A soft, foam panel in a trapezoidal prism shape, multiple units of which can form an adaptable and expandable security barrier for children or pets. The foam panels come in a variety of lengths, heights, and end configurations, and are designed to be stable as independent units laid out next to each other with adequate stability to prevent a child from pushing them over, but, optionally, capable of being made additionally stable by being attached to one another at their ends by hook and loop or similar means of attachment and, optionally, weighted at the bottom for additional stability. By adding or taking away panels, and changing their angle of attachment, an adult can effectively adapt the invention to barricade off sections of rooms with a variety of shapes and sizes. For sanitary purposes, the foam panels are covered with a cover which can be easily removed for washing.
EXPANDABLE ROOM BARRIER FOR CHILDREN AND PETS, AND SYSTEM OF USE

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] None.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] This invention was not federally sponsored.

BACKGROUND OF THE INVENTION

[0003] This invention is directed toward a versatile and expandable child security device. The device is based upon soft, foam panels in a trapezoidal prism shape, multiple units of which can form an adaptable and expandable security barrier for children or pets. The foam panels come in a variety of lengths, heights, and end configurations, and are designed to be stable as independent units laid out next to each other with adequate stability to prevent a child from pushing them over, but, optionally, capable of being made additionally stable by being attached to another at their ends by hook and loop or similar means of attachment and, optionally, weighted at the bottom for additional stability. By adding or taking away panels, and changing their angle of attachment, an adult can effectively adapt the invention to barricade off sections of rooms with a variety of shapes and sizes. For sanitary purposes, the foam panels are covered with a cover which can be easily removed for washing.

[0004] The need to confine children to a certain area undoubtedly began in prehistoric times, when it was necessary to keep children from wandering into dangerous areas (such as fire pits) or leaving the relative safety of the group’s home and traveling into the surrounding territory, which in those days abounded with many of the same large predators and hazardous conditions that cause parents today to panic when they lose sight of their children outdoors. The first recorded child confinement device is the playpen, which consists of some sort of frame (adjustable or rigid), usually square or rectangular in shape, with edges high enough to keep children confined but short enough to allow an adult to step over the edges of the playpen. Some typical examples of playpens are found in U.S. Pat. No. 4,208,037 to Le Gai, U.S. Pat. No. 4,538,309 to Gunter, and U.S. Pat. No. 5,367,725 to Tsi. The adult places the child in the playpen, then steps into the playpen to remove the child at a later time. Since the adult has to step into and out of the playpen, the playpen’s sides, by necessity, have to be short enough to allow an adult to easily and safely access the interior. Some playpens have doors which allow an adult to enter to deposit, withdraw, or tend to a child in the playpen. Even so, playpens have inherent limitations in that they are not adjustable to a wide variety of different room shapes and can only be used to confine a child to that particular location.

[0005] The prior has several examples of attempts to resolve this problem. For example, U.S. Design Pat. No. Des. 341,207 to Freese, et. al., Des. No. 335,261 to Abrams, et. al., U.S. Pat. No. 6,161,334 to Goodin, U.S. Pat. No. 6,536,163 to Monahan et. al., U.S. Pat. No. 6,536,502 to Britto, et. al., UK Patent Application GB 2041054 to Hermetsche, et. al. WIPO PCT Patent Application WO 02/099238 A1 to Hicks, and U.S. Pat. No. 5,457,914 to Johnson describe adjustable security gates usually comprised of two or more sliding panels or a hinged, swinging, lockable gate, which can be used to seal off a doorway or stairway of varying widths. These adjustable gates are generally manufactured with a rigid frame in the shape of a dowel, tubing or rod, made of metal or wood which holds a panel, usually made of sheet plastic, plastic or metal mesh, grids, bars, or wood, where a planar element spans from the first frame to the second such that one can be adjustably moved along the track in which the first sits. The safety gate can be secured to the doorway or stairway edges to close off that entrance to a child, by means and mechanisms which are usable by an adult but not by a child to attach, set up, and remove the gate. While these inventions offer a means by which a user can secure a door against unwanted movement by a child, they do not allow a user to cordon off a section of a room as does the present invention.

[0006] U.S Patent Application No. 2004/0128932 A1 to Estaute teaches a foam panel system which is secured to studs and other conventional framing materials in which the foam panels can be manufactured with a surface texture which resembles brick, stone, wood, and other surface textures and appearances. This invention does not provide for its use as a child security system.

