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ABSTRACT

A planar sheet or chamber is positioned adjacent to the rebounding surface of a trampoline, inflatable bounce surfaces or a pool and has distinct marks such as numbers, letters, colors, symbols, figures and the like to form visually or texturally distinct regions. The marks or regions help to direct the movement of players in skill or educational games. The games may include the alternatively jumping on selected regions in a sequence determined by the rules of play or the lessons sought to be reinforced.
Figure 2B
Figure 3
POOL OR TRAMPOLINE GAME ACCESSORY

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] The present application claims priority to provisional application having Ser. No. 60/497,371, titled “Pool or Trampoline Game Accessory,” filed Aug. 21, 2003, which is incorporated herein by reference.

BACKGROUND OF INVENTION

[0002] The present invention relates to accessories for trampoline play, which provide interactive, competitive or educational games.

[0003] Although trampolines are not generally designed or recommended to accommodate multiple players at once, such instructions are often ignored as waiting players become impatient, and wish to join in the fun of bouncing up and down. It is therefore a first object of the present invention to provide devices that enable various methods of interactive play, including competitive and educational games between the players inside the trampoline enclosure with spectators outside the jumping surface of the trampoline.

[0004] Still another objective of the invention is to provide devices and methods of modifying the rebounding characteristics of a trampoline to enable safer play.

SUMMARY OF INVENTION

[0005] In the present invention, the first object is achieved by providing a game mat/surface that overlays a trampoline rebounding surface for enabling the safe capture of water there within, in which one form of play involves splashing water on spectators while playing, encouraging the spectators to play by moving to avoid being splashed.

[0006] A second aspect of the invention is characterized in that the game mat is provided with various forms of indicia that direct players to land or rebound off different zones of the game mat, producing different consequences, which in the case of water play might including splashing themselves, other players or spectators with water. Yet in other embodiments the players receive educational feedback or play competitive games also requiring physical skill, which for example might require the player to land and bounce off different zones or areas of the rebounding surface based on the indicia associated with the game mat.

[0007] A third aspect of the invention is characterized in that the device is either filled with or retains water and thus modifies the damping characteristics of the trampoline rebounding surface, thus enabling safer play.

[0008] Yet another aspect of the invention, a game mat or device intended to be used for wet play has an anti-slip surface to prevent injury from falling, sliding or contacting other players.

[0009] The above and other objects, effects, features, and advantages of the present invention will become more apparent from the following description of the embodiments thereof taken in conjunction with the accompanying drawings.

DETAILED DESCRIPTION

[0010] FIG. 1 is an elevation of a cross-section through a trampoline illustrating the position and zones within a trampoline bed accessory according to a first embodiment of the invention.

[0011] FIG. 2A is an elevation of a cross-section through a trampoline illustrating the deformation of the trampoline rebounding bed when the game accessory of FIG. 1 is filled with water in the central zone.

[0012] FIG. 2B is a plan view of the trampoline bed accessory of FIG. 1 illustrating the water retaining zones of FIG. 2A.

[0013] FIG. 3 is an elevation of a cross-section through a trampoline illustrating the deformation of the trampoline rebounding bed in response to an alternative embodiment of the trampoline bed accessory of FIG. 4A.

[0014] FIG. 4A is an elevation of a cross-section through an alternative embodiment of a trampoline bed accessory.

[0015] FIG. 4B is an elevation of a cross-section through another alternative embodiment of the trampoline bed accessory.

[0016] FIG. 4C is an elevation of the cross-section of FIG. 4B showing further details of the water outlet nozzles.

[0017] FIG. 5A is a plan view of another embodiment of the trampoline bed accessory illustrating distinct zones corresponding to various output devices.

[0018] FIG. 5B is an elevation of a cross-section through an alternative embodiment illustrating an electronic sensor embedded in the trampoline accessory in connection with corresponding alternative output devices.

[0019] FIG. 5C is an elevation of a cross-section through an alternative embodiment wherein a player’s contact with a particular zone activates water squirting nozzles.

