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(54) **BOWLING BALL RETURN ASSEMBLY**

ANORDNUNG ZUR RÜCKFÜHRUNG EINER BOWLINGKUGEL

ENSEMBLE DE RETOUR DE BALLE DE BOWLING

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Description

Technical Field

[0001] The present disclosure relates to bowling, and in particular, mechanisms, systems, or assemblies for returning bowling balls to bowlers.

Background

[0002] Bowling ball returns are generally among the most highly visible parts of a bowling center's interior design. Existing bowling ball returns, however, traditionally have been offered only in a limited number of configurations, colors, designs, etc. Manufacturers typically standardize the manufactured design and color options for ball returns to minimize manufacturing inconsistencies, setup and inventory costs, etc. In addition, the housing and/or other components of typical bowling ball returns often are formed by injection molding techniques, with the manufacturer's signature color generally injected during the molding process or by painting the formed housing/components before assembly. As a result, if a customer wants a unique or custom color for their bowling ball return or wants to change/customize the design of the bowling ball return, the manufacturer usually must paint the housing or other components of the bowling ball return and/or pass any further costs of such customization to the customer. Such a process also generally does not allow for specific images, textures, finishes, etc. to be customizably incorporated within the housing or other components of the bowling ball return, particularly after installation of the bowling ball return.

[0003] US 2014/087891 A1 teaches that an adhesive sheet material can be placed over a ball return to correspond to mural images on a bowling lane.

[0004] Accordingly, it can be seen that a need exists for customizable bowling ball return assembly that addresses the foregoing and other related, and unrelated, issues/problems in the art.

Summary

[0005] Briefly described, the present disclosure provides a customizable bowling ball return assembly. The customizable bowling ball return assembly can include a housing or housing portion that is positioned adjacent to a retrieval area that receives bowling balls for retrieval by bowlers at a lane or lanes. The housing can include a passage or discharge defined therein that is sized, dimensioned, or configured to allow for passage of the one or more bowling balls to the retrieval area.

[0006] The bowling ball return assembly further can comprise one or more customizable, modular, or interchangeable portions of a selected size, dimension, shape, or configuration that are configured to be selectively coupled to the housing. The one or more customizable, modular, or interchangeable portions can include

a surface or face with one or more selected colors, images, depictions, graphics, themes, finishes, textures, or combinations thereof provided on the surface or face.

[0007] In some embodiments, the bowling ball return assembly can include an automated return mechanism that is operable to direct bowling balls to a retrieval area. The housing can at least partially enclose or surround the return mechanism. The return mechanism can include a plurality of belts, rotating wheels, or other drive mechanisms that move and/or guide the returned bowling balls along at least one set of guide rails towards and through a passage/throat in the housing for discharge of the balls onto the one or more supports and/or rails of the retrieval area.

[0008] In alternative constructions/variations, the bowling ball return assembly can include a surface return assembly, and the housing can include a passage with a track or path defined therethrough that allows for passage of bowling balls from a track or guide area provided along the bowling lanes through the housing and to the retrieval area.

[0009] The retrieval area can include an elongated body configured to receive and support a plurality of bowling balls, and in some embodiments, can have one or more supports and/or rails that at least partially support the returned bowling balls for retrieval by a bowler(s). Alternatively, the elongated body of the retrieval area can have a track/guide surface that receives/supports the bowling balls.

[0010] The one or more customizable, modular, and/or interchangeable sections or portions that can have various sizes, dimensions, shapes, configurations, etc. and can be selectively configurable and selectively coupled to the housing of the bowling ball return assembly. The customizable sections/portions also can include one or more colors, images, depictions, graphics, themes, finishes, textures, etc., or combinations thereof.

[0011] In some embodiments, each of the sections or portions can include one or more selected colors, graphics, textures, finishes, etc. that can be selected by a customer, for example, to correspond to a theme or otherwise match the interior design of the customer's bowling center.

[0012] The customizable sections/portions further can be formed from a high-pressure laminate material. In one example, the customizable sections/portions can include a substrate layer, e.g., formed from a plywood, a fiberboard material, etc. or other composite materials that is formed into the customizable section shape, and a design or décor layer, including a laminate sheet material, plastic material, or paper material received/applied over the substrate layer. The design layer can include one or more colors, graphics, pictures, images, textures, finishes, etc., e.g., which can be selected by a customer/user to customize the bowling ball return assembly.

[0013] The bowling ball return assembly further can include one or more connecting mechanisms, such as fasteners, adhesives, snap-fitted connections, etc., that

are configured to releasably couple the customizable sections/portions together and/or to at least part of the housing. The sections/portions of the bowling ball return assembly thus can be made to be interchangeable to enable further customization as needed or desired.

[0014] In some embodiments, one or more adhesives, such as double-sided adhesive tape or other suitable adhesives, can be applied to the customizable sections/portions and/or the housing of the bowling ball return assembly to couple the customizable sections/portions together and/or to the housing.

[0015] Additionally, or in alternative constructions, the bowling ball return assembly further can include one or more connecting members or portions that releasably couple to the customizable sections/portions together and/or to at least a portion of the housing. In one example, the connecting members can have an elongated body with one or more grooves or slots defined therein that receive at least a portion, e.g., an end portion, of the customizable sections/portions to secure the customizable portions thereto, e.g., in slidable frictional engagement.

[0016] In further additional or alternative constructions, one or more fasteners can be used to secure at least a portion of the customizable sections/portions to the connecting members and/or to the housing.

[0017] The customizable bowling ball return assembly further can include one or more light sources, LEDs, etc., arranged therealong. For example, the one or more light sources can be positioned along the connecting members to illuminate portions of the bowling ball return assembly or an area adjacent thereto. The light sources can be positioned along any suitable portion of the bowling ball return assembly, however, without departing from the scope of the present disclosure.

[0018] The housing and/or one or more of the plurality of customizable, interchangeable sections/portions also can have one or more translucent portions or areas. These translucent portions or areas can be used to provide additional visual effects. For example, such translucent portions or areas further can be illuminated by one or more light sources.

[0019] Those skilled in the art will appreciate the above stated advantages and other advantages and benefits of various additional embodiments by reading the following detailed description of the embodiments with reference to the below listed drawing figures.

Brief Description of the Drawings

[0020] The accompanying drawings, which are included to provide a further understanding of the embodiments of the present disclosure, are incorporated in and constitute a part of this specification, illustrate embodiments of the present disclosure, and together with the detailed description, serve to explain the principles of the embodiments discussed herein. No attempt is made to show structural details of this disclosure in more detail than

may be necessary for a fundamental understanding of the exemplary embodiments discussed herein and the various ways in which they may be practiced. According to common practice, the various features of the drawings discussed below are not necessarily drawn to scale. Dimensions of various features and elements in the drawings may be expanded or reduced to more clearly illustrate the embodiments of the disclosure.

Figs. 1A - 1E show perspective views of a bowling ball return assembly according to principles of the present disclosure.

Fig. 2 shows an example bowling ball return mechanism according to one example of the present disclosure.

Figs. 3A - 3B show perspective views of a housing of the bowling ball return assembly according to Figs. 1A-1C.

Figs. 4A - 4B show perspective views of a bowling ball return assembly according to additional principles of the present disclosure.

Fig. 5 shows a cross sectional view of the customizable sections/portions and the housing according to one example of the present disclosure.

Fig. 6 shows a perspective view of the assembly with a connecting member according to principles of the present disclosure.

Fig. 7A and 7B show cross-sectional views of connecting members according to principles of the disclosure.

Fig. 8 shows cross-sectional and perspective views of a connecting member according to yet another example of the present disclosure.

Figs. 9A - 9B show perspective views of example end caps for the connecting members according to principles of the present disclosure.

Fig. 10 shows a connection mechanism for attachment of the customizable sections/portions according to one example of the present disclosure.

Detailed Description

[0021] Figs. 1A-10 generally illustrate various example embodiments of a customizable bowling ball return assembly 10, 200 according to the principles of the present disclosure. It should be understood that while the customizable bowling ball return assembly 10, 200 has been illustrated in the various figures with various colors, themes or other decorative aspects, and various config-

urations with customizable sections 12, 212 thereof being illustrated with varying or different shapes, configurations, sizes, etc., such decorative depictions and sizes, configurations, designs, etc. are shown merely for illustrative purposes and should not be viewed as limiting the present customizable bowling ball return assembly. Rather, as will be understood by those skilled in the art, various sections 12, 212 of the customizable bowling ball return assembly 10, 200 can be formed and releasably connected together to form a variety of different, customized designs to meet user/customer specifications or preferences for the bowling ball return assembly, without departing from the spirit and scope of the present disclosure.

[0022] As further will be understood, the following description is provided as an enabling teaching of embodiments of this disclosure. Those skilled in the relevant art will recognize that many changes can be made to the embodiments described, while still obtaining the beneficial or desired results. It will also be apparent that some of the desired benefits of the embodiments described can be obtained by selecting some of the features of the embodiments without utilizing other features. Accordingly, those who work in the art will recognize that many modifications and adaptations to the embodiments described are possible and may even be desirable in certain circumstances. Thus, the following description is provided as illustrative of the principles of the embodiments of a customizable bowling ball return assembly and not in limitation thereof.

[0023] Figs. 1A - 1E show perspective views of a customizable bowling ball return assembly 10 according to principles of the present disclosure. As shown in Figs. 1A - 1E, the customizable bowling ball return assembly 10 generally can include a housing or housing portion 14 having a throat or discharge 16; and a bowling ball retrieval area 18 including at least one rail 20 and/or other suitable supports 48 for supporting a series of bowling balls 22 within the defined retrieval area 18. In some embodiments, as shown in Fig. 2, the bowling ball return assembly 10 can include a return mechanism 24 for returning bowling balls to the retrieval area 18. The bowling ball return assembly 10 also can include at least one control interface 26 operable to allow for control of operations at one or more bowling lanes of the bowling center 50 also can be provided, as indicated in Fig. 1C.

[0024] Fig. 2 shows an exemplary ball return mechanism 24 according to one example of the present disclosure. The return mechanism 24 can include any suitable device that is operable to return bowling balls 22 to the retrieval area 18 for retrieval by a bowler without departing from the scope of the present disclosure. For example, as generally illustrated in Fig. 2, the return mechanism 24 can be recessed into the bowling alley floor 28, with a base plate 30 supporting the bottom portion 32 of the return mechanism 24 below the floor 28 of the bowling center, and a lane plate 34 generally supporting a middle portion 36 of the return mechanism 24 on or above the

alley floor 28. Bowling balls 22 generally will enter at the bottom 32 of the return mechanism 24, which will lift the bowling balls 22 towards and through the throat/discharge 16 of the housing 14 whereupon the bowling balls 22 can be received and collected along the retrieval area 18. In one embodiment, the return mechanism 24 also can include a first set of guide rails 38 and an oppositely-oriented second set of guide rails 40 that guide the bowling ball 22 along an upward path 42 through the return mechanism 24. The return mechanism 24 further can include rotating wheels 44 or other driving mechanism(s) that can engage and move the bowling balls 22 along the path 42 defined by the guide rails 38/40. The wheels 44 can be driven by a drive motor 46, though other suitable drive mechanisms or actuators can be used, without departing from the scope of the present disclosure.

[0025] It will be recognized, however, that other types of return mechanisms and/or bowling ball lifts may be used to move the bowling balls 22 to the retrieval area 18 without departing from the scope of the present disclosure. This could include moving/returning the bowling balls to the retrieval area by elevator lifts, kinetic energy machines, vacuum lift tubes, etc. or any other suitable devices, mechanisms, etc. It further will be recognized that the operation of the drive motor or other components of the return mechanism may be in continuous operation or non-continuous operation, *i.e.*, the motor or other components of the return mechanism are only operated when a bowling ball enters the bottom of the return mechanism and is moved therethrough, such that once the bowling ball has moved through and released from the return mechanism, the drive motor or other components of the return mechanism can be shut off. Example return mechanisms are shown and described in U.S. Patent Application No. 14/684,736. The bowling ball return assembly of the present disclosure further can include a surface ball return assembly 200 as illustrated in the embodiments shown in Figs. 4A-5B (discussed below).

[0026] As also shown in Figs. 1A-1E, the bowling balls 22 exit the return mechanism 24 through the throat 16 in the housing 14. The throat 16 generally will be sized to be larger than a standard bowling ball; however, the size of the throat 16 may be varied, including being significantly larger than the size of a standard bowling ball, which may be differently defined by private bowling organizations or leagues. For example, the Professional Bowlers Association in United States indicates that the standard size of a bowling ball has a circumference of no more than 27 inches and a weight in the range of 10 to 16 pounds. It will be recognized, however, that other organizations, leagues, etc. may establish other standard bowling ball sizes. The throat 16 further can be dimensioned, sized, or otherwise configured to accommodate duckpin, fire-pin, candlepin, etc., or other suitable bowling balls, without departing from the scope of the present disclosure.

[0027] Figs. 1A-1E additionally show that the retrieval area 18 generally includes a rail 20 and at least one center

support 48 that at least partially defines a track or racking area 50 that can receive and retain a series of bowling balls 22 after they have been returned by the return mechanism 24 for retrieval by a bowler. The rail 20 can define a substantially arcuate, U-shaped, or otherwise shaped member having end portions 20A and 20B that are coupled to the housing 14 and/or customizable sections/portions 12. While the rail 20 is shown as generally U-shaped, the rail 20 can include any suitable shape and/or configuration, without departing from the scope of the present disclosure.

[0028] At least a portion of the rail 20 further can be connected to the center support 48 of the retrieval area, on which the bowling balls are received. In addition, at least one post, column or other suitable support 52 can be provided to at least partially support the center support 48, and the rail 20 coupled thereto above the alley floor 28, as indicated in Figs. 1A-1D. The post 52 can be coupled to a lower surface 48A of the center support 48, and to the floor 28 of the bowling center, e.g., by one or more fasteners or other suitable fixing or attachment mechanisms.

[0029] Figs. 3A, 3B show example housings 14 for the customizable bowling ball return assembly 10. As shown in Figs. 3A, 3B, the housing 14 can have a body 60 that can be engaged with the plate 34 and/or the bowling center floor 28. The housing body 60 can have a front 62, rear 64, side 66 and 68, top 70, and/or a bottom 72 parts that together at least partially surround and protect the internal components of the return mechanism 24 from damage, or from being accessed by bowlers. The configuration of the housing body 60 also can be structured to restrict access internally thereto, to try to minimize physical injuries to bowlers, for example, bowlers that intentionally or unintentionally reach into the moving components of the return mechanism. In some embodiments, the housing 14 can include front and rear portions or plates with at least one of the customizable portion/sections 12 provided therebetween.

[0030] Figs. 4A and 4B show a customizable bowling ball assembly 200 according to alternative/additional principles of the present disclosure. The bowling ball return assembly 200 is constructed/configured as a surface ball return assembly. As shown in Figs. 4A and 4B, the bowling ball assembly 200 generally includes a housing 214 with a body 260 that rests on or otherwise engages the bowling center floor 28. The housing 214 further has a passage or opening 202 defined therethrough that allows for the passage of bowling balls 22 to a retrieval area 218.

