June 9, 1959 S. H. AKERBERG 2,889,586

DOOR STRUCTURE

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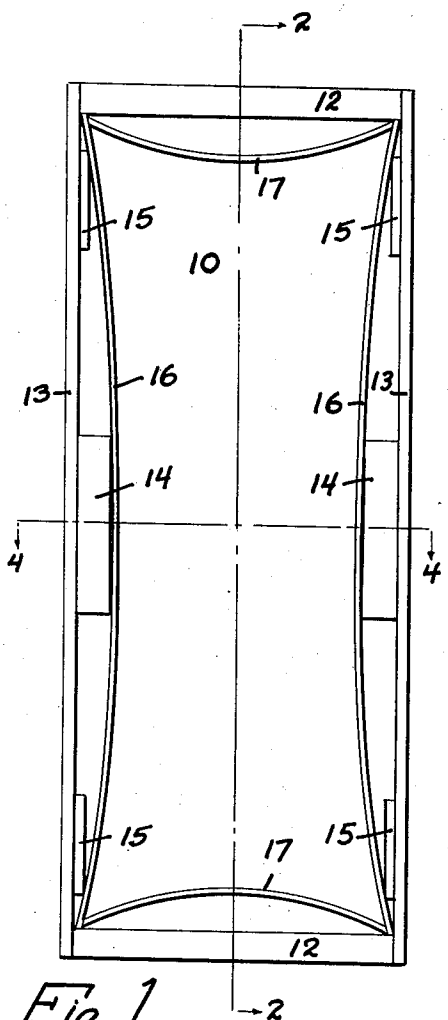


Fig. 1

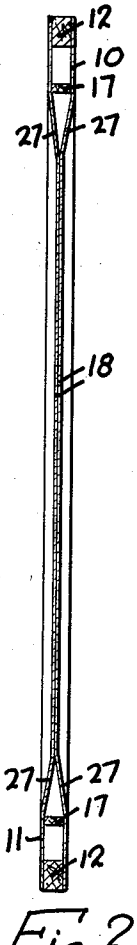


Fig. 2

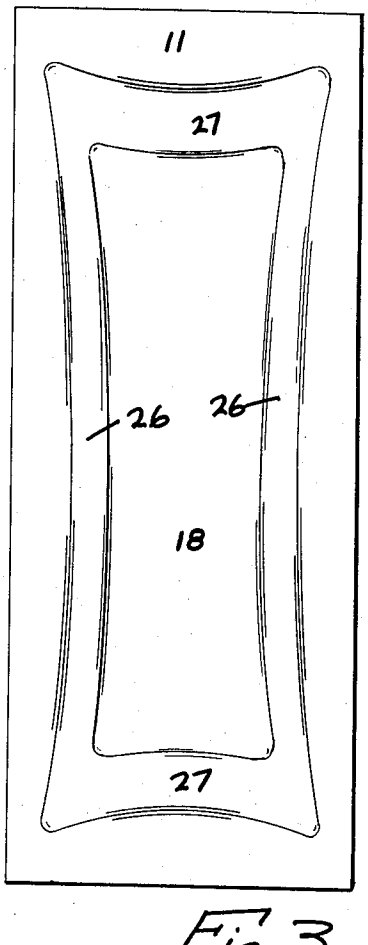


Fig. 3

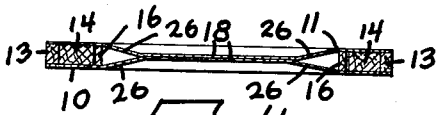


Fig. 4

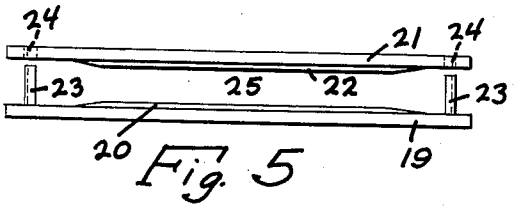


Fig. 5

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DOOR STRUCTURE

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1 Claim. (Cl. 20—35)

My invention relates to a door structure.

An object of my invention is to provide a door of relatively simple construction, and which includes structural features rendering the door of maximum strength and yet having a pleasing design and exterior appearance.