[0020] In accordance with a first embodiment of the invention, FIG. 1 illustrates a trampoline play system comprising a trampoline rebounding surface elevated above the ground by the trampoline support frame, where the periphery of the trampoline rebounding surface is connected to the inner circumference of a trampoline support frame by springs. The trampoline play system also preferably comprises a safety enclosure wherein the player jumping on rebounding mat is confined within the interior space defined by safety enclosure fence. Safety enclosure fence is preferably supported by a series of substantially vertical support posts via interconnected straps or brackets, illustrating schematically as component. It should be appreciated that the attachment method need not be limited to concealed or hidden connectors, as elastic cords disposed above the rebounding surface and connecting to the supports, frame or safety enclosure and can also be used to separate players or an element that partially defines the games or context.
of the trampoline system of FIG. 1. In FIG. 1 accessory 150 is a substantially planar device or sheet and is optionally secured to the trampoline rebounding mat 110, springs 130 or support frame 120 via fasteners schematically illustrated as component 151. The sheet, as well as other embodiments described below, can be attached to the trampoline rebounding surface by physical attachment, such as adhesive tape or “VELCRO” strips, or similar and related loop and hook fabric fasteners, applied to the margin of the sheet that extend to overlap the rebounding surface, adhesive or tacky pads on the underside of the flexible sheet, or elastic cords that reach to the edge of the rebounding mat for attachment to the frame, springs, on an annular spring cover, or extend under the rebounding mat to connect opposite sides of the flexible sheet. Alternatively, the flexible sheet may be secured by magnet attraction, for example by adhering strips of magnetic particle stripping to the underside of the rebounding surface intended to attract, and therefore secure, a flexible sheet that is at least partially constructed using magnetic fillers in the resin or fabricated to include similar magnetic strips, or by eyelets or the like that can be used to connect the flexible sheet to the trampoline springs, frame, spring pad, enclosure poles, etc.

Accordingly, trampoline bed accessory 150 is sufficiently durable to resist damage from repeated impacts of player jumping on the trampoline rebounding surface 110. FIGS. 2-3 illustrate alternative embodiment's invention where the trampoline bed accessory retains water for wet play. As will be further described with respect to other embodiments, the trampoline bed accessory's alternative embodiments include various forms of game mats, which may include various features and components that enable various forms of competitive, interactive or educational play. While some embodiments of the invention are particularly adapted for use on a trampoline, the environment and methods of use are not limited thereto.

FIG. 2A schematically illustrates the water retaining properties of trampoline bed accessory 200 and the corresponding deformation of trampoline rebounding mat 110 in response to the weight of the retained water. FIG. 2B is a plan view further illustrating elements of the construction of trampoline bed accessory 200 associated with, among others, the water retaining properties. The trampoline bed accessory 200 has central zone 210 that is not water permeable. The central zone 210 is surrounded by an outer zone 230. Outer zone 230 is water permeable such that the quantity of retained water 201 and the corresponding deformation of the trampoline rebounding mat 110 are appropriately limited within suitable conditions for dampening the rebounding response. The flexible sheet that forms either a trampoline accessory of game mat 200 is preferably porous for water drainage along at least some of the perimeter, and preferably non-porous for retaining water in the central region. However, in alternative embodiments, non-planar devices according to the invention may be entirely non-porous or may have porous or non-porous portions/spots in various patterns. In other embodiments, the device may be entirely porous, for example, when water retention is not intended for play or educational games.

Although the quantity of water 201 is not critical for individual wet play activities, such as splashing spectators while jumping, a controlled quantity of water provides a benefit in that it dampens the trampoline rebounding surface response. A dampened response makes the trampoline more suitable for use by players, who can enjoy jumping and splashing activities with greater safety, without need to modify or adjust the spring system. Thus, the trampoline system can be returned to normal use simply by dumping, draining or pumping out the water or removing the trampoline bed accessory/game mat. Accordingly, the mat may also include a drain hole or plug at the edge or lower surface that can be released or removed at the end of use.

When the planar embodiment of the device 150 in FIG. 1 is intended for wet play, as shown in FIG. 2A, a player may initially stand on the center of the trampoline bed accessory 200 to provide the initial deformation to the rebounding surface 110 such that water added to the central zone 210 will be retained until the accumulated weight of the water is sufficient to retain the illustrated concave shape in the absence of a player.

An alternative form of a sheet that forms a trampoline accessory 200 might also have surface regions with a concave area to retain water, inflatable regions that extend from the sheet to cushion landings or to increase visibility of target areas or landing areas. Further, in preferred embodiments the upper surface of trampoline bed accessory 200 is appropriately textured to have anti-slip properties enabling safer wet play such as under the configuration illustrated in FIGS. 2, 3, 4 or 5C.

Accordingly, the trampoline bed accessory 200 is preferably fabricated from flexible sheet(s) of material, such as materials used to form trampoline rebounding surface, (but may include alternative materials) for example fabric, non-woven fabric, PVC coated fabric and the like, wherein the open weave of the fabric is porous and a coated region or laminated film region is non-porous. Alternative coatings include plastic film or sheathing, rubber, polyurethane, silicone and the like. Further, the fabric may be elastic, being fabricated from "LYCRA" or other elastomeric fibers. In addition, 200 may be fabricated so that it is padded.

FIG. 3 illustrates an alternative embodiment of the invention wherein the trampoline bed accessory 300 includes a peripheral wall 310 for retaining water. The peripheral wall portion may substitute for or be in addition to the porous fabric region, as in some embodiments it is desirable for the game mat to extend to the edge of the rebounding surface, for either attachment thereto, or to provide a wider play area with various forms of printed indicia. The game mat can extend beyond the circumference of the trampoline frame or anywhere in between.