[0031] As shown in the embodiments illustrated in Figs. 4A and 4B, the bowling ball return assembly 200 has a track or path 204 that extends/guides bowling balls 22 through /along the housing 214 (e.g., through the passage/opening 202) and to the retrieval area 218. The track or path 204 can have a first portion/area 206 having a ramped or sloped shape/construction/configuration to guide the bowling balls up towards and through the hous-

ing 212, and a second portion/area 208 with a generally straight shape/construction/configuration that guides the bowling balls 22 through the housing 214 (e.g., through passage 202) and then the retrieval area 218. The track/path 204 can have one or more guide surfaces 204A with a curved or arcuate shape that is generally complementary to the outer surface of the bowling balls 22 and further is configured to engage/contact the bowling balls 22 as they move therealong.

[0032] The track/path 204 further can include guides, rails or other protruding/extending portions 204B provided therealong. The guides 204B are configured to contact/engage the bowling balls 22 as they move along the track 204, e.g., to substantially reduce, prevent, or inhibit the bowling balls 22 from being displaced/dislodged from, such as by bouncing out of, etc. the track as they move therealong. The track 204 can be in communication with a similarly constructed track 250 that extends/travels along the bowling lane(s). The track 250 can have a slope or grade variant that causes the balls to move therealong, e.g., by force/acceleration of gravity, towards the bowling ball assembly 200.

[0033] In one example, bowling balls 22 that are rolled down the lane (e.g., to strike pins, in the gutter, etc.) can be loaded onto the track 250 by one or more lifting mechanisms (e.g., including a lift(s), rotating wheel(s), etc.) so that the balls then will travel down the track 250 towards the bowling ball return assembly 200 on to track 204 to be directed through the housing 214 and onto the retrieval area 218. The bowling ball return assembly 200, track 204, track 250, etc. can generally be sized, dimensioned, or configured for return of bowling balls of any size, type, etc., such as ten-pin balls, duckpin balls, five-pin balls, candlepin balls, etc.

[0034] Fig. 4A further shows that the housing 214 can have an upper portion 252 that covers/extends over at least a portion of the track 204 (e.g., at least part of the second portion/area 208). The upper portion 252 can at least partially define an opening/discharge 254 that allows for passage of the bowling balls 22 onto the retrieval area 218. The upper portion 252 can be omitted, however, as shown in Fig. 4A, and the housing 214 can have an opening or aperture 256 or otherwise can be open along an upper or top portion thereof. As a result, the second portion 208 of the track 204 and bowling balls 22 moving therealong are generally visible to the bowlers/customers at the lane.

[0035] As additionally shown in Figs. 4A and 4B, the retrieval area 218 can have an elongated body, rail, support, etc. 258 with a track 262 defined therealong to support/hold the bowling balls 22, e.g., until they are retrieved by bowlers at the lane. The track 262 is in communication with track 204 for receiving the bowling balls 22 therefrom. The elongated body 258 can have a stop portion 264 at an end 250A thereof that is configured to engage/stop the bowling balls along the track 262 for holding in the retrieval area 218. The retrieval area 218 further can include a post, support, etc. 266 that supports the

elongated body 258 on the floor 28.

[0036] Figs. 1A-1E, 3A-3B and 4A-4B further show that the housing 14, 214 can include one or more customizable, interchangeable sections or portions 12, 212 that can be selectively coupled to and/or can form or define the various parts of the housing body 60, 260 (e.g., between rear and forward portions of the housing body 60). The customizable, interchangeable sections or portions 12, 212 generally will include at least one surface or face 80, 280 with one or more colors, designs, graphics, textures, etc., for example, that can be selected by a user. Table 1 provides example colors or designs for the at least one surface or face 80, 280. The customizable, interchangeable sections or portions 12, 212 further can be readily attached to and detached from the housing body 60, 260 to allow the housing body 60, 260 to be customized, for example, to match one or more themes, designs, etc. of the bowling center.

TABLE 1

Color Name	SKU
Evo Shell	537906
Shantung Amber	537540
Weathered Shingle Grey	537923
Horizon Mist	537916
Baha Oasis	537981
Cerused Graphite	537798
Warehouse Painted Plank	538022
Warehouse Worn Plank	538119
Horizon Cloud	537917
Evo Sol	537907
Baja Basin	537992
Shantung Oyster	537564
Shantung Gray	537541
Shantung Charcoal	537562
Michelangelo Graphite	537909
Michelangelo Chalk	537908
Shantung Pearl	537563
Providence Alabaster	537437
Providence Taupe	537439
Providence Slate	537453
Bodega Old Grey Plank	538434
Bodega Old Light Plank	538345
Providence Sable	537438
Mercury Noir	538438
Mercury Frost	538224

(continued)

Color Name	SKU
Mercury Cinder	538221
Providence Natural	537436
Providence Khaki	537454
Weathered Boardwalk	537924
Lenox Coco	537997
Lenox Rose Gold	538000
Lenox Smoke	538001
Lenox Wax	537998
Lenox Ash	537999
Tate Maple Light	538009
Oxford Slate Black	538282
Oxford Pearl	538292
Oxford Copper	538296
Oxford Brass	538298
Oxford Silver	538294
Oxford Mellow White	538284
Oxford Dark Iron	538286
Oxford Casual Taupe	538288
Lamp Post	527410
Market Oak Whitewashed	532473
Market Oak Gray	532472
Mackinac	530887
Constantia Mineral	536349
Constantia Graphite	536348
Constantia Earthen	536347
Craft Hickory Grey	536485
Stratus White	534136
Corten Metal	534274
Strada Sand	535351
Concrete Urban Grey	536288
Steel Diecast	527657
Concrete	527659
Tahoe Meadow	535362
Clove	508732
Studio White Dust	508642
City Lights	530146
Street Sign	527422
Concrete Stadium Gray	535872

(continued)

Color Name	SKU
Solara Oak	508667
Concrete Modern Ivory	536289
Shimmer	508959
Concrete Mixt Grey	535561
Shark Gray	509024
Flat Iron	527437
Shaker Cherry	521423
Fashion Grey	529010
Snowfall	535531
Venus Silver	508684
Global Oak Brown	536484
Valencia Granite Tuxedo	533850
Fusion Maple	508737
Smokehouse Oak	532474
Valencia Granite Evening	533876
Freedom Red	508772
Slate Grey	529346
Turino Fig	532385
Fantastico Sable	536882
Valencia Granite Champagne	533877
Tin Ceiling	527435
Ebony Starlight	508697
Turino Truffle	532386
Arturo Candlelight	534350
Crossfire Java	508746
Turino Porcini	532519
Antone Cerused Gray	534485
Craft Hickory Natural	536487
Avante Latte	534672
Fantastico Gilde	536871
Avante Kaffe	534673
Fantastico Blanco	536870
Auburn Pear	508648
Etched Medallion	526921
Cast-in-Bronze	530142
Arturo Moonlight	534351
Antone Cerused Carmel	534484
Tango Silk	536284

(continued)

Color Name	SKU
Amarelo Bronze	531922
Turino Espresso	532387
American Natural	508628
Caledonia Truffle	522147
Oxidized Pewter	534241
Platino Granite Tanin	533908
Cashmere	509018
Carrara	534372
Boothbay Pewter	536940
Boothbay Penny	536939
Bellini Platinum	536345
Matte Luxe Linen	537142
Matte Luxe Indigo	537340
Platino Granite Gray	533910
Matte Luxe Malachite	537339
Matte Luxe Folkstone	537349
Matte Luxe Charcoal	537348
Matte Luxe Caramel	537342
Obsidian Oak	512380
Matte Luxe Fade	537343
Matte Luxe Dove	537341
Matte Steele	527952
Romania Stone	529675
Matte Malachite	534460
Matte Succulent	534108
Saloma Alto	536632
Rift Oak Gray	534133
Matte Luxe Slate	537351
Plywood	533662
Matte Luxe Sage	537338
Matte Luxe Viridian	536731
Matte Luxe Teal	536743
Matte Luxe Bordeaux	536742
Indian Vyara Nobel	534655
Pompeii Marble Gray	533949
Laguna Pebble	508821
Jazz Silk	536285
Imperial Smoke	526928

(continued)

Color Name	SKU
Grande Walnut Grey	536991
Global Oak Natural	536483
Imperial Gold	526926
Tahoe Timber	535360
Almond Cherry	508837
Turino Almond	532384
Tunisia Stone	529661
Amarelo Silver	531923
Amarelo Gold	531924
Scandia Stone	529673
Palos Mahogany	512382
Calacutta Warm	536736
OMNOVA Frosty White	509997
Boothbay Sand	536938
Carbon Fibers Silver	508792
Bellini Pewter	536342
Bellini Bronze	536341
Avante Silver	537002
Blush Gold	536565
Platino Granite Sand	533900
Matte Luxe Gauntlet	537344
Matte Luxe Nautical	536388
Matte Luxe Malt	537350
OMNOVA Designer White	509996
Moderne Gold	536564
Metro Fresco	534522
Matte White	528683
Matte Luxe Cadet	537372
Matte Luxe Fashion	537115
Monterey Topaz	536631
Monterey Crystal	536630
River Cherry	508829
Matte Sage	534106
Rift Oak Natural	534135
Matte Sulfur	527932
Sandstone Natural	533914
Saloma Cirrus	536633
Matte Stone	527956

(continued)

Color Name	SKU
Matte Luxe White	536744
Pompeii Marble Espresso	533948
Pompeii Marble Creme	533947
Matte Luxe Shadow	537156
Rift Oak Brown	534134
Matte Luxe Succulent	537329
Red Oak	508749
Imperium Moonrise	534654
Imperium Highnoon	534696
Kings Pine Light	534938
Grande Walnut Natural	535270
Imperial Brown	526930
White 949	529621
Hayward Cherry	508626
Walnut Bella	521499
Matte Fade	534315
Matte Dove	534316
Vintage Marquee	527433
Fibers Concrete	508680
Matte Luxe Porcelain	537844
Matte Cadet	534103
Matte Luxe Black	536745
Matte Khaki	527958
Matte Indigo	534384
Matte Black	527960
Linea Blanca	534864
LeBelle Silk	536287
Pavement	53263
Stop	12232
Go-Go	32245
Goal Post	62514
Mascot	45647
Cheerleader	22249
Wedding Chapel	12235
3AM	42652
Wildcard	22252
The Chairman	42653
Appletini	32249

(continued)

Color Name	SKU
Railing	53235
Ticking	72946
Corduroy	72940
Linen	62518
Flax	72939
Seersucker	62515
Julep	32247
Sugarpuff	12236
Old Silver	42649
Shade	53234
Parasol	22250
Blue Bonnet	42656
Teacup	32242
Veranda	53262
Smoked	42651
Bayou	53260
Sponge Cake	12237
Cotton	62509
Porch	53233
Security	42654
Wicket	72938
Blotter	72959
Iron Safe	53216
Old Money	32248
Wax Seal	42655
Bank Note	22254
Cash Out	72944
Fraise	42648
Crema	32246
Downtown	12240
Emerald City	72937
After Dark	22253
Mostaza	32243
Ayers	32250
Ocean Requiem	42670
Riva	22257
Bolt	12238
Double York	72942

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Color Name	SKU
Current	72945
Path	62517
Brunt Toast	72943
Eiderdown	62516
Runway	72943
Cumulus	62516
Napoleon	42658
Cambridge	12234
Academy	32244
Heather	42650
Polo	32251
The Cape	72941
First Mate	42657
Oil Skin	72936
Black Watch	53259
Black Pearl	82542
Maudlin Pearl	82566
Zink	82539
Titanium	82543
Platinum	82544
Chrome	82546
Frosted Glass	82541
Tissue	82545
Chiffon	82619
Lace	82719
Doilie	82617
Vapour White	82620
Coppertex	82209
Case Brown	82717
Midas	82208
Sharpe	82308
Almond Gold	82714
Onyx	82715
Pearly	82713
Night Sky	82413
Reflection	82401
Sky Blue	82414
Mist	82415

(continued)

Color Name	SKU
Ritz	82411
Plush	82412
Pinot	82111
Shale	82540
Razzel	82112
Major	82728
Minor	82726
Footprint	82576
Shadow	82577
Moonstone	82421
Comets	82315
Galaxy	82478
Mars	82117
Half Tea	73012
Teacup	73015
Double Tea	73010
Woolblend	73011
Chino	73013
Cargo	73014
Poplin	53369
Gray Flannel	53370
Felt Gray	45711
Chess Partner	62537
Check Mate	53373
Vintage Leather	22268
Velvet	32264
Merlot	12256
Royal	42712
Eyecandy	A0019
New Sails	F0006
Transition	E0015
Fresh	C0002
Longbay	D0008
First Call	E0016
Achromatic	E0014
Mystic	D0009
Spinnaker	A0018
Transformer	53429

(continued)

Color Name	SKU
Edge of Dreams	42732
Borrowed Light	53426
Voltage	53427
Time Warp	62562
Avatar	53428
Elevate	42731
Milky Way	62560
Silver Lining	62561
Slipper Satin	62563
All White	62564
Deep Space	42730
Sun Coral	82217
Cream	82721
Veruca	82420
Orange Peel	82216
Arsenic	82311
Transition	82312
Pale Green	82314
Pinke	82114
Face Value	82418
Arctic Blue	82419
Yello	82213
Steel Green	82310
Ohrange	82212
Red It	82113
Element	82309
Ribbon Blue	82416
Metabraun	82719
Billet	82551
Mita	82210
Coppertech	82211
Light Gold	82214
Broken Metal	82559
Frost Blue	82417
Fresno	82215
Coniferus	82313
Bobtail	82722
Chiffon Lite	82622

(continued)

Color Name	SKU
New Lace	82723
Silver Down	82556
Frost	82560
Metal	82558
Grate Gray	82557
Silver	82507
Copper	82103
Bronze	82704
Pearl	82606
Ductile Gold	82202
Strawberry Pop	82108
Lemon Star	82206
Shimmering Forest	82305
Olympic Cast	82406
Royal Grab	87407
Tundra Birch	--
Manitoba Maple	--
Fusion X	--
Ellmau Beech	--
Riga Birch	--
Honey Maple	--
Red Alder	--
Pearwood	--
Rustic Cherry	--
Summerflame	--
Shaker Cherry	--
Chocolate Pear	--

[0037] Figs. 3A, 3B, 4A and 4B further show that the one or more customizable, interchangeable sections or portions 12, 212 can be sized, shaped, or otherwise configured to make up, conform, or be complementary to and at least partially cover or be apart of the exterior surface 60A, 260A of the housing body 60, 260. For example, as generally shown in Figs. 3A and 3B, the customizable, interchangeable sections/portions 12 can include at least one top section/portion 82 that is complementary to the top part 70 and at least one of the side parts 66/68 of the housing body 60. Figs. 3A-3B further show such a top section or portion 82 can be generally U-shaped or have a generally saddle-like shape, with an upper part 84 that at least partially covers an exterior

surface 70A of the top part 70 of the housing body 60, and a pair of opposing side parts 86/88 that are generally perpendicular or otherwise transverse to the upper part 84 and at least partially cover the exterior surfaces 66A and 68A of the side parts 66/68 of the housing body 60. The customizable, interchangeable sections or portions 12 additionally can include one or more sections or portions 90 that have a generally rectangular or other shape, and which are configured to cover at least some of the exterior surface(s) 66A/66B of side portions 66/68, for example, at, near, or substantially adjacent to a bottom end 66B/68B thereof.

