of these rib means has a web 52 terminating in an enlarged or circular-shaped end.

10 The ribs 50 are of a similar construction to those described in British Patent Specification No. 959581 and this, as well as the ledge/boss and coupling 54 arrangements function as described therein. It should suffice to say, therefore, that the embodiments of this example provide a panel toy of a slip or snap together construction, which toy may be employed to create innumerable configurations of varying size and design.

20 All the hollow body elements as hereinbefore described by way of example may be manufactured of moldable plastics material, for example by injection molding or any other suitable process. Such material should have a certain springiness and should not be liable to break, so that it lends itself to composing a great variety of structural configurations in accordance with a user's ideas and imagination. Similarly, coupling element 34 may be made of an extrudable plastics composition such as high density polyethylene, so that it exhibits the flexibility and springiness appropriate for the purposes of the example.

35 It can be seen that there has been described a versatile panel type toy that makes possible the creation of sizable, stable configurations yet maintains a flexibility heretofore only found in smaller building block type toys.

WHAT WE CLAIM IS:—

1. A panel member for interengagement 45 with members similar thereto, and including a top wall member having a dependant skirt portion extending partially therearound, ledge portions positioned at spaced intervals around said skirt portion and extending approximately perpendicularly therefrom, and beveled sidewall members placed intermediate of said ledge portions and extending outwardly from said top wall member to a terminus proximate the

outermost edge of said ledge portion. 55

2. A panel member as claimed in claim 1 wherein said ledge portions are positioned along said skirt portion adjacent the respective corners of said top wall member.

3. A panel member as claimed in claim 2 wherein said beveled side wall members extend from a major portion of the edge of said top wall member. 60

4. A panel member as claimed in any one of the preceding claims wherein an opening is provided in said top wall member. 65

5. A panel member as claimed in claim 4 wherein said opening extends to the said skirt portion on at least one side of said panel member. 70

6. A panel construction arrangement including a plurality of interengaged panels each having top wall members substantially bounded by a depending skirt portion, ledge portions extending from said skirt portion receiving couplings thereon to securely fasten said panels together, and beveled side wall members extending between said ledge portions, adjacent side wall members on the interengaged panels being in juxtaposition so that a substantially smooth transitional area is provided at the junctions of said panel members. 75

7. A panel construction arrangement as claimed in claim 6 wherein said ledge portions are positioned along said skirt portion adjacent the respective corners of said top wall member. 80

8. A panel construction arrangement as claimed in claim 6 or claim 7 wherein said beveled side wall members extend from a major portion of the edge of said top wall member. 85

9. A panel member substantially as hereinbefore described with reference to and as shown in Figures 1 to 4, 5 to 8, 9 to 12, and 13 to 16 of the accompanying drawings. 95

10. A panel construction arrangement substantially as hereinbefore described with reference to and as shown in Figure 17 of the accompanying drawings. 100

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4. A panel member as claimed in any one of the preceding claims wherein an opening is provided in said top wall member.

5. A panel member as claimed in claim 4 wherein said opening extends to the said skirt portion on at least one side of said panel member.

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7. A panel construction arrangement as claimed in claim 6 wherein said ledge portions are positioned along said skirt portion adjacent the respective corners of said top wall member.

8. A panel construction arrangement as claimed in claim 6 or claim 7 wherein said beveled side wall members extend from a major portion of the edge of said top wall member.

9. A panel member substantially as hereinbefore described with reference to and as shown in Figures 1 to 4, 5 to 8, 9 to 12, and 13 to 16 of the accompanying drawings.

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