[0007] U.S Patent Application No. 2005/005363 A1 to Giori also deals with use of foam blocks, in this case enclosing a foam core in a vacuum sealed cover chamber. Again, while the invention uses foam blocks it does not do so in a manner which allows for restriction a child’s movements.

[0008] An invention which does create an expandable series of panels can be found in U.S. Pat. No. 4,722,146 to Kemeny. This patent teaches a portable display, such as one might find at a trade show, where a series of panels are connected at the edges have foam cores and outer surfaces which can be textured, printed, or upon which can be affixed trade show displays. U.S. Pat. No. 5,007,473 also deals with thin panels, attached at their edges, which, when made into a partition of more than one panel, can remain upright merely by adjusting the panels such that at least one panel is not directly in line with the others. While these inventions do provide devices which can be used such that multiple units of the invention are attached in a series, neither invention relates to childproofing a room, the display panels are not designed to remain upright upon a child’s pushing, and the structural integrity of the invention rests on the panels remaining a angles to each other—where the invention lined up with each panel directly in line with the last it would fall over absent a means of attachment to a nearby wall or other support structure.

[0009] U.S. Pat. No. 5,007,473 also deals with thin panels, attached at their edges, which, when made into a partition of more than one panel, can remain upright merely by adjusting the panels such that at least one panel is not directly in line with the others. As with the ‘145 patent, the invention does not relate to childproofing a room, the display panels are not designed to remain upright upon a child’s pushing, and the structural integrity of the invention rests on the panels remaining a angles to each other—where the invention lined up with each panel directly in line with the last it would fall over absent a means of attachment to a nearby wall or other support structure.
An actual barricade system design for children is found in U.S. Pat. No. 5,626,330 to Young. This patent teaches a temporary barricade system which a user can erect around a delicate and/or valuable object when a young child is riding a wheeled vehicle in the house. While this patent does describe a barricade system, it is not designed to confine a child, but rather to protect an object from a bicycle or other wheeled toy ridden by a child.

Another barricade system for children is found in U.S. Pat. No. 6,123,321 to Miller. This patent describes a modular fence which has a repeated series of panels, consisting of a rigid frame supporting flexible panels, where the panels are connected at their edges, thereby allowing for the creation of an adjustable and flexible barrier which can be used to confine children or pets, or cordon off an area. This invention, however, relies again upon at least two panels being set up out of alignment with each other, thereby creating whatever stability the system has, other than some accessory support devices or braces which can be attached at key point. The invention also does not provide for a soft cushioned panel against which a child can fall safely.

Thus there has existed a long-felt need for a device to restrain children and pets to a specific region of the house, patio, or yard, where the device can be adapted to a wide range of different shaped rooms and regions. It is desirable too that the device is stable, such that a child cannot push it over, and should allow a child to practice standing and walking by leaning against the barricade. Finally, the barricade should be made with a soft surface, such that the child is not injured should he or she fall onto the barrier, and covered with an easily removed cover which can be exchanged for another cover, perhaps of a different color or with a different cartoon character emblazoned on it, and washed such that it remains sanitary for the child.

The current invention provides just such a solution by having a versatile and expandable child security device which comprises a soft, foam panel in a trapezoidal prism shape, multiple units of which can form an adaptable and expandable security barrier for children or pets. The foam panels come in a variety of lengths, heights, and end configurations, and are designed to be stable as independent units laid out next to each other with adequate stability to prevent a child from pushing them over, but, optionally, capable of being made additionally stable by being attached to one another at their ends by hooks and loops or similar means of attachment and, optionally, weighted at the bottom for additional stability. By adding or taking away panels, and changing their angle of attachment, an adult can effectively adapt the invention to barricade off sections of rooms with a variety of shapes and sizes. For sanitary purposes, the foam panels are covered with a cover which can be easily removed for washing.

SUMMARY OF THE INVENTION

It is a principal object of the invention to provide a safe means of sectioning off a room or other area in a manner which is adjustable, adaptable, and safe for the child or pet being confined or excluded.

It is another object of the invention that the barrier can be made from a series of foam blocks or panels, which are, optionally, weighted at their bottom for stability, such that a child cannot push them over.
scope of the following claims, and a reasonable equivalency thereof, which claims I regard as my invention.