[0038] Also, as shown in Fig. 1E, the one or more customizable portions 12 can include a single, unitary section/portion 13 sized, shaped, or otherwise configured to conform or be complementary to and at least partially cover the exterior surface 60A of the housing body 60. In one embodiment, the unitary section/portion 13 can be generally U-shaped or have a generally saddle-like shape, with an upper portion or section 85 that extends along and substantially covers an exterior surface 70A of the top part 70 of the housing body 60, and a pair of opposing side parts 87/89 extending from the upper portion 85 generally perpendicular or otherwise transverse thereto and substantially covering the exterior surfaces 66A and 68A of the side parts 66/68 of the housing body 60. In additional, or alternative constructions, the unitary section/portion 13 can include additional customizable portions 12 attached thereto (e.g., disposed on an outer surface thereof) to provide further customization opportunities.

[0039] In addition, as shown in Figs. 4A-4B, the customizable, interchangeable, modular sections or portions 212 can include a pair of sections or portions 212 positioned on/along opposing sides of the housing body 60. For example, in the illustrated embodiment, the sections or portions 212 are shown as being generally parallel to each other, though the sections/portions 212 can be transverse in relation to one another, e.g., can be slanted, angled, etc., without departing from the scope of the present disclosure. The sections/portions 212 can have a generally flat shape or construction, further can comprise various shapes, such as rectangles, triangles, arcuate shapes/portions etc., though other shapes, such as circles, ovals, polygons, etc., are possible without departing from the scope of the present disclosure. In the illustrated embodiment, the sections/portions 212 can include a first, upper portion 212A extending along the second portion 208 of the track 204, and a second, lower portion 212B extending from the first, upper portion 212A to a bottom portion 260B of the housing body 260, e.g., extending to a position substantially abutting or substantially adjacent to the floor 28. In additional, or alternative constructions, the customizable, interchangeable, modular sections or portions 212 can include additional customizable portions 12 attached thereto (e.g., disposed on an outer surface thereof) to provide further customization opportunities.

[0040] However, any suitable number of customizable, interchangeable, modular sections/portions 12, 212, with any suitable shapes, e.g., circular, oval, square, triangular, polygonal, etc. or combinations thereof, and any suitable configurations or arrangements, can be provided/employed without departing from the scope of the present disclosure.

[0041] The customizable, interchangeable sections/portions 12, 212 generally can be formed from a laminate material, such as a high-pressure laminate. In one embodiment, the customizable, interchangeable sections 12, 212 can include at least one substrate or base layer 150 that can be formed of plywood, fiber board, or other composite or layered/paneled materials, with a décor or design layer 152 disposed/received thereon (Fig. 3B, 4A, 4B, 5). The design or decor layer 152 can include a laminate sheet material, such as a plastic material, a paper material or other similar material layer (or series of stacked layers) having one or more colors, images, textures, finishes, etc. that can be selected by a customer to provide a customizable look/aesthetic to the housing body. The decor layer 152 also can include photo luminescent inks, reactive inks, etc., without departing from the scope of the present disclosure, and in some constructions, the décor layer 152 can include inks, dyes, etc. that are configured to provide the appearance of one or more three-dimensional images. The substrate layer 150 can be formed and selectively shaped, e.g., bent, cut, trimmed, etc., to generally conform to at least one selected part of the housing body 60. Thereafter, the décor layer 152 can be applied/laminated to the substrate layer to provide the customer selected appearance texture, finish, etc. thereto, and likewise the portion of the housing to which it is connected. However, the décor layer 152 can be applied over the substrate layer 150 prior to its shaping without departing from the scope of the present disclosure.

[0042] Fig. 5 shows a cross sectional view of the customizable sections/portions 12, 212 coupled to the housing body 60, 260 according to one example of the present disclosure. As shown in Fig. 5, the décor layer 152 (e.g., including a laminate sheet material) can be arranged along and over an outward facing surface 152A of the substrate layer 150 (e.g., including plywood, fiber board, or other composite or layered/paneled materials). The décor layer 152 includes the selected/customized colors, images, finishes, textures, etc. provided on its outward facing surface 152A. In some constructions, the décor layer 152 and the substrate layer 150 further can be coupled together by a reliable attachment, such as an adhesive, glue, etc.

[0043] As further indicated in Fig. 5, the substrate layer 150 also can be coupled/attached to the outer surface 60A, 260A of the housing body 60, 260 (e.g., including polymeric materials, such as plastics, elastomers, etc., or other suitable materials, such as metals or other composite or synthetic materials) by one or more adhesive layers 154, such as adhesive tape, glue, epoxy, etc. Ad-

ditionally, or in alternative constructions, there will be no adhesive layer 154 and the surface 150B can be in face to face contact with or otherwise about the surface 60A, 260A of the housing body 60, 260, with the customizable portions/sections 12, 212 being secured in place with fasteners, such as bolts, screws, etc., such as in connection assembly 300 shown in Fig. 10, and/or other suitable locking mechanisms, such as a latch, or pinned connection, etc. that facilitate relatively quick or easy removal of the substrate layer 150 from the housing 60, 260, and further can enable multiple attachments and removals, without substantial damage to the substrate layer and/or the housing, while also providing a substantially tight, secure connection/attachment between the substrate layer 150 and the housing body 60, 260, e.g., substantially preventing, reducing, or inhibiting displacement, dislodging, disconnection, dislocation, etc. of the customizable sections/portions from the housing during use of the return mechanism, such as due to vibrations, impacts, etc. at the bowling lane.

[0044] Furthermore, though only one customizable portions/sections 12, 212 is shown in Fig. 5, multiple (e.g., two or more) customizable portions/sections 12, 212 can be provided, such as two or more customizable portions/sections 12, 212 superposed over each other to provide for additional customization options, without departing from the scope of the present disclosure.

[0045] The customizable, interchangeable sections or portions 12, 212 can be releasably coupled or otherwise fixed to the housing body 60 using any suitable mechanism or means, such as adhesives, snap-fit and/or other mechanical connections, etc., without departing from the scope of the present disclosure. For example, as shown in Figs. 1A-1B, the customizable, interchangeable sections or portions 12 can be at least partially received within one or more complementary grooves, cavities, or recessed portions 92/94 defined in/along the housing body 60, with one or more of such customizable, interchangeable portions (*i.e.*, portion 82 as shown in Fig. 1B) slidably or snap-fitted within a groove 92 defined along the top and/or side parts 66/68 of the housing body. Other customizable, interchangeable portions (*i.e.*, part 90) also can be slidably or snap-fitted within grooves 94 defined along the side portions 66/68, such that portions 82 and 90 can be substantially easily and relatively quickly attached and detached to the housing body 60. The customizable sections or portions 12 further can be coupled to each other and/or the housing body 60 using one or more fastening mechanism, connecting members, fasteners, adhesives, etc., without departing from the scope of the present disclosure.

[0046] As shown in Figs. 6-8, the return assembly 10 can include connecting or accent members 98 for coupling the sections/portions 12 together and/or to the housing body 60. As Figs. 6 and 7A-B indicate, the connections members 98 can include an elongated body 100 having slots or grooves 102/104 defined therealong, that are sized and/or configured to receive an end portion

106/108 of at least one of the customizable, interchangeable portions/sections 12. The body 100 can be formed from a metallic material, such as stainless steel, aluminum, etc., or other suitable material, such as plastic, rubber, wood, etc. In another example, the connecting members 98 can be positioned about the side parts of the housing body 60 and can connect the ends of sections 82 and 90. The ends 106/108 of the sections 82 and 90 can be slidably fit and frictionally engage within the grooves 102/104 to couple sections 82/90 together. In addition, or in the alternative, the connecting member(s) 98 further can have one or more fasteners 110, such as screws, bolts, rivets, etc., for attaching the sections 12 thereto as shown in Fig. 7B.

[0047] Fig. 8 further shows that the connecting or accent member(s) 98 can be configured to be adhered or bonded to at least one of the customizable sections 12. For example, the connecting members 98 can have a bonding surface 112 that at least partially receives adhesive 114 to secure the connecting member 98 to at least a portion of the customizable/interchangeable sections 12. In some embodiments, the adhesive 114 can include a double sided adhesive tape that can be attached or affixed to the bonding surface 114. For example, the double sided adhesive tape can include double sided adhesive acrylic tapes, vinyl tapes, etc. or other suitable double sided tapes or adhesive tapes or similar materials that facilitate enable multiple attachments and removals of members 98, without substantial damage to the members 98 and/or the customizable sections 12, while also providing a substantially tight, secure connection/attachment between the substrate layer 150 and the housing body 60, 260, e.g., substantially preventing, reducing, or inhibiting displacement, dislodging, disconnection, dislocation, etc. of the customizable sections/portions from the housing during use of the return mechanism, such as due to vibrations, impacts, etc. at the bowling lane.

[0048] The customizable bowling ball return mechanism 10 also can include a series of light sources 120, such as LEDs, light bulbs, etc. disposed therealong (Figs. 7A and 7B). Such light sources 120 can be arranged along the connecting members 98 or a portion of the customizable sections 12 or housing body 60 substantially adjacent the connecting members 98. The connecting members 98 can have a flange 122 or other projecting portion that can at least partially cover the light sources 120 (Figs. 7A and 7B), and the light sources 120 further can be positioned to illuminate at least a portion of the housing body 60, the customizable section 12, and/or an area adjacent the assembly 10. For example, the light sources 120 can be positioned to at least partially reflect light off the flange 122 such that a portion 124 of the floor 28 substantially adjacent the housing 14 is illuminated. The light sources can be arranged along any portion of the assembly 10, e.g., the rails, support, inside the throat, etc., without departing from the scope of the present disclosure. The customizable sections 12 or housing body

60 additionally can have one or more translucent sections 126 that can be selectively illuminated by various ones of the light source(s) to provide various other visual effects.

[0049] Figs. 6, 9A and 9B show that the assembly 10 generally will have one or more end caps 130 that at least partially cover an end portion 132 of the connecting member 98, for example, to prevent injury to a bowler that may touch or bump into the connecting member 98. The end caps 130 can have an opening 134 that receives the end portions 132 of the connecting member 98 (Fig. 9B). The end caps 130 also can have a groove or slot 136 that receives at least a portion of the customizable sections 12.

[0050] Fig. 10 shows a connection assembly 300 for attachment of the customizable sections/portions 12 to the housing/housing portion(s) 14 according to one example of the present disclosure. As shown in Fig. 10, the connection assembly 300 can include a plurality of brackets 302, 304 including one or more brackets 302 connected to the customizable portion/section 12 and one or more brackets 304 connected to the housing portion 14 and/or portions of the rail 20. The brackets 302, 304 further may have one or more holes, apertures, etc. 306, which can be threaded or unthreaded, that receive a threaded fastener 308, such as a bolt, screw, etc., to facilitate attachment of brackets 302 and 304 and thus coupling of the customizable sections/portion 12 and the housing/plate 14. In some embodiments, the brackets 304/306 can include a space series of holes/apertures to facilitate adjustment of the connection assembly 300.

[0051] Embodiments of the present disclosure also can provide a method or process for customer/user design or customization of a bowling ball return assembly. For example, in some variations, prior to purchasing the return assembly, customers can access a website, mobile application, etc., and design and customize colors, images, finishes, textures, etc. for each of the plurality of customizable, interchangeable sections 12, 212, e.g., design data or information can be received from customers and used to develop custom designs.

[0052] Thereafter, the selected colors, finishes, images, textures, etc. can be provided (e.g., printed, painted, etc.) on the décor layer 152. The décor layer 152 then can be applied to/over the substrate layer 150 of the customizable, interchangeable section 12, 212. The entire customizable, interchangeable section 12, 212, including the substrate 150 and décor layer 152, can be formed, shaped, etc. to correspond to or at least partially cover at least a portion of the housing 60, 260 of the bowling ball return assembly, though the substrate layer 150 can be formed, shaped, etc. to at least partially cover/correspond to selected portion or portions of the housing 60, 260 prior to the application of the décor layer 152 thereto.

[0053] Further, the customizable, interchangeable sections 12, 212, with the customized design provide thereon, can be attached, coupled, etc. to the housing 14, 214 of the return assembly. In some embodiments,

a fasteners, brackets, and/or or other suitable connections mechanisms can be to couple to the sections 12, 212 the body 60, 260 of the housing 14, 214, although other reliable connector, such as adhesives, latching mechanisms, etc. can be used without departing from the scope of the present disclosure.

[0054] Still further, if a customer wants to later change/modify the design, e.g., to match updates to a bowling center, the customer can access the website, mobile application, etc. and design new customizable, interchangeable sections to replace the existing section 12, 212 to alter the design and look of the housing. Further, a customer could purchase a kit with differently designed sections 12, 212 that can be easily interchangeable, for example, to correspond to specific themes, seasons, holidays, etc.

[0055] The foregoing description generally illustrates and describes various embodiments of this disclosure. It will, however, be understood by those skilled in the art that various changes and modifications can be made to the above-discussed constructions and systems without departing from the spirit and scope of this disclosure as disclosed herein, and that it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as being illustrative, and not to be taken in a limiting sense. Furthermore, the scope of the present disclosure shall be construed to cover various modifications, combinations, additions, alterations, etc., above and to the above-described embodiments, which shall be considered to be within the scope of this disclosure. Accordingly, various features and characteristics as discussed herein may be selectively interchanged and applied to other illustrated and non-illustrated embodiment, and numerous variations, modifications, and additions further can be made thereto without departing from the spirit and scope of the present invention as set forth in the appended claims.

Claims

1. A customizable bowling ball return assembly (10, 200) for a bowling lane, comprising:

a retrieval area (18, 218) configured to receive one or more bowling balls (22) for retrieval by bowlers at the bowling lane; and
a housing (14, 214) located adjacent the retrieval area (18, 218), the housing (14, 214) comprising:

a housing body (60, 260) having a top part (70, 256) and side parts (66, 68); and
a passage or discharge (16, 254) defined in the housing body (60, 260) that is sized, dimensioned, or configured to allow for passage of the one or more bowling balls (22) to the retrieval area (18, 218), wherein the

customizable bowling ball return assembly (10, 200) is **characterized by**:

a plurality of customizable, modular, or interchangeable portions (12, 212) of a selected size, dimension, shape, or configuration that are selectively coupleable to the housing body (60, 260), and which include a face portion (80, 280) with one or more selected colors, images, depictions, graphics, themes, finishes, textures, or combinations thereof provided thereon, the plurality of customizable, modular, or interchangeable portions (12, 212) including a pair of opposing side parts (86, 88) that substantially cover the side parts (66, 68) of the housing body (60, 260), and the plurality of customizable, modular, or interchangeable portions (12, 212) further including at least one connecting mechanism (300) configured to releasably couple the plurality of customizable, modular, or interchangeable portions (12, 212) together and/or to the housing body (60, 260).

