Feb. 6, 1962 C. W. MOSS 3,020,045

SAND BOX AND SHELTER STRUCTURE

Filed July 6, 1959

FIG. 1

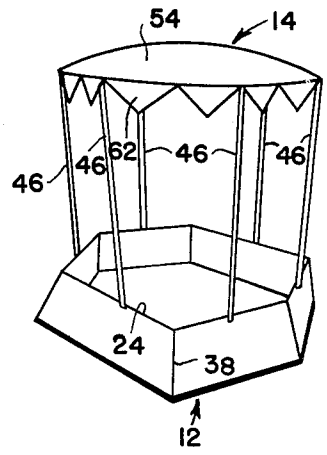


FIG. 2

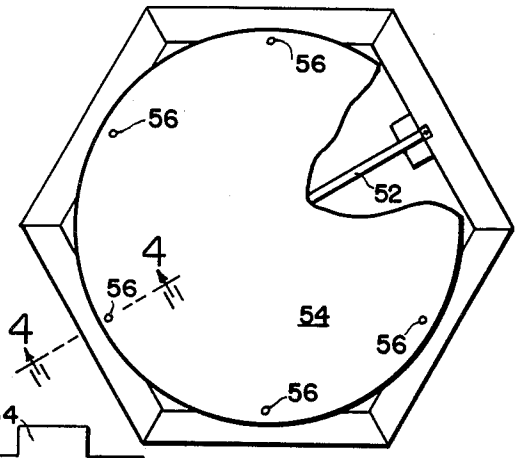


FIG. 3

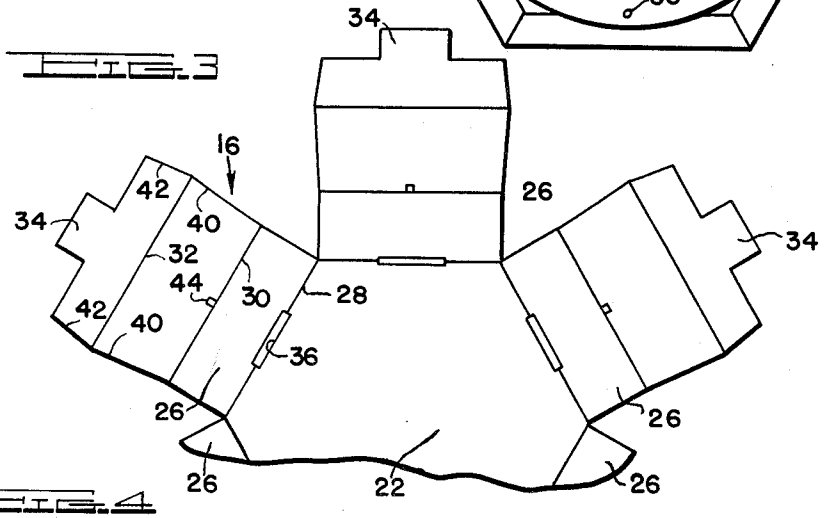
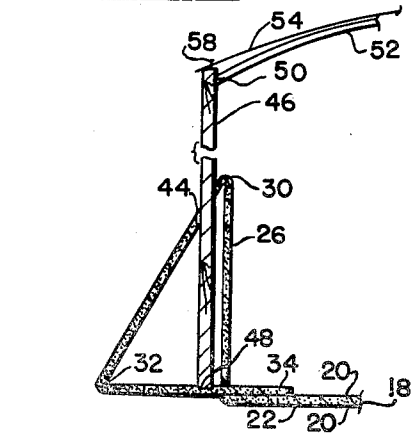


FIG. 4



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SAND BOX AND SHELTER STRUCTURE

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The present invention relates to a play structure which is particularly, but not exclusively, adapted for use as a children's sand box.

It is an object of the present invention to provide a prefabricated play structure which can be easily assembled and which is formed from relatively low cost materials.

It is still another object of the present invention to provide a prefabricated play structure of the foregoing character which can be folded into a relatively small, flat, light weight package for merchandising and transportation purposes.

It is still another object of the present invention to provide a play sand box for children which has a blank of board-like rigidity folded to form a unitary base portion and which is characterized by the unique manner of folding the blank together to provide a hollow bowl-like structure adapted to contain sand.