BRIEF DESCRIPTION OF THE FIGURES

[0029] FIG. 1 is a perspective, partial elevational view of the invention showing its cover, the optional hook and loop fastener means on its end, and the optional water tank embedded on its underside, which can be filled with water to add weight to the bottom of the invention and increase its stability.

[0030] FIG. 2 is a top, perspective view of three units of the invention attached in a semi-circular pattern such as might be used by a parent to seal off a corner of a room. This view shows how the optional top fasteners can rotate such that they can effectively maintain the desired angle from one unit to another.

[0031] FIG. 3 is a top view of three units of the invention attached in a straight line, such as might be used by a parent trying to barricade off half of a room or seal off a sliding glass doorway or even a garage door. In this arrangement, both the end fasteners and the top fasteners are effective in maintaining the desired shape of the barricade system.

[0032] FIG. 4 is a close-up, side view of the top fasteners in action, showing how the rotatable hook section can be pressed down across the immobile loop section to secure the two units together.

DETAILED DESCRIPTION OF THE FIGURES

[0033] FIG. 1 is a perspective, partial elevational view of the invention showing its optional cover, the hook and loop fastener means on its end, and the optional water tank embedded on its underside, which can be filled with water to add weight to the bottom of the invention and increase its stability. The invention consists of the basic unit of a foam block with various alterations and additions to it, and which, when used with one or more additional units, can be made into a “chain” of foam blocks which, either with or without, as shown in FIG. 1. Each unit has a top (1), two ends (2), two sides (3), and a bottom (not shown in this figure). The ends are shaped as trapezoids, such that the unit has a trapezoidal prism shape, where the bottom of the end is wider than the top of the end, giving the unit an inherent stability. Over the unit is an optional cover (4), which is made from cloth, canvas, plastic, or another material that is easily sewn or otherwise fitted around the unit, and is easily removed for cleaning and then reattached. On the ends (2) of the unit, attached to the cover (4) by sewing or other similar means of attachment are, optionally, some strips of fastener material (6), in particular, hook and loop. Since one of the main goals of the invention is to provide an adjustable and adaptable means of barricading off a portion of a room or other area, one end of the unit would have hook and the other end loop, such that a series of units could be connected end to end. Optionally, there can be a water container (5) embedded into the foam at the bottom of the unit, or attached to the underside of the unit. This water container can be filled with water through a spigot (7) protruding from the unit to provide added stability if desired.

[0034] Since the unit is designed such that a child confined or excluded by the unit cannot tip it over, the measure of stability used to describe the unit is the size of a child who cannot tip it over. The invention is designed to withstand the pushing of a 40 pound child, although it is contemplated that additional units could be made with wider or narrower bottoms to maintain stability with children of greater or lesser weights. For a unit designed to withstand the pushing of a 40 pound child, purchasers of the invention who have children larger than 40 pounds will want to use the optional fasteners which enhance the stability of the unit.

[0035] FIG. 2 is a top, perspective view of three units (20) of the invention attached in a semi-circular pattern such as might be used by a parent to seal off a corner of a room. This view shows how the optional top fasteners (21) can rotate such that they can effectively maintain the desired angle from one unit to another. Each fastener has a fixed end (22) and a free end (26), where the fixed end is attached to the cover of the unit, or in cases where the cover is not used, to the unit itself. Because it is attached in only one place, the fastener can swivel around in a direction indicated by (24). The free end (26) has hook fastener material on its underside, which can attach at various points along a strip of loop material (25), located on the unit in line next to the unit from which the fastener (21) extends. The fact that the fastener (21) can rotate allows a user to place units at angles to one another, such even though the end hook and loop (23) means of attachment illustrated in FIG. 1 on the ends of the units do not connect with the mating strips on the opposite end of the next unit, the fasteners (21) still connect one unit to another such that the units form a barrier—in this case a curving barrier—that can barricade a child inside or outside the arc formed by the units.

[0036] FIG. 3 is a top view of three units (31) of the invention attached in a straight line, such as might be used by a parent trying to barricade off half of a room or seal off a sliding glass doorway or even a garage door. In this arrangement, both the end fasteners (33) and the top fasteners (32) are effective in maintaining the desired shape of the barricade system. Here, the top fastener (32) has been pulled across the loop strip (35), such that the hooks on the underside of the free end (34) of the top fastener (32) attaches the units to one another in a line.