2. The customizable bowling ball return assembly (10, 200) of claim 1, wherein the plurality of customizable, modular, or interchangeable portions (12, 212) include a high-pressure laminate material (152).

3. The customizable bowling ball return assembly (10, 200) of claim 1, wherein the plurality of customizable, modular, or interchangeable portions (12, 212) include a substrate layer (150) that is formed into the selected size, dimension, shape, or configuration, and a design layer (152) that includes the one or more selected colors, images, depictions, graphics, themes, finishes, textures, or combinations thereof and is at least partially received over the substrate layer (150).

4. The customizable bowling ball return assembly (10, 200) of claim 3, wherein the substrate layer (150) comprises at least one of plywood, fiber board, composite materials, layered materials, or combinations thereof and wherein the design layer (152) further comprises at least one of a laminate sheet material (152), a paper material, a plastic material, or combinations thereof applied over the substrate layer (150).

5. The customizable bowling ball return assembly (10, 200) of claim 1, wherein the plurality of customizable, modular, or interchangeable portions (12) includes a top portion (84) configured to extend along and substantially cover the top part (70) of the housing body (60).

6. The customizable bowling ball return assembly (10, 200) of claim 1, wherein the opposing side portions

(212) include an upper portion (212A) and a lower portion (212B) extending from the upper portion (212A) to a bottom portion (260B) of the housing body (260).

7. The customizable bowling ball return assembly (10, 200) of claim 1, wherein the retrieval area (18, 218) includes a rail (20) configured to receive and support a plurality of returned bowling balls (22) for retrieval by the bowlers at the bowling lane.

8. The customizable bowling ball return assembly (10, 200) of claim 1, further comprising an automatic return mechanism (24) at least partially enclosed by the housing body (60), the return mechanism (24) including rotating wheels (44) configured to move or guide returned bowling balls (22) towards and through the discharge (16) in the housing (14) for discharge of the bowling balls (22) onto the retrieval area (18).

9. The customizable bowling ball return assembly (10, 200) of claim 1, further comprising one or more tracks (204) with guide surfaces (204A) for guiding returned bowling balls (22) to the retrieval area (218).

10. A customizable housing (14, 214) for a bowling ball return (10, 200) at a bowling lane, comprising:

a housing body (60, 260) having side parts (66, 68); and

a passage or discharge (16, 254) defined in or through the housing body (60, 260) that is sized, dimensioned, or configured to allow for passage of one or more bowling balls (22) to a retrieval area (18, 218), the customizable housing **characterized by:**

a plurality of customizable, modular, or interchangeable portions (12, 212) of a selected size, dimension, shape, or configuration that are configured to be selectively coupled to the housing body (60, 260), and that include a surface or face (80, 280) with one or more selected colors, images, depictions, graphics, themes, finishes, textures, or combinations thereof provided on the surface or face (80, 280), the plurality of customizable, modular, or interchangeable portions (12, 212) being releasably coupled to the housing body (60, 260) using one or more fastening mechanisms, connecting members, fasteners, or adhesives, or combinations thereof, the plurality of customizable, modular, or interchangeable portions (12, 212) including a side part (86, 88) that substantially covers a corresponding side part (66, 68) of the housing body (60, 260).

11. The customizable housing (14, 214) of claim 10, wherein the plurality of customizable, modular, or

interchangeable portions (12, 212) include a high-pressure laminate material (152); or wherein the plurality of customizable, modular, or interchangeable portions (12, 212) include a high-pressure laminate material (152) and wherein the plurality of customizable, modular, or interchangeable portions (12, 212) include a substrate layer (150) that comprises at least one of plywood, fiber board, composite materials, layered materials, or combinations thereof and is formed into the selected size, dimension, shape, or configuration, and a design layer (152) that includes at least one of a laminate sheet material, a paper material, a plastic material, or combinations thereof, with the one or more selected colors, images, depictions, graphics, themes, finishes, textures, or combinations thereof provided along a surface (80, 280) thereof, and is at least partially received over the substrate layer (150).

12. The customizable housing (14, 214) of claim 10, wherein the plurality of customizable, modular, or interchangeable portions (12, 212) includes at least one replaceable top portion (82) including an upper part (84) configured to extend along and substantially cover a top part (70) of the housing body (60), and a pair of opposing side parts (86, 88, 212) that extend downwardly from the upper part (84) and substantially cover side parts (66, 68) of the housing body (60).

13. The customizable housing (14, 214) of claim 10, wherein the retrieval area (18, 218) includes a rail (20) configured to receive and support a plurality of returned bowling balls (22) for retrieval by the bowlers at the bowling lane.

14. The customizable housing (14, 214) of claim 10, further including one or more connecting members (90) that are configured to releasably couple the plurality of customizable, modular, or interchangeable portions together and/or to at least a portion of the housing body (60, 260).

15. The customizable housing (14, 214) of claim 10, wherein the one or more bowling balls (22) includes ten-pin balls, duckpin balls, five-pin balls, or candlepin balls.

Patentansprüche

1. Anpassbare Bowlingkugelnrückführungsanordnung (10, 200) für eine Bowlingbahn, die umfasst:

einen Rückholbereich (18, 218), der dazu eingerichtet ist, eine oder mehrere Bowlingkugeln (22) für die Rückholung durch Bowler an der Bowlingbahn aufzunehmen; und

ein Gehäuse (14, 214) das benachbart zum Rückholbereich (18, 218) angeordnet ist, wobei das Gehäuse (14, 214) umfasst:

- einen Gehäusekörper (60, 260) mit einem oberen Teil (70, 256) und Seitenteilen (66, 68); und
einen Durchgang oder Auslass (16, 254), der im Gehäusekörper (60, 260) definiert ist, der bemessen, dimensioniert oder gestaltet ist, um den Durchgang der einen oder der mehreren Bowlingkugeln (22) zum Rückholbereich (18, 218) zu ermöglichen, wobei die anpassbare Bowlingkugelnrückführungsanordnung (10, 200) **gekennzeichnet ist durch:**
eine Vielzahl von anpassbaren, modularen oder auswechselbaren Abschnitten (12, 212) mit einer ausgewählten Größe, Abmessung, Form oder Gestaltung, die selektiv mit dem Gehäusekörper (60, 260) koppelbar sind und die einen Flächenabschnitt (80, 280) mit einer oder mehreren ausgewählten Farben, Bildern, Darstellungen, Graphiken, Motiven, Polituren, Texturen oder Kombinationen davon umfassen, die darauf vorgesehen sind, wobei die Vielzahl von anpassbaren, modularen oder auswechselbaren Abschnitten (12, 212) ein Paar von gegenüberliegenden Seitenteilen (86, 88) umfasst, die im Wesentlichen die Seitenteile (66, 68) des Gehäusekörpers (60, 260) bedecken, und die Vielzahl von anpassbaren, modularen oder auswechselbaren Abschnitten (12, 212) ferner mindestens einen Verbindungsmechanismus (300) umfasst, der dazu eingerichtet ist, die Vielzahl von anpassbaren, modularen oder auswechselbaren Abschnitten (12, 212) miteinander und/oder mit dem Gehäusekörper (60, 260) lösbar zu koppeln.
2. Anpassbare Bowlingkugelnrückführungsanordnung (10, 200) nach Anspruch 1, wobei die Vielzahl von anpassbaren, modularen oder auswechselbaren Abschnitten (12, 212) ein Hochdrucklaminatmaterial (152) umfasst.
 3. Anpassbare Bowlingkugelnrückführungsanordnung (10, 200) nach Anspruch 1, wobei die Vielzahl von anpassbaren, modularen oder auswechselbaren Abschnitten (12, 212) eine Substratschicht (150), die in die ausgewählte Größe, Abmessung, Form oder Gestaltung ausgebildet ist, und eine Designschicht (152), die die eine oder die mehreren ausgewählten Farben, Bilder, Darstellungen, Graphiken, Motive, Polituren, Texturen oder Kombinationen davon umfasst und zumindest teilweise über der Substratschicht (150) aufgenommen ist, umfasst.
 4. Anpassbare Bowlingkugelnrückführungsanordnung (10, 200) nach Anspruch 3, wobei die Substratschicht (150) mindestens eines von Sperrholz, einer Faserplatte, Verbundmaterialien, geschichteten Materialien oder Kombinationen davon umfasst und wobei die Designschicht (152) ferner mindestens eines von einem Laminatlagenmaterial (152), einem Papiermaterial, einem Kunststoffmaterial oder Kombinationen davon, das über der Substratschicht (150) aufgebracht ist, umfasst.
 5. Anpassbare Bowlingkugelnrückführungsanordnung (10, 200) nach Anspruch 1, wobei die Vielzahl von anpassbaren, modularen oder auswechselbaren Abschnitten (12) einen oberen Abschnitt (84) umfasst, der so gestaltet ist, dass er sich entlang des oberen Teils (70) des Gehäusekörpers (60) erstreckt und diesen im Wesentlichen bedeckt.
 6. Anpassbare Bowlingkugelnrückführungsanordnung (10, 200) nach Anspruch 1, wobei die gegenüberliegenden Seitenabschnitte (212) einen oberen Abschnitt (212A) und einen unteren Abschnitt (212B), der sich vom oberen Abschnitt (212A) zu einem unteren Abschnitt (260B) des Gehäusekörpers (260) erstreckt, umfassen.
 7. Anpassbare Bowlingkugelnrückführungsanordnung (10, 200) nach Anspruch 1, wobei der Rückholbereich (18, 218) eine Schiene (20) umfasst, die dazu eingerichtet ist, eine Vielzahl von zurückgeführten Bowlingkugeln (22) für die Rückholung durch die Bowler an der Bowlingbahn aufzunehmen und abzustützen.
 8. Anpassbare Bowlingkugelnrückführungsanordnung (10, 200) nach Anspruch 1, die ferner einen automatischen Rückführungsmechanismus (24) umfasst, der zumindest teilweise durch den Gehäusekörper (60) eingeschlossen ist, wobei der Rückführungsmechanismus (24) Drehräder (44) umfasst, die dazu eingerichtet sind, zurückgeführte Bowlingkugeln (22) in Richtung des und durch den Auslass (16) im Gehäuse (14) für das Auslassen der Bowlingkugeln (22) auf den Rückholbereich (18) zu bewegen oder zu führen.
 9. Anpassbare Bowlingkugelnrückführungsanordnung (10, 200) nach Anspruch 1, die ferner eine oder mehrere Bahnen (204) mit Führungsoberflächen (204A) zum Führen von zurückgeführten Bowlingkugeln (22) zum Rückholbereich (218) umfasst.
 10. Anpassbares Gehäuse (14, 214) für eine Bowlingkugelnrückführung (10, 200) an einer Bowlingbahn, das umfasst:

- einen Gehäusekörper (60, 260) mit Seitenteilen (66, 68); und
einen Durchgang oder Auslass (16, 254), der in dem oder durch den Gehäusekörper (60, 260) hindurch definiert ist, der bemessen, dimensioniert oder gestaltet ist, um den Durchgang von einer oder mehreren Bowlingkugeln (22) zum Rückholbereich (18, 218) zu ermöglichen, wobei das anpassbare Gehäuse **gekennzeichnet ist durch:**
eine Vielzahl von anpassbaren, modularen oder auswechselbaren Abschnitten (12, 212) mit einer ausgewählten Größe, Abmessung, Form oder Gestaltung, die so gestaltet sind, dass sie selektiv mit dem Gehäusekörper (60, 260) gekoppelt werden, und die eine Oberfläche oder Fläche (80, 280) mit einer oder mehreren ausgewählten Farben, Bildern, Darstellungen, Graphiken, Motiven, Polituren, Texturen oder Kombinationen davon umfassen, die auf der Oberfläche oder Fläche (80, 280) vorgesehen sind, wobei die Vielzahl von anpassbaren, modularen oder auswechselbaren Abschnitten (12, 212) mit dem Gehäusekörper (60, 260) unter Verwendung von einem oder mehreren Befestigungsmechanismen, Verbindungselementen, Befestigungsvorrichtungen oder Klebstoffen oder Kombinationen davon lösbar gekoppelt wird, wobei die Vielzahl von anpassbaren, modularen oder auswechselbaren Abschnitten (12, 212) einen Seitenteil (86, 88) umfasst, der im Wesentlichen einen entsprechenden Seitenteil (66, 68) des Gehäusekörpers (60, 260) bedeckt.
- 11.** Anpassbares Gehäuse (14, 214) nach Anspruch 10, wobei die Vielzahl von anpassbaren, modularen oder auswechselbaren Abschnitten (12, 212) ein Hochdrucklaminatmaterial (152) umfasst; oder wobei die Vielzahl von anpassbaren, modularen oder auswechselbaren Abschnitten (12, 212) ein Hochdrucklaminatmaterial (152) umfasst und wobei die Vielzahl von anpassbaren, modularen oder auswechselbaren Abschnitten (12, 212) eine Substratschicht (150), die mindestens eines von Sperrholz, einer Faserplatte, Verbundmaterialien, geschichteten Materialien oder Kombinationen davon umfasst und in die ausgewählten Größe, Abmessung, Form oder Konfiguration ausgebildet ist, und eine Designschicht (152), die mindestens eines von einem Laminatlagenmaterial, einem Papiermaterial, einem Kunststoffmaterial oder Kombinationen davon mit der einen oder den mehreren ausgewählten Farben, Bildern, Darstellungen, Graphiken, Motiven, Polituren, Texturen oder Kombinationen davon umfasst, das entlang einer Oberfläche (80, 280) davon vorgesehen ist, und zumindest teilweise über der Substratschicht (150) aufgenommen ist, umfasst.
- 12.** Anpassbares Gehäuse (14, 214) nach Anspruch 10, wobei die Vielzahl von anpassbaren, modularen oder auswechselbaren Abschnitten (12, 212) mindestens einen austauschbaren oberen Abschnitt (82) mit einem oberen Teil (84), der so gestaltet ist, dass er sich entlang eines oberen Teils (70) des Gehäusekörpers (60) erstreckt und diesen im Wesentlichen bedeckt, und ein Paar von gegenüberliegenden Seitenteilen (86, 88, 212), die sich vom oberen Teil (84) nach unten erstrecken und im Wesentlichen Seitenteile (66, 68) des Gehäusekörpers (60) bedecken, umfasst.
- 13.** Anpassbares Gehäuse (14, 214) nach Anspruch 10, wobei der Rückholbereich (18, 218) eine Schiene (20) umfasst, die dazu eingerichtet ist, eine Vielzahl von zurückgeführten Bowlingkugeln (22) für die Rückholung durch die Bowler an der Bowlingbahn aufzunehmen und abzustützen.
- 14.** Anpassbares Gehäuse (14, 214) nach Anspruch 10, das ferner ein oder mehrere Verbindungselemente (90) umfasst, die dazu eingerichtet sind, die Vielzahl von anpassbaren, modularen oder auswechselbaren Abschnitten miteinander und/oder mit zumindest einem Abschnitt des Gehäusekörpers (60, 260) lösbar zu koppeln.
- 15.** Anpassbares Gehäuse (14, 214) nach Anspruch 10, wobei die eine oder die mehreren Bowlingkugeln (22) Ten-Pin-Kugeln, Duckpin-Kugeln, Five-Pin-Kugeln oder Candlepin-Kugeln umfassen.
- Revendications**
- 1.** Ensemble de retour de balle de bowling personnalisable (10, 200) pour une piste de bowling, comportant :
- une zone de récupération (18, 218), configurée pour recevoir une ou plusieurs balle(s) de bowling (22) pour la récupération par des joueurs de bowling à la piste de bowling ; et
un boîtier (14, 214), agencé adjacent à la zone de récupération (18, 218), le boîtier (14, 214) comportant :
- un corps de boîtier (60, 260), ayant une partie supérieure (70, 256) et des parties latérales (66, 68) ; et
un passage ou une décharge (16, 254), défini dans le corps de boîtier (60, 260), qui est calculé, dimensionné ou configuré pour permettre le passage d'une ou plusieurs balle(s) de bowling (22) à la zone de récupération (18, 218), dans lequel l'ensemble de retour de balle de bowling personnalisable