It is still another object of the present invention to provide a sand box of the foregoing character which includes a canopy which can be mounted on or removed from the bowl-like structure with relative ease, and when mounted in place provides a relatively rigid structure.

It is still another object of the present invention to provide a canopy mounting on a bowl-like structure, said canopy having a circular arrangement of upright poles mounted on said bowl-like structure and a plurality of ribs forming the upper framework and operatively connected to said ribs so as to urge them into a firm holding relation with respect to said bowl-like structure.

It is still another object of the present invention to provide a canopy of the foregoing character which has a fabric cover overlying the ribs, and said cover is connected to the supporting poles so as to be drawn taut by the thrusts of said ribs.

Other objects of this invention will appear in the following description and appended claims, reference being had to the accompanying drawings forming a part of this specification wherein like reference characters designate corresponding parts in the several views.

In the drawings:

FIGURE 1 is a perspective view illustrating a children's play sand box embodying one form of the present invention;

FIGURE 2 is an enlarged top plan view of the sand box with a portion broken away for purposes of illustration;

FIGURE 3 is an enlarged fragmentary plan view of the blank used to form the base portion of the sand box; and

FIGURE 4 is a section taken on the line 4—4 of FIGURE 2 with a portion of the illustrated pole broken away.

Before explaining the present invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawings, since the invention is capable of other embodiments and of being practiced or carried out in various ways. Also, it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation.

Referring now to the drawing, the illustrated embodiment will be described in greater detail. The shelter or

sand box 10 includes a base member 12 and a canopy 14. The latter can be removed so that the base member 12 is used independent thereof, if desired.

The base member 12 is formed from suitable relatively stiff board-like material which can be scored or compressed at desired places to permit folding the material without rupturing the same. One such material is shown in the illustrated embodiment wherein the blank 16 constitutes a sandwich of board-like rigidity having a layer 18 of foamed polystyrene, on the inner and outer surfaces of which are secured respectively sheets of paperboard 20. For a more complete disclosure of this material, reference is made to United States Letters Patent No. 2,770,406.

In the illustrated embodiment, the base member 12 is formed from the one piece blank 16 which has a central portion 22 defining an equilateral polygon, which in this instance has six sides, and an outer portion adapted to form a rim 24, FIGURE 1. The outer portion is initially made up of the extensions 26 which project symmetrically from the six sides of the central portion 22. The blank 16 is permanently compressed or scored along each of the sides of the central portion, as at 28, to allow folding of the extensions 26 upwardly to an upright position as seen best in FIGURE 4. The extensions 26 are also permanently compressed or scored at spaced parallel bands, as at 30 and 32, to allow folding of the extensions 26 in the opposite direction from that at the folded edges 28. Each of the extensions 26 also has a tongue 34 projecting from its terminal end, and a slot 36 is cut in the extension 26 adjacent the side of the central portion 26 into which the tongue 34 can be inserted when erecting the base member 12. Thus, the rim 24 is formed merely by folding the extensions 26 in the manner described and inserting the tongues 34 into the slots 36.

When folded in this manner the blank 16 will form a bowl-like shape with vertical inner side walls whose edges abut one another to provide a structure for holding sand, or the like, in which children may play. The outer edges of the rim portion 24 also abut one another, as can be seen at 38. This is accomplished by cutting the blank 16 so that the edges of the extensions 26 diverge, as seen at 40, and then converge, as seen at 42, to the normal width. The diverging at 40 is sufficient to account for the additional material required to fill the space that otherwise would exist at 38 if the extensions were straight line projections of the inner side walls of the extensions 26.

The erected base member 12 may have its open edges sealed with any suitable adhesive tape. Also, if desired, the base member can be folded across its axis, for example, to allow folding the same into a smaller package for storage or handling purposes.

The canopy 14 may be mounted directly on the base member 12, and for this purpose, the base member 12 has a plurality of holes 44 extending through the upper periphery of the rim 24. The canopy 14 includes a plurality of poles 46, corresponding in number to the sides of the central portion 22, which extend through the holes 44, as shown in FIGURES 1 and 4. Each pole 46 may be pressed downwardly into the lower folded portion of its associated extension 26 so as to form a socket 48. However, this is not essential for holding the canopy 14, as will be explained.