A further object of my invention is to provide a door having equal stresses from the center to the perimeter of the door, whereby warping effects will be considerably reduced.

A further object of my invention is to provide a door and method for forming the door whereby it can be formed with a minimum of assembly time.

With these and other objects in view, my invention consists in the construction, arrangement, and combination of the various parts of my device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claim, and illustrated in the accompanying drawings, in which:

Figure 1 is a plan view of the door in an assembled form, with the top ply being removed, and showing the lower ply in place and before the door has been placed in the forming mould,

Figure 2 is a sectional view of Figure 1 taken along the sectional line 2—2 of Figure 1, with the door in its completed form,

Figure 3 is a forward elevation of the door in its completed form,

Figure 4 is a sectional view of Figure 1 taken along the lines 4—4 thereof, and with the door in its completed form, and

Figure 5 is a side elevation of a preferred form of the press form.

My invention contemplates the provision of a door structure which includes several advantages as above stated, and including further advantages as will be apparent.

I have used the character 10 to designate one of the thin wood plies of the door, which will cover the entire door, allowance being made for trim. I have further used the character 11 to indicate a further ply spaced from the ply 10, these plies thereby providing the front and rear walls of the door, the ply 10 designating the rear wall.

Glued to the top and bottom edges by means of a satisfactory water-proof glue are the normally horizontally positioned strips 12 made of suitable wood, the plies 10 and 11 also being made of plywood preferably. Joining the strips 12 are the vertically positioned strips 13.

Also glued to the wall 10 are the lock blocks 14, which blocks thereby provide means wherein a lock structure can be placed at either side of the door as desired. Also, for wider doors the hinge blocks 15 can be provided for attachment of the door hinges. Also suitably glued

to the wall 10 are the vertically positioned bowed strips 16, and joining the ends of these bowed strips are the horizontal further bowed strips 17, these bowed strips being made of suitable wood, Figure 1 clearly showing the completed arrangement.

For attaching the various pieces together, the glue is placed on the inner faces of the plies 10 and 11, the various members 12, 13, 14, 15, 16, and 17 are placed in position, and next the wall 11 is placed in position and the pressure is applied at the necessary points to glue the various members together, and also pressure is applied against a suitable form to bring the central portions 18 of the plies 10 and 11 together, after which the glue is allowed to dry or set to thereby provide the completed door.

Figure 5 illustrates a form which is preferably used for the formation of the present door, in which the character 19 indicates a base to which is attached the central raised mould 20 which corresponds to the shape shown in sections, Figures 2 and 4, the character 21 indicating an upper form having the further mould portion 22. Attached to the base 19 are the vertically positioned angle members 23 of which there will be four, which are adapted to pass within the angle-shaped openings 24 in the upper form 21, and by virtue of this construction the pre-formed door can be placed in the space 25, and the upper member 21 brought down accurately against the lower member 19 after which the pressure can be applied by suitable clamps spaced about the perimeter of the forms 19 and 21, or by any other pressure means, and so that the central portions of the plies 10 and 11 will be forced or stretched into the concave portions shown. It will be understood that the width of the members 19 and 21 will correspond to the width of the door.

As a result of this completed structure, it will be noted that arches will be formed in the areas 26 and 27 as shown in Figure 3, thereby providing the arch principle all about the perimeter of the door to insure maximum strength and to maintain equal stresses from the center to the perimeter to prevent warpage, and to provide all of the various advantages mentioned in the objects of my invention.

Some changes may be made in the construction and arrangement of the parts of my invention without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claim any modified forms of structure or use of mechanical equivalents which may be reasonably included within its scope.

I claim as my invention:

A door structure comprising a pair of spaced plywood sheets, marginal strips attached about the perimeter of said sheets and between said sheets, further substantially arcuate strips positioned intermediate the said marginal strips and positioned adjacently to the marginal strips, said arcuate strips terminating near the corners of said sheets, said arcuate strips being bowed inwardly, said sheets being compressed and secured together along the entire inner medial portions of said door structure and substantially adjacent to said further arcuate strips.

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