- ble (10, 200) est **caractérisé par** :
- une pluralité de parties personnalisables, modulaires ou interchangeables (12, 212) d'une taille, dimension, forme ou configuration choisie, qui peuvent être couplées sélectivement au corps de boîtier (60, 260), et qui comportent une partie de face (80, 280) avec une ou plusieurs couleurs, images, représentations, graphiques, thèmes, finitions, textures choisis ou leurs combinaisons, prévus sur ceux-ci, dans lequel la pluralité de parties personnalisables, modulaires ou interchangeables (12, 212) comporte une paire des parties latérales opposées (86, 88), qui couvrent sensiblement les parties latérales (66, 68) du corps de boîtier (60, 260), et dans lequel la pluralité de parties personnalisables, modulaires ou interchangeables (12, 212) comporte en outre au moins un mécanisme de liaison (300), configuré pour coupler ensemble et / ou au corps de boîtier (60, 260) de manière amovible la pluralité de parties personnalisables, modulaires ou interchangeables (12, 212).
2. Ensemble de retour de balle de bowling personnalisable (10, 200) selon la revendication 1, dans lequel la pluralité de parties personnalisables, modulaires ou interchangeables (12, 212) comporte un matériau stratifié haute pression (152).
 3. Ensemble de retour de balle de bowling personnalisable (10, 200) selon la revendication 1, dans lequel la pluralité de parties personnalisables, modulaires ou interchangeables (12, 212) comporte une couche de substrat (150), qui est formée dans la taille, dimension, forme ou configuration choisie, et une couche décorative (152), qui comporte l'un ou plusieurs couleurs, images, représentations, graphiques, thèmes, finitions, textures choisis ou des combinaisons de ceux-ci, et est au moins partiellement reçue sur la couche de substrat (150).
 4. Ensemble de retour de balle de bowling personnalisable (10, 122) selon la revendication 3, dans lequel la couche de substrat (150) comporte au moins un parmi le contreplaqué, la plaque de fibre, les matériaux composites, les matériaux multicouches, ou des combinaison de ceux-ci, et dans lequel la couche décorative (152) comporte en outre au moins un parmi une feuille laminée (152), un matériau de papier, une matière plastique ou des combinaison de ceux-ci, appliqués sur la couche de substrat (150).
 5. Ensemble de retour de balle de bowling personnalisable (10, 200) selon la revendication 1, dans lequel la pluralité de parties personnalisables, modulaires ou interchangeables (12, 212) comporte une section supérieure (84), configurée pour s'étendre le long de et sensiblement couvrir la partie supérieure (70) du corps de boîtier (60).
 6. Ensemble de retour de balle de bowling personnalisable (10, 200) selon la revendication 1, dans lequel les parties latérales opposées (212) comportent une partie haute (212A) et une partie basse (212B) s'étendant de la partie haute (212A) vers une partie inférieure (260B) du corps de boîtier (260).
 7. Ensemble de retour de balle de bowling personnalisable (10, 200) selon la revendication 1, dans lequel la zone de récupération (18, 218) comporte un rail (20), configuré pour recevoir et supporter une pluralité de balles de bowling (22) retournées pour la récupération par les joueurs de bowling à la piste de bowling.
 8. Ensemble de retour de balle de bowling personnalisable (10, 200) selon la revendication 1, comportant en outre un mécanisme automatique de retour (24), au moins partiellement entouré par le corps de boîtier (60), dans lequel le mécanisme de retour (24) comporte des roues rotatives (44), configurées pour déplacer ou diriger des balles de bowling (22) retournées vers et à travers la décharge (16) dans le boîtier (14) pour décharger les balles de bowling (22) dans la zone de récupération (18).
 9. Ensemble de retour de balle de bowling personnalisable (10, 200) selon la revendication 1, comportant en outre une ou plusieurs voies (204) avec des surfaces de guidage (204A) pour diriger des balles de bowling (22) retournées à la zone de récupération (218).
 10. Boîtier (14, 214) personnalisable pour un retour de balles de bowling (10, 200) à une piste de bowling, comportant :
 - un corps de boîtier (60, 260), ayant des parties latérales (66, 68) ; et
 - un passage ou une décharge (16, 254), défini dans ou à travers le corps de boîtier (60, 260), qui est calculé, dimensionné ou configuré pour permettre le passage d'une ou plusieurs balle(s) de bowling (22) à une zone de récupération (18, 218), dans lequel le boîtier personnalisable est **caractérisé par** :
 - une pluralité de parties personnalisables, modulaires ou interchangeables (12, 212) d'une taille, dimension, forme ou configuration choisie, qui sont configurées pour être couplées sélectivement au corps de boîtier (60, 260), et qui comportent une surface ou face (80, 280) avec un ou plusieurs couleurs, images, représenta-

- tions, graphiques, thèmes, finitions, textures choisis ou des combinaisons de ceux-ci, pourvus sur la surface ou la face (80, 280), dans lequel la pluralité de parties personnalisables, modulaires ou interchangeables (12, 212) est couplée de manière amovible au corps de boîtier (60, 260) en utilisant un ou plusieurs mécanisme(s) de fixation, des éléments de liaison, des moyens de fixation ou des adhésifs ou des combinaisons de ceux-ci, dans lequel la pluralité de parties personnalisables, modulaires ou interchangeables (12, 212) comporte une partie latérale (86, 88) couvrant sensiblement une partie latérale (66, 68) correspondante du corps de boîtier (60, 260).
11. Boîtier (14, 214) personnalisable selon la revendication 10, dans lequel la pluralité de parties personnalisables, modulaires ou interchangeables (12, 212) comporte un matériau stratifié haute pression (152) ; ou dans lequel la pluralité de parties personnalisables, modulaires ou interchangeables (12, 212) comporte un matériau stratifié haute pression (152), et dans lequel la pluralité de parties personnalisables, modulaires ou interchangeables (12, 212) comporte une couche de substrat (150), qui comporte au moins un parmi un contreplaqué, une plaque de fibre, des matériaux composites, des matériaux multicouches ou des combinaisons de ceux-ci, et est formée dans la taille, dimension, forme ou configuration choisie, et une couche décorative (152), qui comporte au moins un parmi une feuille laminée, un matériau de papier, une matière plastique ou des combinaisons de ceux-ci, avec un ou plusieurs couleurs, images, représentations, graphiques, thèmes, finitions, textures choisis ou des combinaisons de ceux-ci prévus le long d'une surface (80, 280) de ceux-ci, et est au moins partiellement reçu sur la couche de substrat (150).
12. Boîtier (14, 214) personnalisable selon la revendication 10, dans lequel la pluralité de parties personnalisables, modulaires ou interchangeables (12, 212) comporte au moins une section supérieure (82) remplaçable comportant une part supérieure (84), configurée pour s'étendre le long de et couvrir sensiblement une partie supérieure (70) du corps de boîtier (60), et une paire des parties latérales opposées (86, 88, 212) s'étendant vers le bas à partir de la part supérieure (84), et sensiblement couvrant des parties latérales (66, 68) du corps de boîtier (60).
13. Boîtier (14, 214) personnalisable selon la revendication 10, dans lequel la zone de récupération (18, 218) comporte un rail (20), configuré pour recevoir et supporter une pluralité de balles de bowling (22) retournées pour la récupération par les joueurs de bowling à la piste de bowling.
14. Boîtier (14, 214) personnalisable selon la revendication 10, comportant en outre un ou plusieurs éléments de liaison (90), qui sont configurés pour coupler ensemble ou et / ou au moins à une partie du corps de boîtier (60, 260) de manière amovible la pluralité de parties personnalisables, modulaires ou interchangeables.
15. Boîtier (14, 214) personnalisable selon la revendication 10, dans lequel l'une ou plusieurs balle(s) de bowling (22) comporte(nt) des balles à dix broches, des balles plus petites (*duckpin*), des balles à cinq broches, ou des balles aux chandelles (*candlepin*).