[0037] FIG. 4 is a close-up, side view of the top fasteners in action, showing how the rotatable hook section (45) can be pressed down across the immobile loop strip (46) to secure the two units together. The unit (40) has a top fastener (41) at one end and a loop strip (46) at the other, such that a series or chain of the units can be attached to each other at their ends to form a straight or curved chain. The top fastener (41) has a free end (43) which has hooks (45) attached to its underside. The free end can be swiveted to the right and left, as indicated by (48), and pulled up and down, as indicated by (47). To attach one unit to another, the user pulls the two units together, lifts up the free end (43) of the top fastener (41) and pulls it across to the other unit, then lays it down across the loop strip (46), upon which are a series of loops (47) which removable engage the hooks (45) on the free end (43). The top fastener (41) is attached to the unit (40) at an attachment end (42), by means of a single point of attachment (44), which is a rivet, screw, bolt, nail, or other similar means of attachment.
What I claim is:

1. A device for creating an adjustable barrier to a child or a pet, comprising:
   a foam panel made of soft, firm foam in a trapezoidal prism shape, with a thinner section at the top of the foam panel and a wider bottom portion of the foam panel, and,
   a cover for the foam panel, where the cover is easily removable, through the use of zippers, snaps, and similar means of attachment, and made out of a fabric that is easily washable such that a user can sanitize the cover at his or her convenience, and,
   where the bottom of the device is wide enough compared to its height such that a 40 pound child cannot push it over from the unit’s standing position, and,
   where the device can be put up, end to end, against other units of the device such that the series of units can create a barrier.

2. The device of claim 1, where, the foam panels are made in a variety of different lengths, thereby allowing a user further flexibility in selecting foam panels of different lengths to accomplish his or her goal of effectively creating a barrier.

3. The device of claim 1, where, the foam panels are made in a variety of different heights, thereby allowing a user further flexibility in selecting foam panels of different lengths to effectively create a barrier depending upon the desired result, e.g., confining or excluding a child of a certain height or a pet with a certain jumping ability.

4. The device of claim 1, where, the foam panels are made in a variety of different heights, and in a variety of different lengths, thereby allowing a user further flexibility in selecting foam panels of different heights and different lengths to effectively create a barrier depending upon the desired result, e.g., confining or excluding a child of a certain height or weight, or a pet with a certain jumping ability.

5. The device of claim 1, where the foam panels are made with a variety of ends cut at angles other than 90 degrees to the sides, including ends cut at 30, 45, and 60 degrees, such that a user can create a “seamless” barrier by attaching foam panels with different end configurations to create bends in the barrier without leaving “thin” portions.

6. The device of claim 1, additionally comprising: a means of attachment located at the end portions of the cover of the foam panel where, the means of attachment allows a user to connect two or more foam panels together to form a barrier.

7. The device of claim 6, where, the means of attachment comprises mated strips of hook and faster material affixed to the ends of the cover of each foam panel, such that when one foam panel is pushed against another, the hook portion from one panel connects with the loop portion of another panel.

8. The device of claim 6, where, the means of attachment comprises mated strips of hook and faster material, located on the top of the cover of each foam panel, where the fastener portion of is affixed along its entire length to the cover and the hook portion is rotably affixed at only one point, such as a rivet or bolt, such that when a user aligns a plurality of foam panels in an alignment other than a strictly linear alignment, the rotably affixed hook portion can “cross over” and attach to the loop portion affixed to the cover of the other foam panel, thereby creating a physical link between the foam panels.

9. The device of claim 6, where, the means of attachment comprises both mated strips of hook and faster material affixed to the ends of the covers of each foam panel, such that when one foam panel is pushed against another, the hook portion from one unit connects with the loop portion of another unit, and mated strips of hook and fastener material, located on the top of the cover of each foam panel, where the fastener portion of is affixed along its entire length to the cover and the hook portion is rotably affixed at only one point, such as a rivet or bolt, such that when a user aligns a plurality of foam panels in an alignment other than a strictly linear alignment, the rotably affixed hook portion can “cross over” and attach to the loop portion affixed to the cover of the other foam panel, thereby creating a physical link between the foam panels.

10. The device of claim 6, where, the means of attachment is a series of snaps where the male snap and female snaps are affixed such that the foam panels can be attached in either a linear or non-linear arrangement and maintain their structural integrity as a barrier.