Alternatively, as shown in FIG. 3, accessory 300 includes a retaining wall 310 that is upright but is preferably soft, conformal or optionally filled with air or water (as further described in FIG. 4A) so that the center region can be filled with water while the trampoline rebounding surface deforms into a concave profile. The center of the game mat may also comprise a planar cavity that initially fills with and retains water while the rebounding mat 110 is undergoing deformation. Accordingly, the upper surface of the cavity is optionally submerged by providing additional water after the rebounding mat is deformed by the weight of the water in the cavity.

FIG. 4A illustrates an alternative embodiment of the trampoline bed accessory for either wet or dry play of the
as well as avoiding becoming the target of another player’s external operation of the spray nozzles.

[0034] It should be appreciated that as other aspects of the invention, more fully described below, include marking distinct regions with printed indicia, such as correspond to numbers, letters, symbols and the like, such indicia may be combined with the operative characteristics of squirt or spray nozzles, sound makers, bubble makers, visual displays, or light emitters. Alternatively, the operative features are readily revealed, and thus optionally featured, by providing a transparent upper layer and/or sub-cavity covers. Further, in accordance with other aspects of the invention, any of the water retaining trampoline accessories or game mats of FIGS. 1-4 can also include such printed indicia independent of the surface texture or porosity of the region, and may be used independent of a trampoline. It may be used on the ground, in a pool, on the bouncing surface of an inflatable structure.

[0035] FIGS. 5A and 5B illustrates further embodiments of the invention wherein regions of the game mat 501 are visually distinct to the player, as in the plan view shown in FIG. 5A, having printed indicia corresponding to numbers, letters, symbols, borders and the like. FIG. 5B illustrates a more preferred embodiment of the invention wherein an auditory or visual output is provided to players and/or spectators to indicate that the player has made contact with one or more distinct regions of the game mat during play.

[0036] Thus, in the plan view of trampoline accessory/game mat 501 in FIG. 5A regions or zones labeled 510, 511, 512, 513 and 514 are operatively connected to a visual display 540 and/or loudspeaker 550 to provide players, as well spectators, with an output in response to the player landing on the visual indicia associated with the zone. FIG. 5B is an elevation of the cross-section corresponding to reference line B-B in FIG. 5A to illustrate the juxtaposition of pressure or impact transducers 520, 521, 522 in correspondence with the location of visual indicia 513, 512 and 511 respectively. An optional amplifier or signal processor 530 receives the output from transducers 520, 521 and 522 via connecting circuit 535.

[0037] Accordingly, circuit 531 of game device mat 501, shown in plan view in optionally includes controllers along with electronic output devices, which may include a game control device for spectator or automatic control of the visual display or loudspeaker, illustrated in FIG. 5B, depending on the nature of the games or play activity. Such games may utilize either alone or in combination loudspeaker 550 or a visual display 540. The visual display may be digital or analog, and can provide the players with scores, as well as play instructions, such as instructions to land on a particular letter symbols or icons, either in response to a question, a direct instruction or command. Additionally alternative embodiments, more fully described with reference to FIG. 6 below, the visual display is coincides with the zone on the surface of the game mat. Further, the visual indicia may be varied by replacing an overlaying sheet, and thus providing the option of selecting from a variety of games appropriate for different age or skill levels, including competitive interaction between the player within the trampoline enclosure and the spectators, as well as pool and splash games not associated with a trampoline.

[0038] In yet another embodiment, the visual indicia of FIG. 5A can represent a calculator for learning math facts,
or language skills. Bouncing off a particular number symbol could generate a corresponding audio or visual output of a number or mathematical operation. Both the player inside the safety enclosure and observers can participate in interactive play or practice their multiplication tables, as well as addition, subtraction or division and word games. Spectators might call out instructions, or be required to provide the correct answer to the calculations or words selected by the jumping player.

[0039] Game mat can also have multiple patterns for playing jumping games. The patterns can also be used as place locators for marking indicia or applying detachable indicia used to play games that utilize numbers, words, cards and symbols, etc. For example, in one embodiment the pattern may consist of an array of hook and loop fabric fasteners intended to receive a variety of discrete separate marks having a corresponding fastening component disposed on their underside. The patterned array thus permits the removal and secure replacement of separate marks either as part of, or to correspond with the play activity.

[0040] While the visual display is optionally deployed to provide correct answers to games, such as the aforementioned calculations, an alternative use is to tally the score of games, or alternatively provide a player with an indication of the number of bounces, elapsed time and like parameters related to athletic performance.