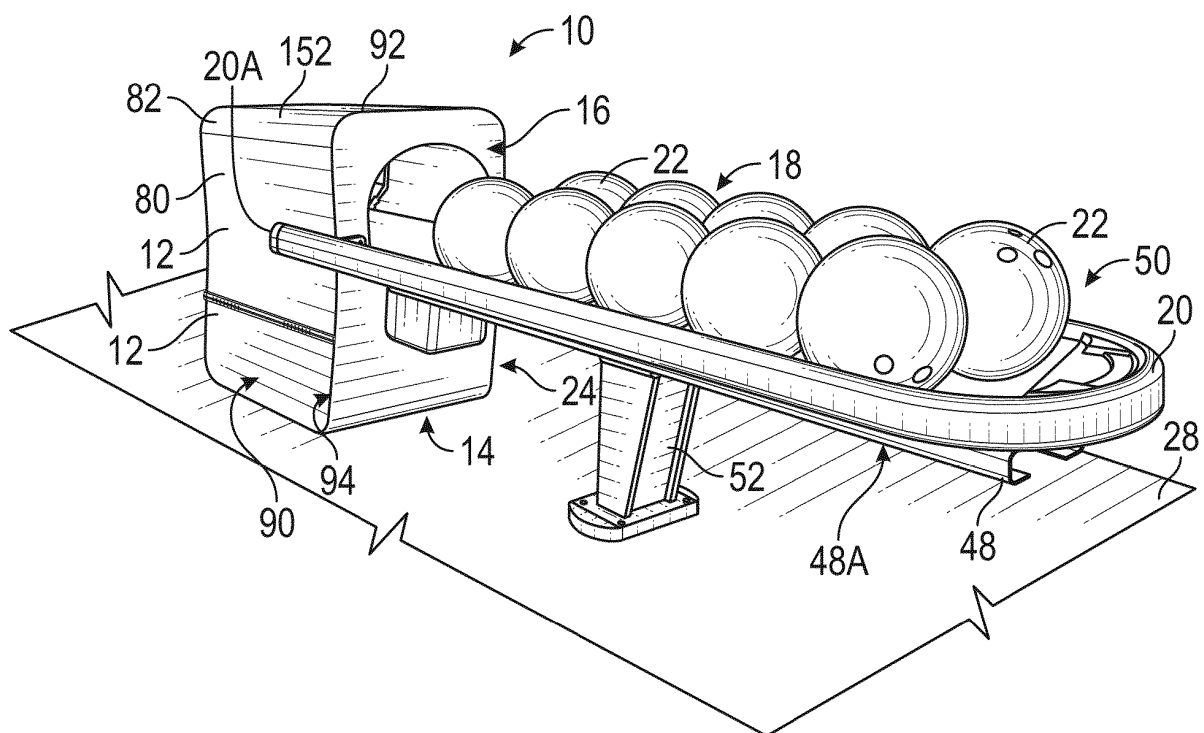


FIG. 1A

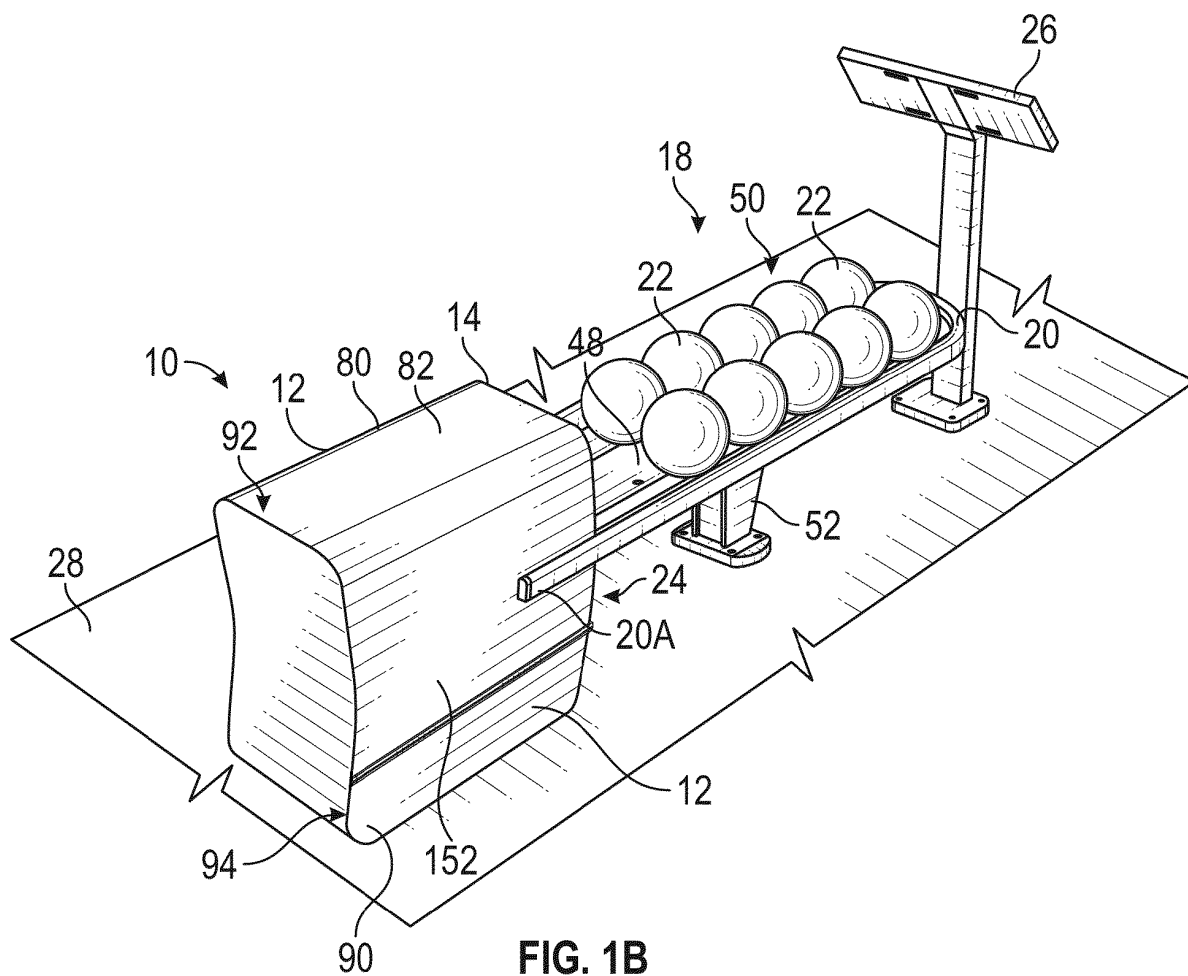


FIG. 1B

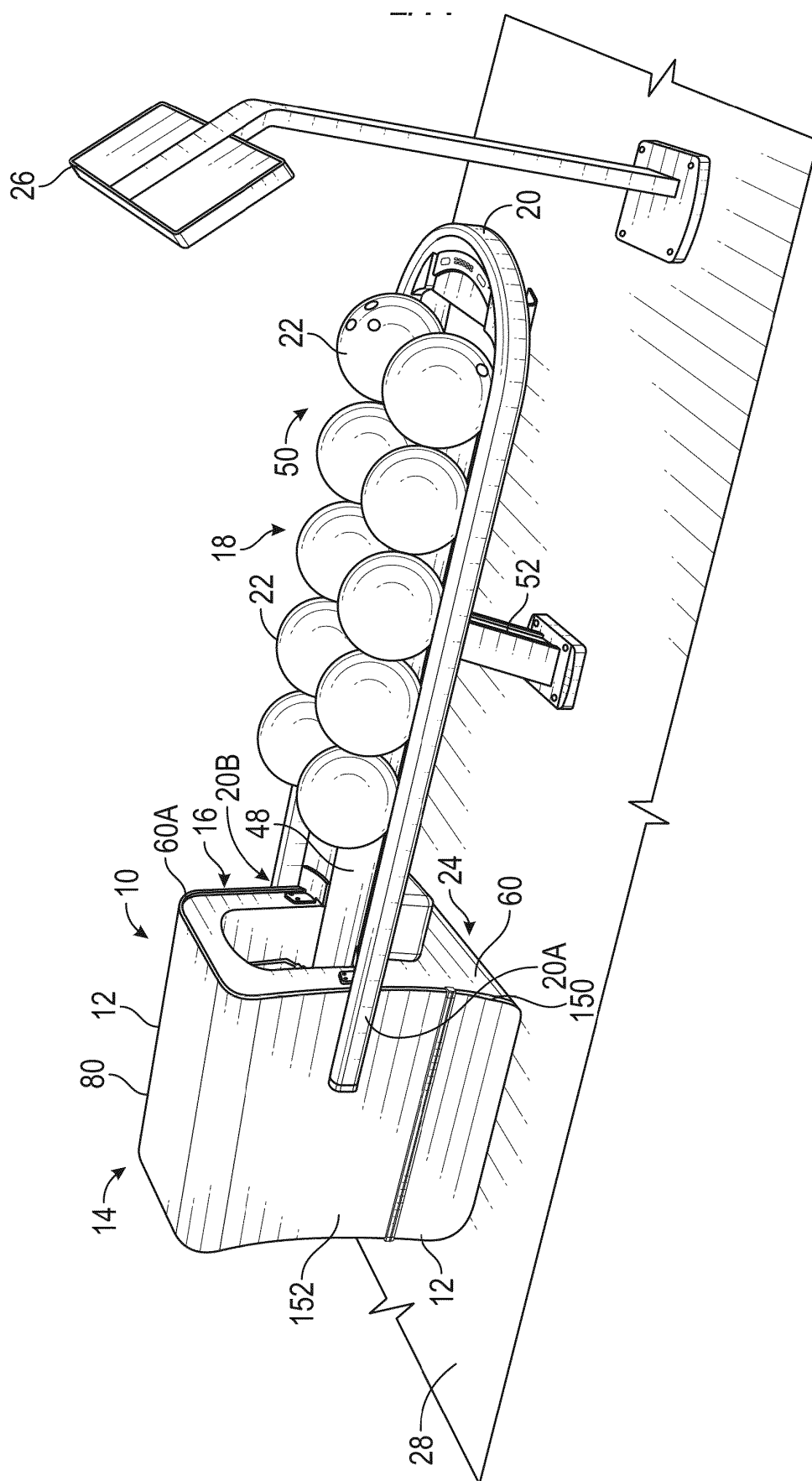


FIG. 1C

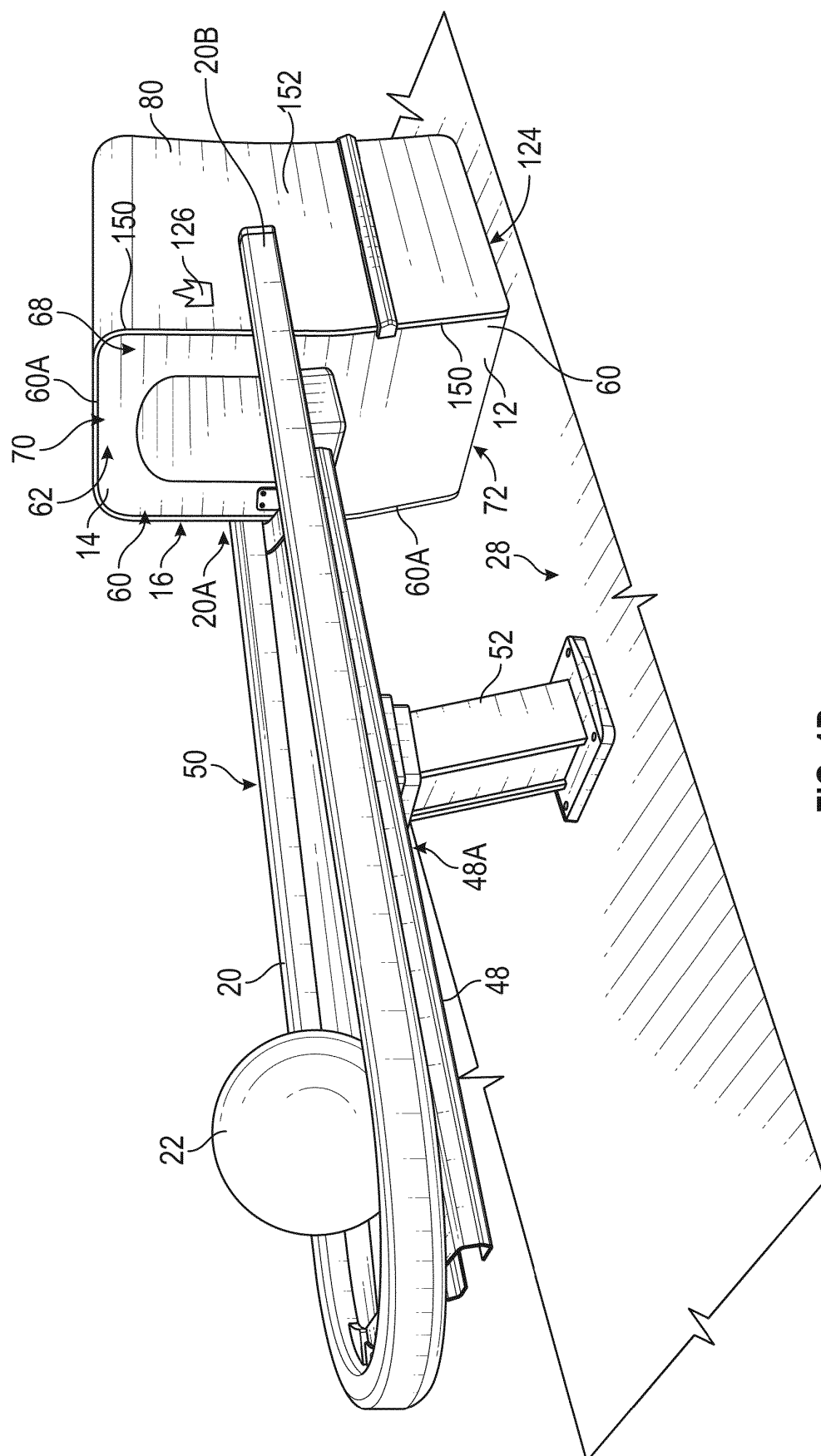


FIG. 1D

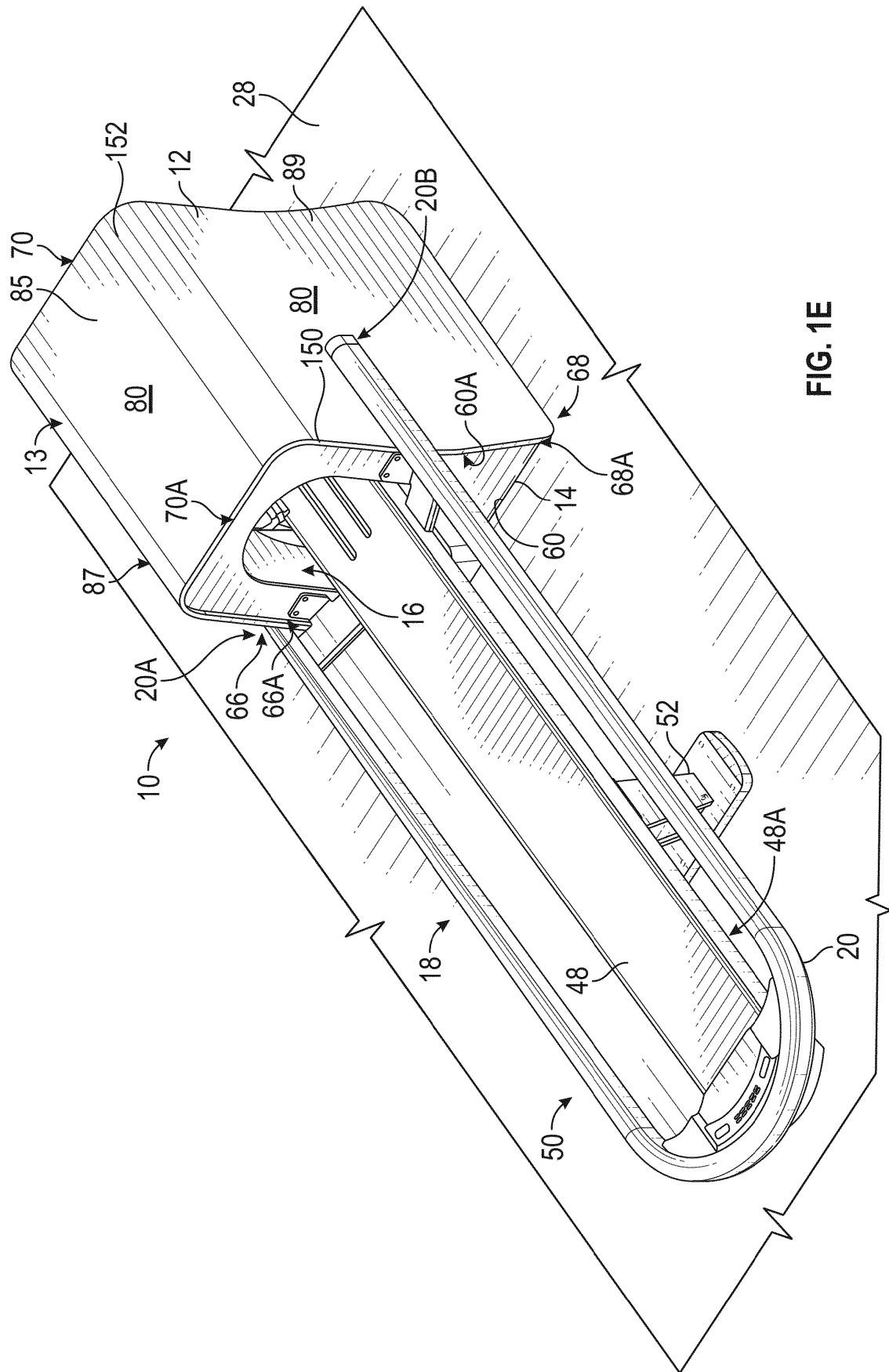


FIG. 1E

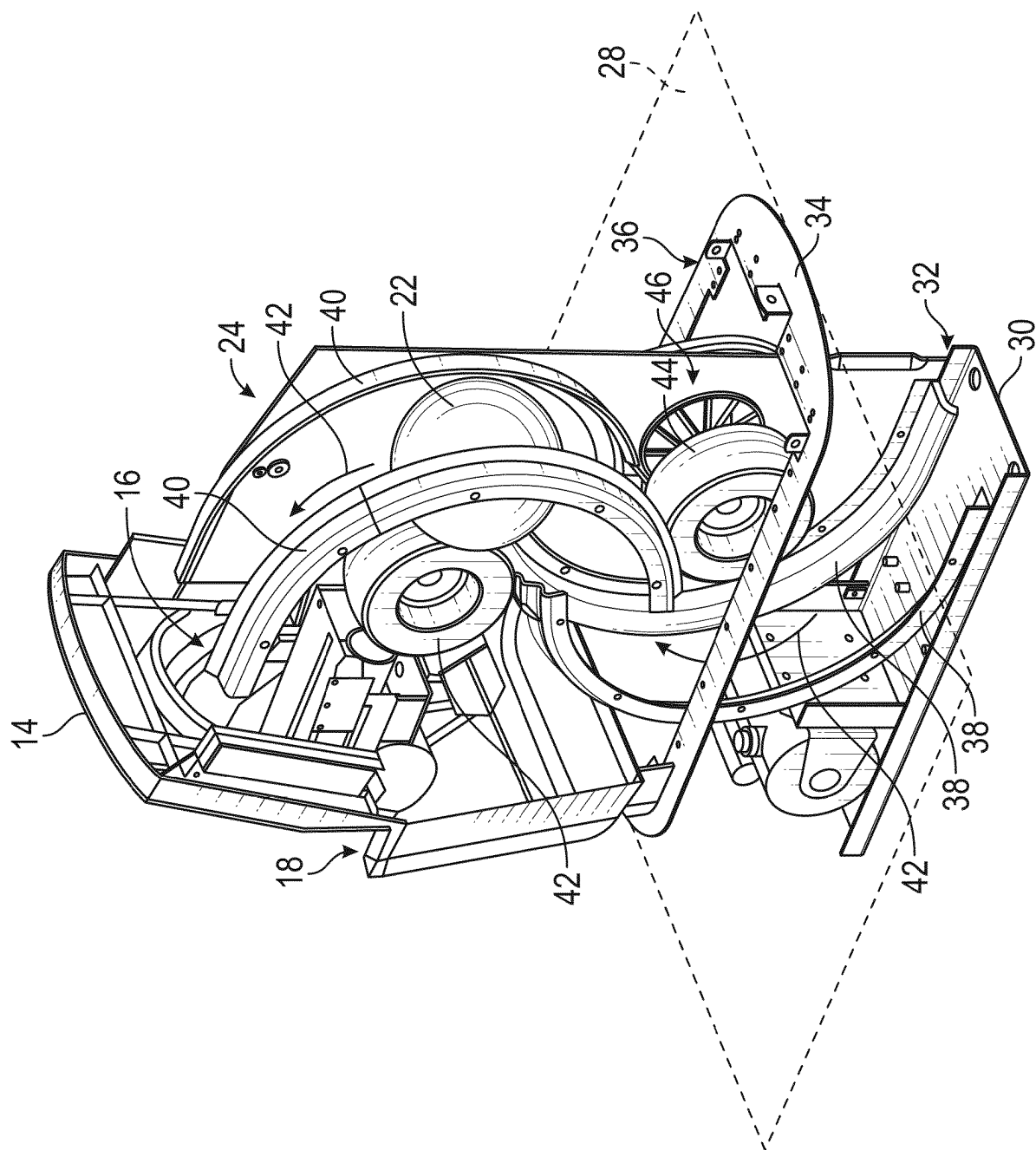