Adjacent the upper end of each of the poles 46 is formed a socket 50 opening radially inwardly with respect to the rim 24 or central portion 22, and extending between diametrically opposite poles 46 are ribs 52. The latter are of such length that they must be bowed upwardly so that their ends will fit into the pockets 50 of their associated

diametrically opposite poles, and when in this position each rib 52 will exert radially outward thrust against the poles 46 to which it is connected. This will have the effect of urging the lower end of each pole 46 radially inwardly toward its associated side portion 26. The canopy 14 will therefore be held in an upright position, because forces tending to tip the canopy 14 will always be opposed by components of force, opposite in direction, from at least three of the six poles 46, which opposing forces will act against side wall portions 26.

Positioned over the bowed ribs 52 is a fabric cover 54 which has small holes 56, corresponding in number to the poles 46. Each hole 56 is fitted over a small pin or projection 58 which extends from the upper end of each pole 46. Thus, when the ribs 52 urge the upper ends of poles 46 radially outwardly they also tend to draw the cover 54 taut over the ribs 52. The cover 54 also has a decorative skirt 60 which encloses the upper ends of the poles 46, and functions also to tend to draw the cover taut when the poles 46 are urged radially outwardly.

The fabric from which the cover 54 is made may be woven material such as canvas, or it may be suitable non-woven material such as one having a cross-laid web of threads held together by an adhesive and in which a cellulose coating forms the opposite surfaces of the fabric.

Having thus described my invention, I claim:

1. A sand box for children comprising a base member formed by folding a blank constituting a sandwich of board-like rigidity and having a layer of foamed plastic material which is compressible without rupture and on the inner and outer surfaces of which are secured respectively sheets of paperboard, the blank having a flat central portion defining an equilateral polygon and an outer rim portion including extensions projecting symmetrically from each of the sides of said central portion, said blank being permanently compressed around the periphery of said central portion with the extensions folded perpendicularly upwardly at such compressed edges so as to form abutting sidewalls, said extensions each having a pair of spaced compressions parallel to their associated folded edges and each extension being folded outwardly and downwardly at the compression nearest the folded edge and folded inwardly at the remaining compression, said blank having a slot adjacent each of said folded edges, and the terminal edges of said extensions having projecting tongues inserted respectively into the slots, and a canopy supported by and covering said base member.

2. A shelter comprising a base member formed by a relatively rigid blank having a flat central portion defining an equilateral polygon and a rim portion connected thereto, said rim portion being an outward extension of the sides of said central portion and being folded to form in radial cross section a triangular structure with one side of the triangular structure forming an inner side wall of the base member and with another side of the triangular structure being generally in the plane of said central portion, and a canopy supported by and covering said base member.

3. A shelter comprising a base member formed by a relatively rigid blank having a flat central portion defining an equilateral polygon and a rim portion connected thereto, said rim portion being an outward extension of the sides of said central portion and being folded to form in radial cross section a triangular structure with one side of the triangular structure forming an inner side wall of the base member and with another side of the triangular structure being generally in the plane of said central portion, said rim portion having a plurality of spaced holes along its axially upper edge, and a plurality of poles standing vertically upright through said holes and supporting on their upper ends a cover assembly, said cover assembly including a plurality of flexible ribs bowed upwardly with their ends connected respectively to diametrically opposite poles and exerting radially outward thrust thereagainst, and a fabric cover overlying said flexible ribs and operably connected to the upper ends of said poles.

4. A play structure for children comprising a base member formed by folding a blank constituting a sandwich of board-like rigidity and having a layer of foamed plastic material which is compressible without rupture and on the inner and outer surfaces of which are secured respectively sheets of paperboard, the blank having a flat central portion defining an equilateral polygon and a rim portion connected thereto, said rim portion being an outward extension of the sides of said central portion and being folded to form in radial cross section a triangular structure with one side of the triangular structure forming an inner side wall of the base member and another side of the triangular structure being generally in the plane of said central portion, said rim portion having a plurality of spaced holes along its upper edge, and a plurality of poles standing vertically upright through said holes and supporting on their upper ends a cover assembly, said cover assembly including a plurality of flexible ribs bowed upwardly with their ends connected respectively to diametrically opposite poles and exerting radially outward thrust thereagainst, and a fabric cover overlying said flexible ribs and operably connected to the upper ends of said poles.