11. The device of claim 1, additionally comprising a weight device located at the bottom portion of the foam panel, where, the weight device is sufficient to allow the adjustable barrier to remain upright without additional structural support members or other means of support, such that the adjustable barrier can be laid out in a linear or non-linear pattern by the user and will remain upright, and where the weight device is sufficient to allow the adjustable barrier to remain upright without additional structural support members or other means of support when a child, up to a 40 pound child puts his or her full weight against the foam, the adjustable barrier does not fall over.

12. The weight device of claim 11, where, the weight device is a piece of metal, plastic, or wood embedded in the foam panel in the bottom portion of the foam panel.

13. The weight device of claim 12, where, the weight device is encased in a protective cover of foam where the protective cover of foam has a density greater than that of the foam barrier but still sufficiently soft to cushion a fall against it from a child.

14. The weight device of claim 11, where, the weight device is a hollow container into which a user can pour water to adjustably add weight to the foam panel depending on the degree of stability the user desires, where the hollow container comprises a hollow, plastic container with a length shorter than the length of the unit, a width narrower than the unit, and a height of approximately three inches, such that the hollow container, when filled, provides a stable weight in the bottom of the unit, and a spigot with a cap, where the spigot extends from inside the unit where it attaches to the hollow container outside of the unit where a user can pour water into the spigot by removing the cap, then, when finished adding a desired amount of water to the hollow container, replacing the cap to make the hollow container watertight.

15. The device of claim 14, where, the hollow container is embedded into the foam panel at the bottom portion of the foam panel.

16. The device of claim 1, where, the cover is made in a wide variety of colors and patterns, such that a user can easily exchange covers and buy new covers when desired.

17. The cover of claim 16, where, the cover can be manufactured to display licensed cartoon characters popular with children.
18. The cover of claim 16, where, the cover can be manufactured with animals or characters attractive to children where the animals or characters are not copyrighted or trademarked, or otherwise protected by intellectual property.

19. A method of creating an adjustable barrier to confine or exclude a child or pet, comprising the steps of:

first, taking two or more units of the invention, where the unit comprises a piece of soft, firm foam in a trapezoidal prism shape, with

a thinner section at the top of the foam panel and a wider portion at the bottom of the foam panel,

a cover for the foam panel, where the cover is made out of a fabric that is easily washable such that a user can sanitize the cover at his or her convenience,

a means of attachment located at the ends of the foam panel, where, the means of attachment allows a user to connect two or more foam panels together to form a barrier, and, optionally,

a weight device attached to the bottom portion of the foam panel,

where, the weight device is sufficient to allow the adjustable barrier to remain upright without additional structural support members or other means of support, such that the adjustable barrier can be laid out in a linear or non-linear pattern by the user and will remain upright, and where the weight device is sufficient to allow the adjustable barrier to remain upright without additional structural support members or other means of support when a child, up to a 20 pound child puts his or her full weight against the foam, the adjustable barrier does not fall over,

second, attaching the two or more units to each other by the means of attachment, and,

third, arranging the series of attached units into a shape which effectively creates a barrier in the desired shape.

20. An adjustable barrier to confine or exclude a child or pet, comprising:

two or more units consisting of foam panels, where the foam panels comprise: a piece of soft, firm foam in a trapezoidal prism shape, with a thinner section at the top of the foam panel and a wider portion at the bottom of the foam panel,

a cover for the foam panel, where the cover is made out of a fabric that is easily washable such that a user can sanitize the cover at his or her convenience,

a means of attachment located at the ends of the foam panel, where, the means of attachment allows a user to connect two or more foam panels together to form a barrier, and, optionally,

a weight device attached to the bottom portion of the foam panel,

where, the weight device is sufficient to allow the adjustable barrier to remain upright without additional structural support members or other means of support, such that the adjustable barrier can be laid out in a linear or non-linear pattern by the user and will remain upright, and where the weight device is sufficient to allow the adjustable barrier to remain upright without additional structural support members or other means of support when a child, up to a 20 pound child puts his or her full weight against the foam, the adjustable barrier does not fall over,

where, two or more foam panels are attached to each other by the means of attachment, and,

where, the desired shape of the barrier is achieved by arranging the series of attached foam panels into a shape which effectively creates a barrier in the desired shape.

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