FIG. 2

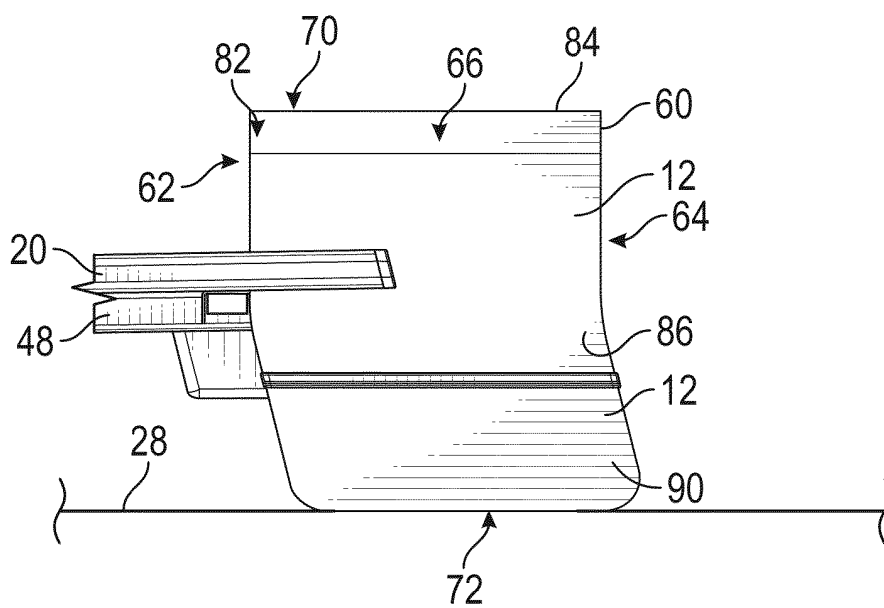


FIG. 3A

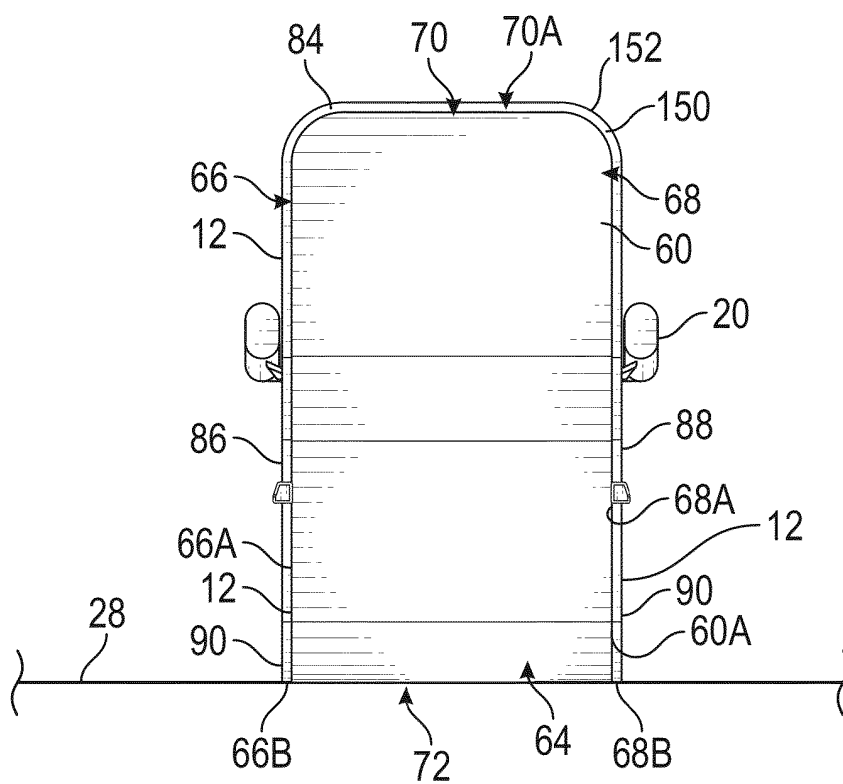


FIG. 3B

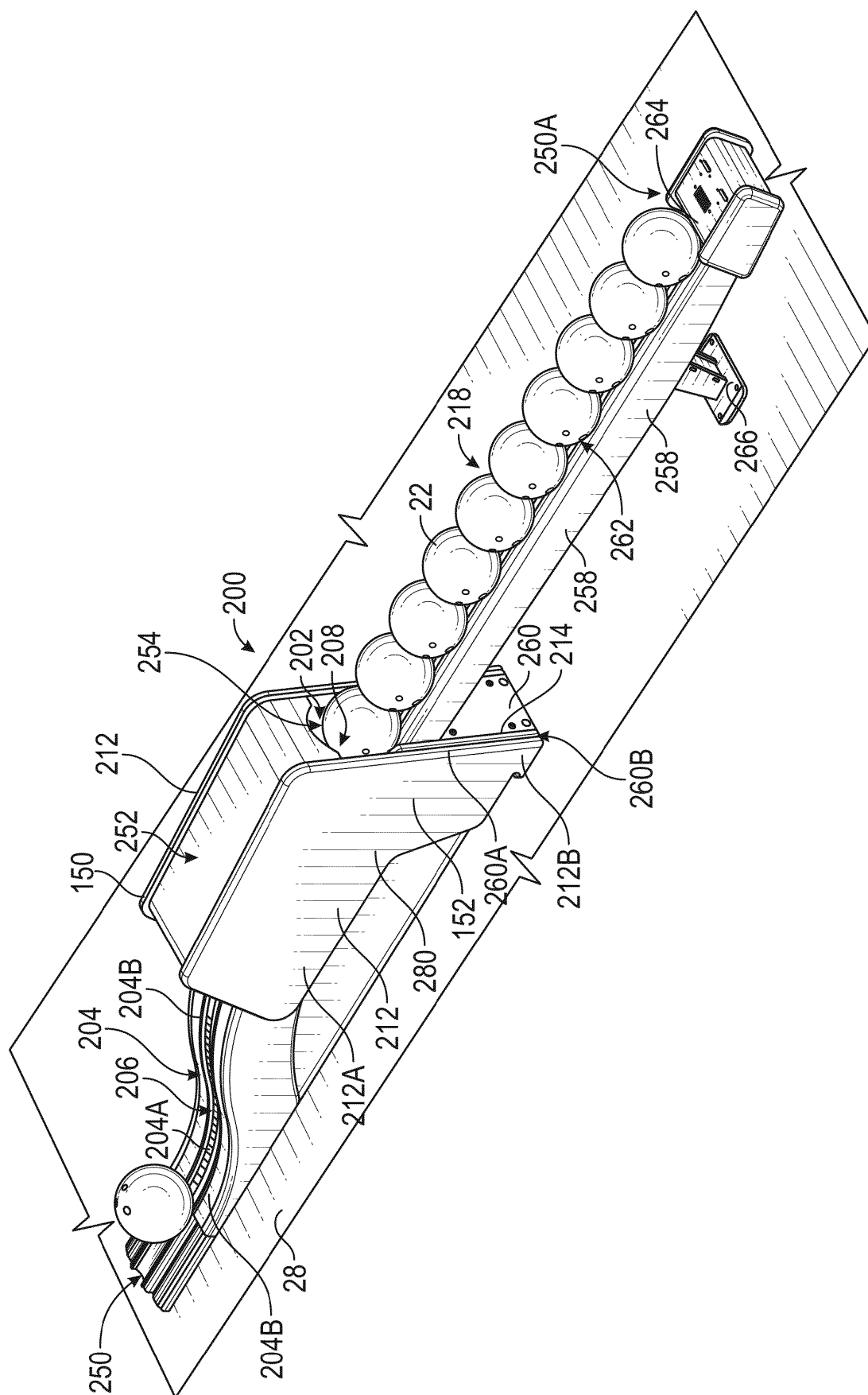


FIG. 4A

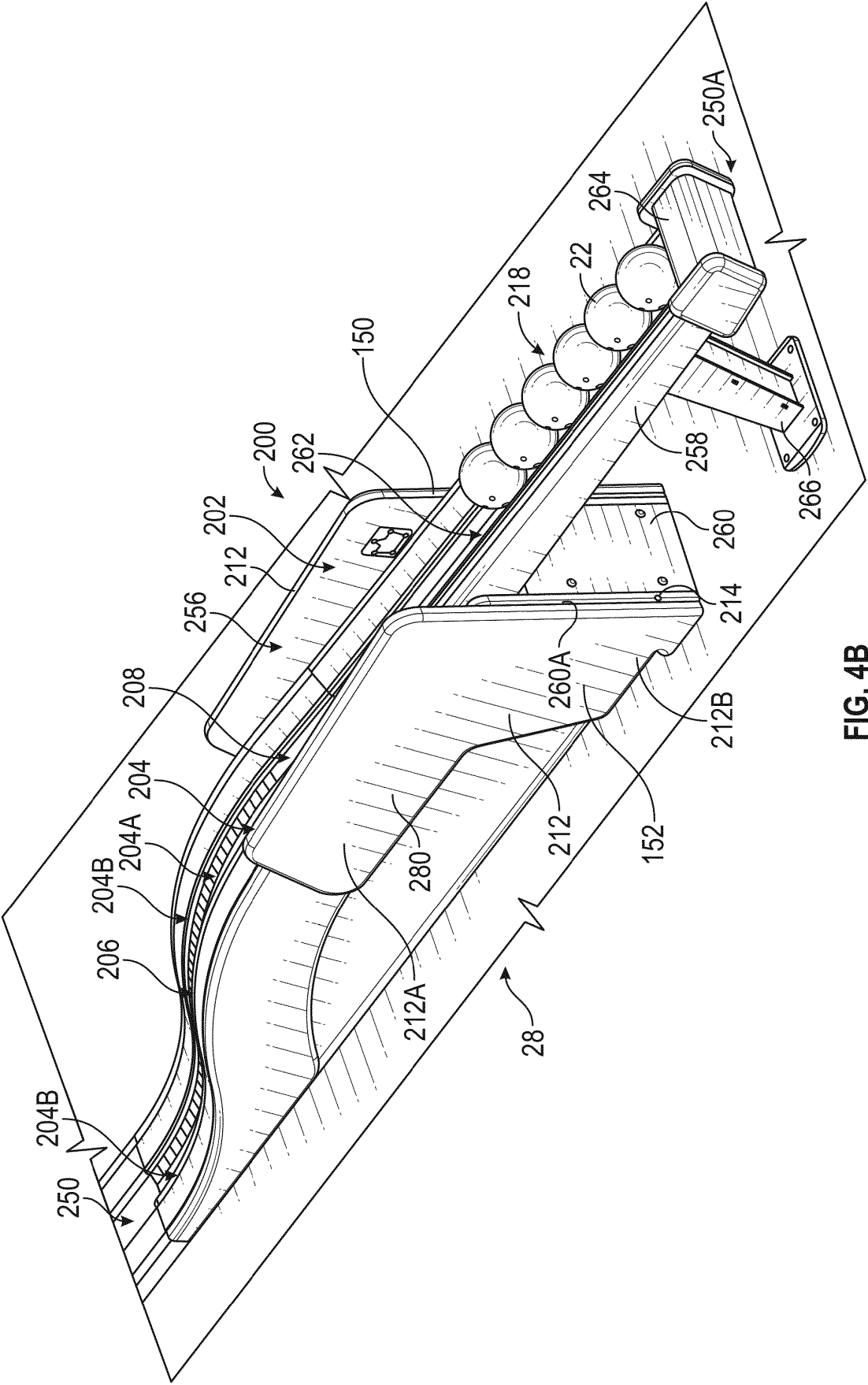


FIG. 4B

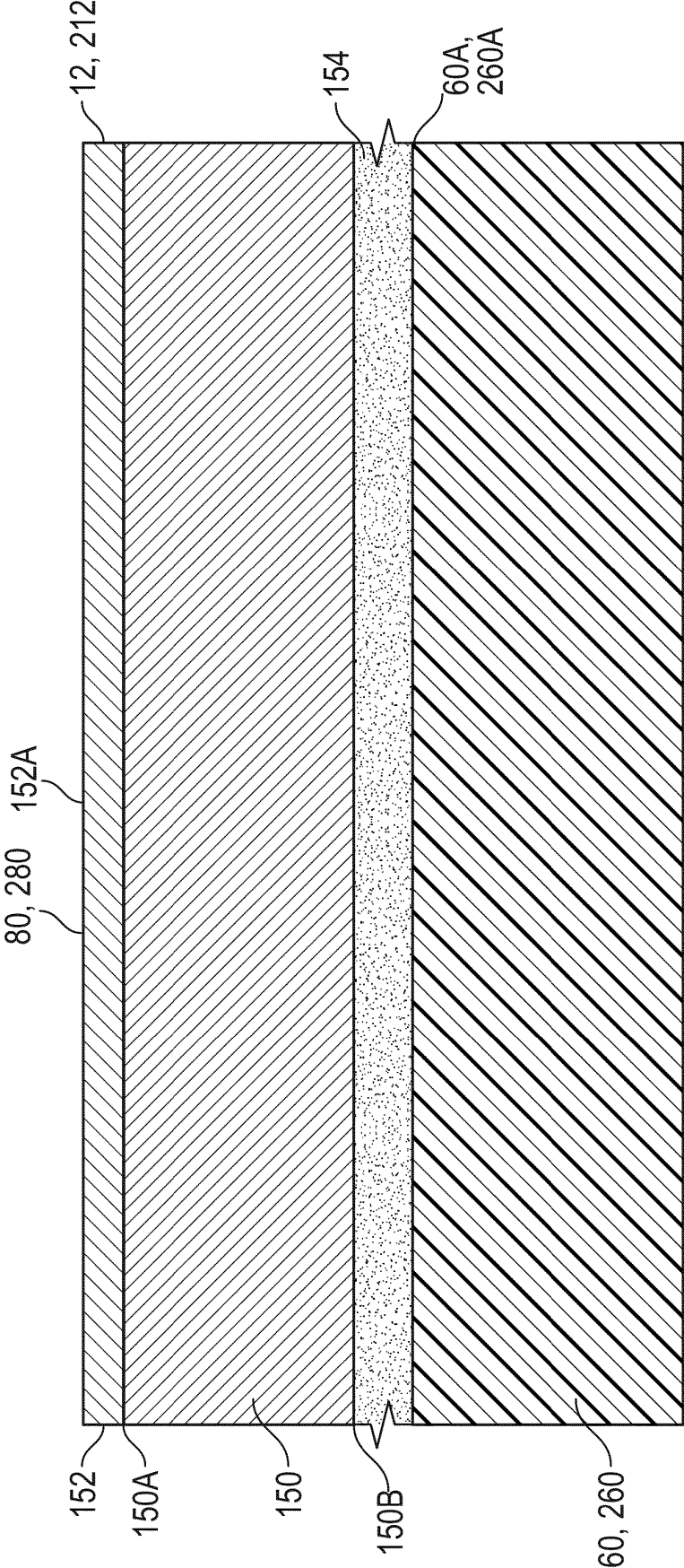


FIG. 5