5. A shelter comprising a base member having a relatively rigid rim-like structure formed with axially extending radially inwardly facing wall portions with holes formed in said structure adjacent the upper edges of said wall portions and on the radially outer sides thereof, a plurality of poles supported intermediate their ends in upright positions in the respective holes in said structure, said poles having adjacent their upper ends sockets all of which open in a radially inward direction with respect to said rim-like structure, a plurality of radially extending flexible ribs bowed upwardly with their ends in the sockets of diametrically opposite pairs of poles thereby exerting outward thrusts against the upper ends of said poles and thereby tending to urge the lower ends of said poles radially inwardly toward their associated wall portions, a fabric cover overlying said flexible ribs and the upper ends of said poles, and means connecting said cover and the upper ends of said poles so that when the latter are thrust radially outwardly by said ribs the cover will be drawn relatively taut over said ribs.

6. A shelter comprising a base member having a relatively rigid rim-like structure formed with axially extending radially inwardly facing wall portions with holes formed in said structure adjacent the upper edges of said wall portions and on the radially outer sides thereof, a plurality of poles supported intermediate their ends in upright positions in the respective holes in said structure, a plurality of radially extending flexible ribs bowed upwardly with their ends connected to the upper ends of said poles so as to apply radially outward thrust against the upper ends of said poles thereby tending to urge radially inwardly the lower ends of said poles toward the outer sides of said wall portions, a fabric cover overlying said flexible ribs and the upper ends of said poles, and means connecting said cover and the upper ends of said poles so that when the latter are thrust radially outwardly by said ribs the cover will be drawn relatively taut over said ribs.

7. A sand box for children comprising a base member formed by folding a blank constituting a sandwich of board-like rigidity and having a layer of foamed plastic material which is compressible without rupture and on the inner and outer surfaces of which are secured respectively sheets of paperboard, the blank having a flat central portion defining an equilateral polygon and an outer rim portion including extensions projecting symmetrically from each of the sides of said central portion, said blank being permanently compressed around the periphery of said central portion with the extensions folded perpendicularly upwardly at such compressed edges so as to form

abutting sidewalls, said extensions each having a pair of spaced compressions parallel to their associated folded edges and each extension being folded outwardly and downwardly at the compression nearest the folded edge and folded inwardly at the remaining compression, said blank having a slot adjacent each of said folded edges, and the terminal edges of said extensions having projecting tongues inserted respectively into the slots, said blank also having a plurality of holes at the upper edges of said side walls, a plurality of poles supported in upright positions in said holes, said poles having adjacent their upper ends sockets all of which open in a radially inward direction relative to said central portion, a plurality of radially extending flexible ribs bowed upwardly with their ends in the sockets of diametrically opposite pins of poles thereby exerting outward thrusts against the upper ends of said poles, a fabric cover overlying said flexible ribs and the upper ends of said poles, and means connecting said cover and the upper ends of said poles so that when the latter are thrust radially outwardly by said ribs the cover will be drawn relatively taut over said ribs.

8. A sand box as claimed in claim 7 wherein said fabric cover comprises a non-woven, bonded fabric having a cross-laid web of threads held together by an adhesive and a cellulose coating forms the opposite surfaces of the fabric.

9. In a sand box for children, a base member formed by folding a blank constituting a sandwich of board-like

rigidity and having a layer of foamed plastic material which is compressible without rupture and on the inner and outer surfaces of which are secured respectively sheets of paperboard, the blank having a flat central portion defining an equilatreal polygon and an outer rim portion including extensions projecting symmetrically from each of the sides of said central portion, said blank being permanently compressed around the periphery of said central portion with the extensions folded perpendicularly upwardly at such compressed edges so as to form abutting sidewalls, said extensions each having a pair of spaced compressions parallel to their associated folded edges and each extension being folded outwardly and downwardly at the compression nearest the folded edge and folded inwardly at the remaining compression, said blank having a slot adjacent each of said folded edges, and the terminal edges of said extensions having projecting tongues inserted respectively into the slots.

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