[0041] In additional embodiments, the planar game mat is combinable with either a shallow splash pool or more substantial pool structure independent of use with a trampoline structure. In such embodiments, the planar mat is not required to be flexible, and can be somewhat rigid, as it would be disposed at the bottom of the pool. According, the printed indicia and other features previously described with respect to recreational activities on the trampoline rebounding surface can take place in either a temporary or more permanent pool, i.e. a permanent or in ground pool as well as a temporary or splash pool and the like.

[0042] While the invention has been described in connection with a preferred embodiment, it is not intended to limit the scope of the invention to the particular form set forth, but on the contrary, it is intended to cover such alternatives, modifications, and equivalents as may be within the spirit and scope of the invention as defined by the appended claims.

1. A planar device for attachment to, above, or below a trampoline rebounding surface, the device comprising:
   a) At least one sheet having an upper and lower surface that comprises;
      i) at least three visually and/or texturally distinct marks on the upper surface used for game activities, and
      ii) a connecting system for positioning said sheet adjacent to the trampoline rebounding surface.
   2. A planar device for placement and/or attachment to, above, below, or within the water holding area of a pool, the device comprising:
      a) At least one sheet having an upper and lower surface that comprises;
      i) at least three visually and/or texturally distinct marks on at least one of the upper and lower surface for use in game activities,
      b) connecting system for positioning said sheet for use with the pool.
   3. A planar device for attachment to, above, or below an inflatable bouncing surface, the device comprising:
      a) At least one sheet having an upper and lower or an inner and outer surface that comprises;
      i) at least three visually and/or texturally distinct marks on the surface used for game activities,
      ii) a connecting system for positioning said sheet for use with the bouncing surfaces.
   4. A planar device that forms the rebounding surface of a trampoline or attaches to, above, or below a trampoline rebounding surface, the device comprising:
      a) indicia that are visually or texturally distinct for use in playing a game on the rebounding surface.
   5. A planar device according to claim 4 wherein said indicia are selected from the group consisting of numbers and letters to direct the movement of one or more players in association with the play of the game.
   6. A planar device according to claim 4 wherein said indicia are selected from the group consisting of symbols and pictures to direct the movement of one or more players in association with the play of the game.
   7. A planar device according to one of claims 5 or 6 in which the indicia aid in directing a player to contact the device at certain locations.
   8. A planar device that forms the bottom and/or sides of a pool or for placement and/or attachment to, above, below, or within the water holding area of a pool, the device comprising:
      a) At least two or more indicia that are visually or texturally distinct for use in playing a game.
   9. A planar device according to claim 8 wherein at least one of the separate marks are formed from indicia selected from the group consisting of numbers and letters.
   10. A planar device according to claim 8 wherein at least one of the distinct marks are formed from indicia selected from the group consisting symbols and pictures.
   11. A planar device that forms a portion of an inflatable bouncing surface and/or for attachment to, above, or below an inflatable bouncing surface, the device comprising:
      a) At least two or more distinct marks that are visually or texturally distinct for use in playing a game.
   12. A planar device according to claim 11 wherein at least one of the distinct marks are formed from indicia selected from the group consisting numbers and letters.
   13. A planar device according to claim 11 wherein at least one of the distinct marks are formed from indicia selected from the group consisting symbols and pictures.
   14. A planar device that attaches to, above, or below the rebounding surface of the trampoline, the device comprising at least one attachment point for affixing one or more other devices to the surface of the planar device.
   15. A planar device that forms the rebounding surface of a trampoline, the device comprising at least one attachment point on its surface and at least 3 inches within its perimeter for affixing one or more other devices to the surface of the planar device.
16. A planar device that forms a portion of a pool's surface material and/or for placement and/or attachment to, above, below, or within the water holding area of a pool, the device comprising at least one attachment point for affixing other devices to the surface of the planar device.

17. A planar device that forms a portion of an inflatable bouncing surface and/or for attachment to, above, or below an inflatable bouncing surface, the device comprising: at least one attachment point for affixing one or more other devices.

18. A planar device according to any of claim 14, 15 and 16 wherein said other devices is selected from the group consisting of distinct surfaces and toys.

19. A planar device according to any of claims 14, 15 and 16 wherein the attachment point comprises a component of a hook and loop fabric fastener.

20. The planar device according to any of claim 1, 2 or 3 wherein at least one of the distinct marks comprise indicia that are visually or texturally distinct for use in playing a game.

21. A planar device according to any of claims 1, 2 or 3 further comprising at least one impact sensing transducer or other movement sensing relaying device disposed in association with distinct marks for the operative connection to at least one output device, the output device being selected from the group consisting of a noise maker, an electronic counter, a light emitting device.

22. The planar device according to any of claims 1, 2 or 3 further comprising at least one cavity for containing at least one of a liquid or a gas.

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