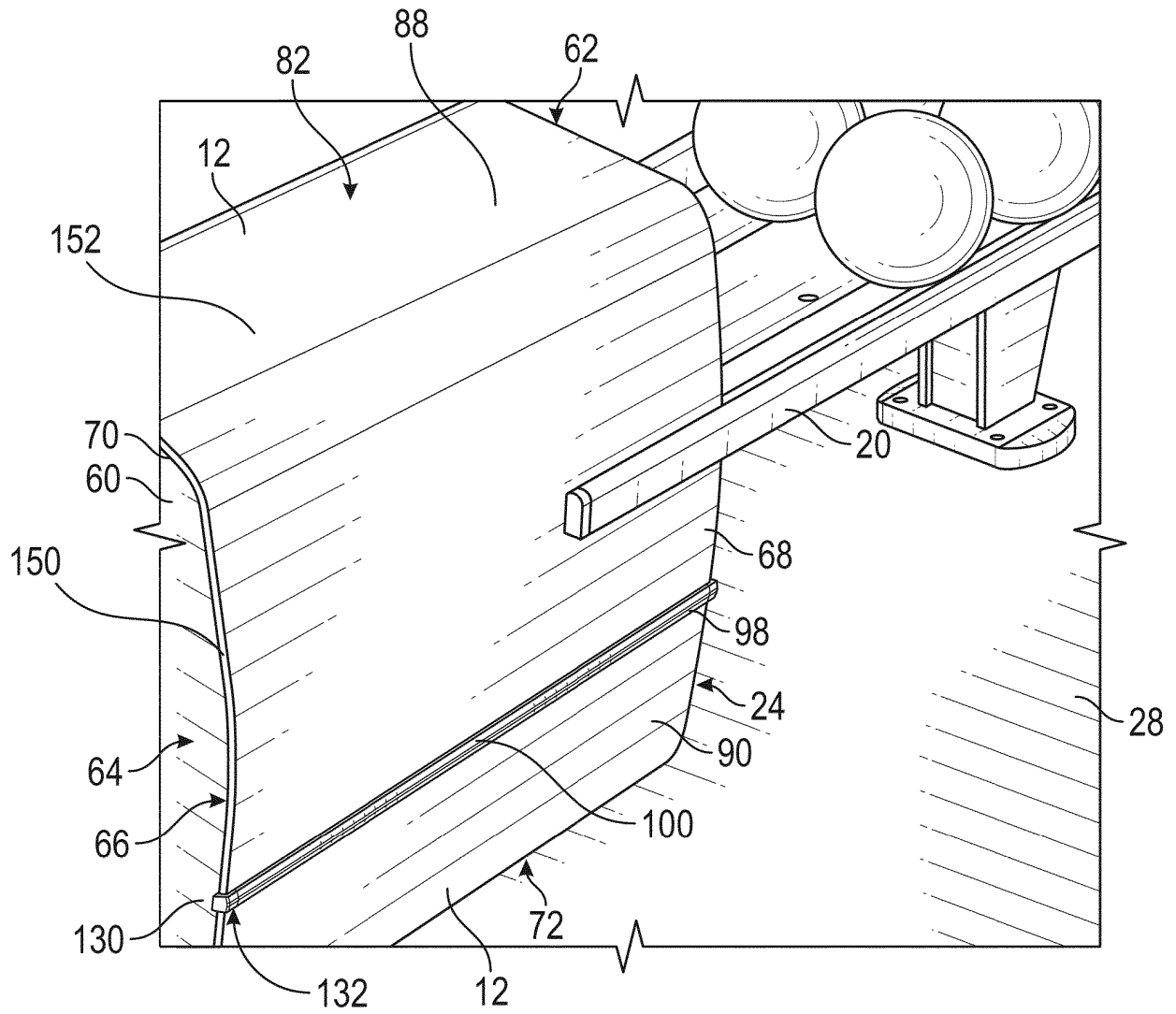


FIG. 6

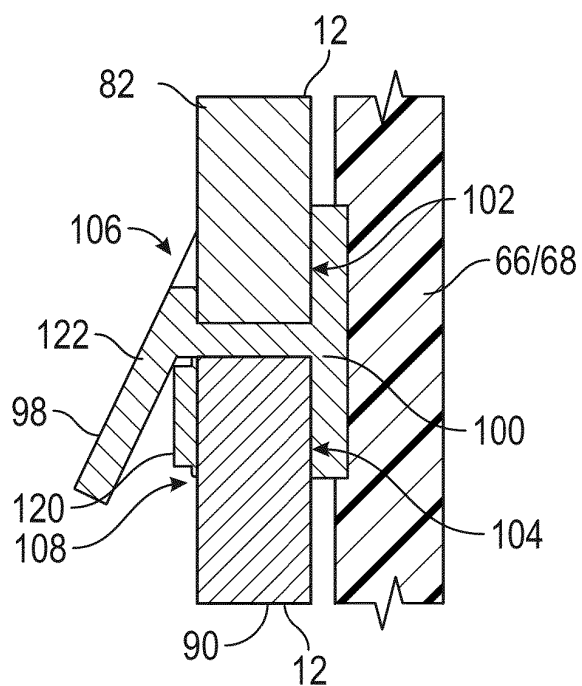


FIG. 7A

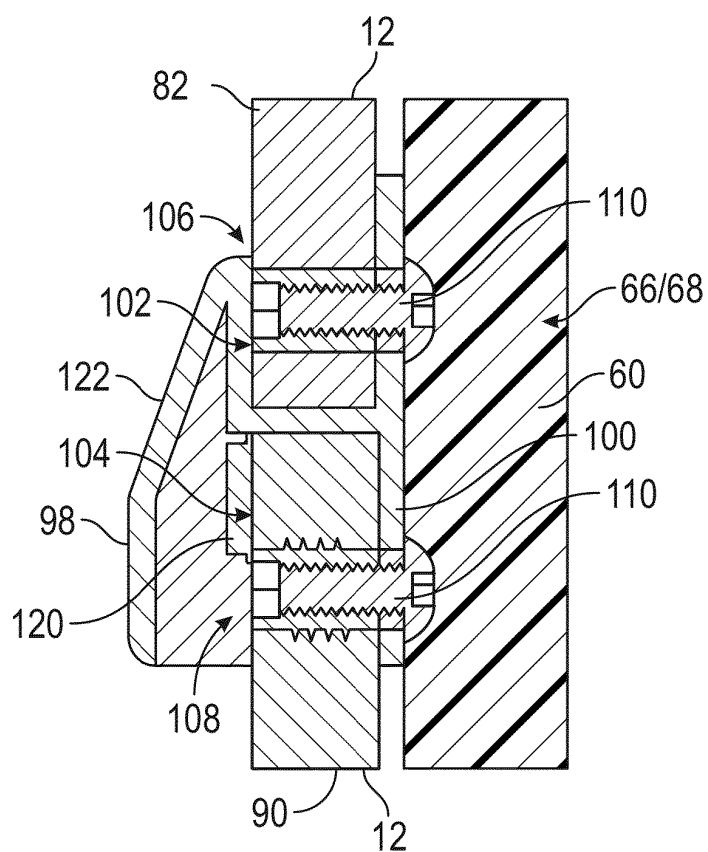


FIG. 7B

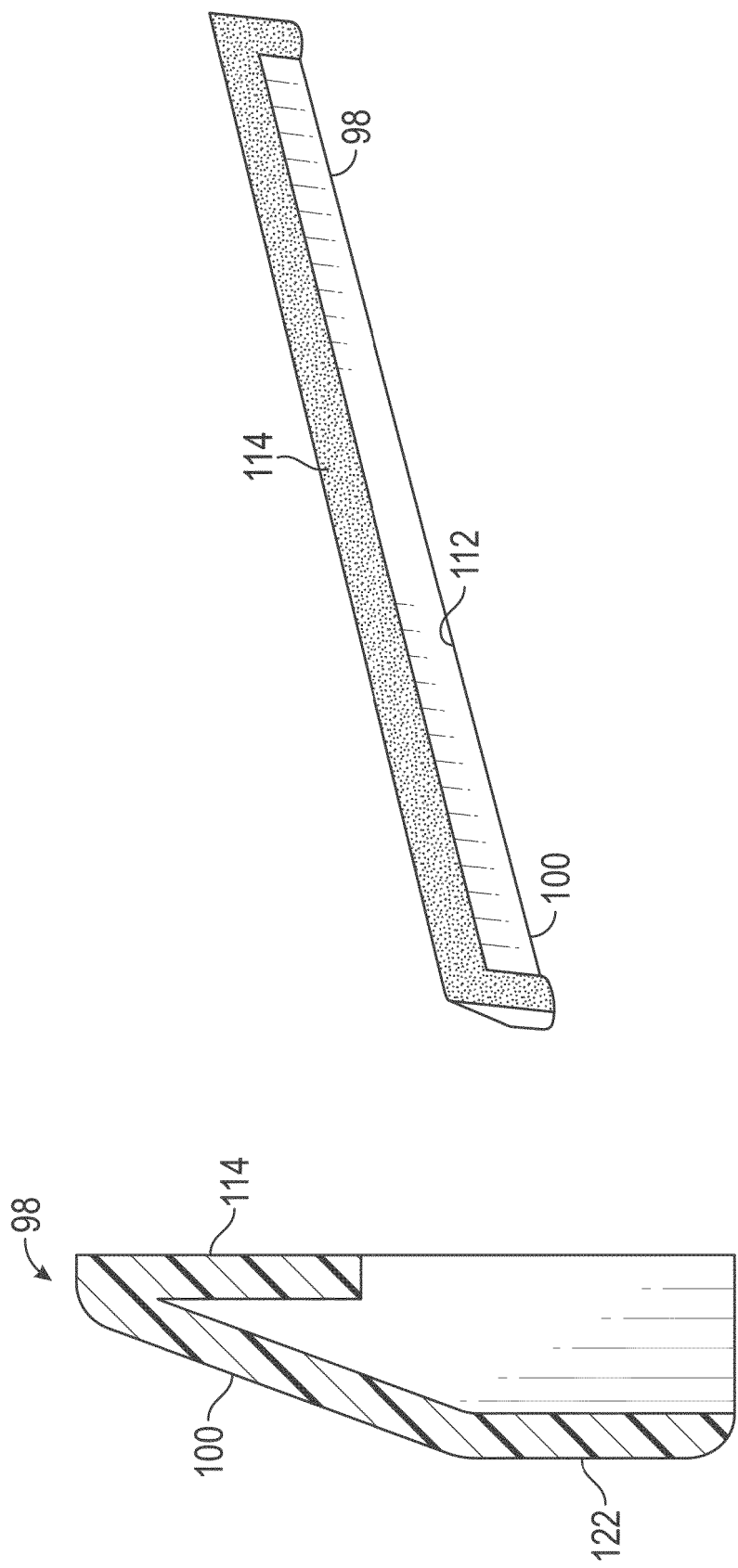


FIG. 8

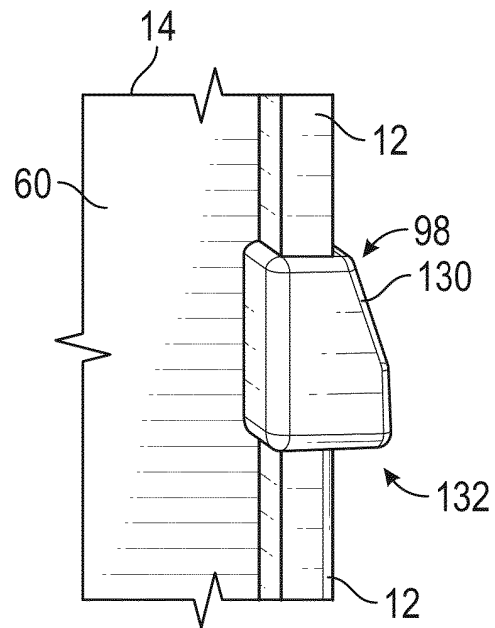


FIG. 9A

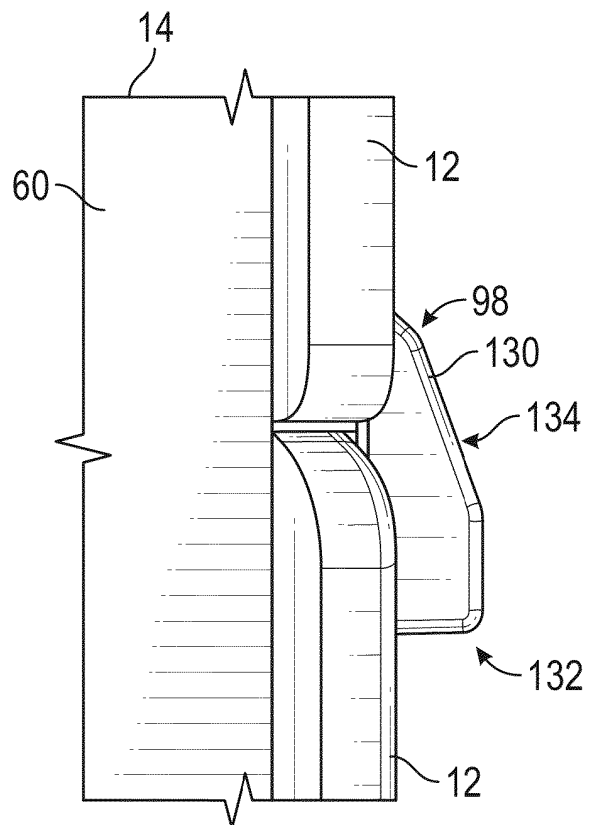


FIG. 9B

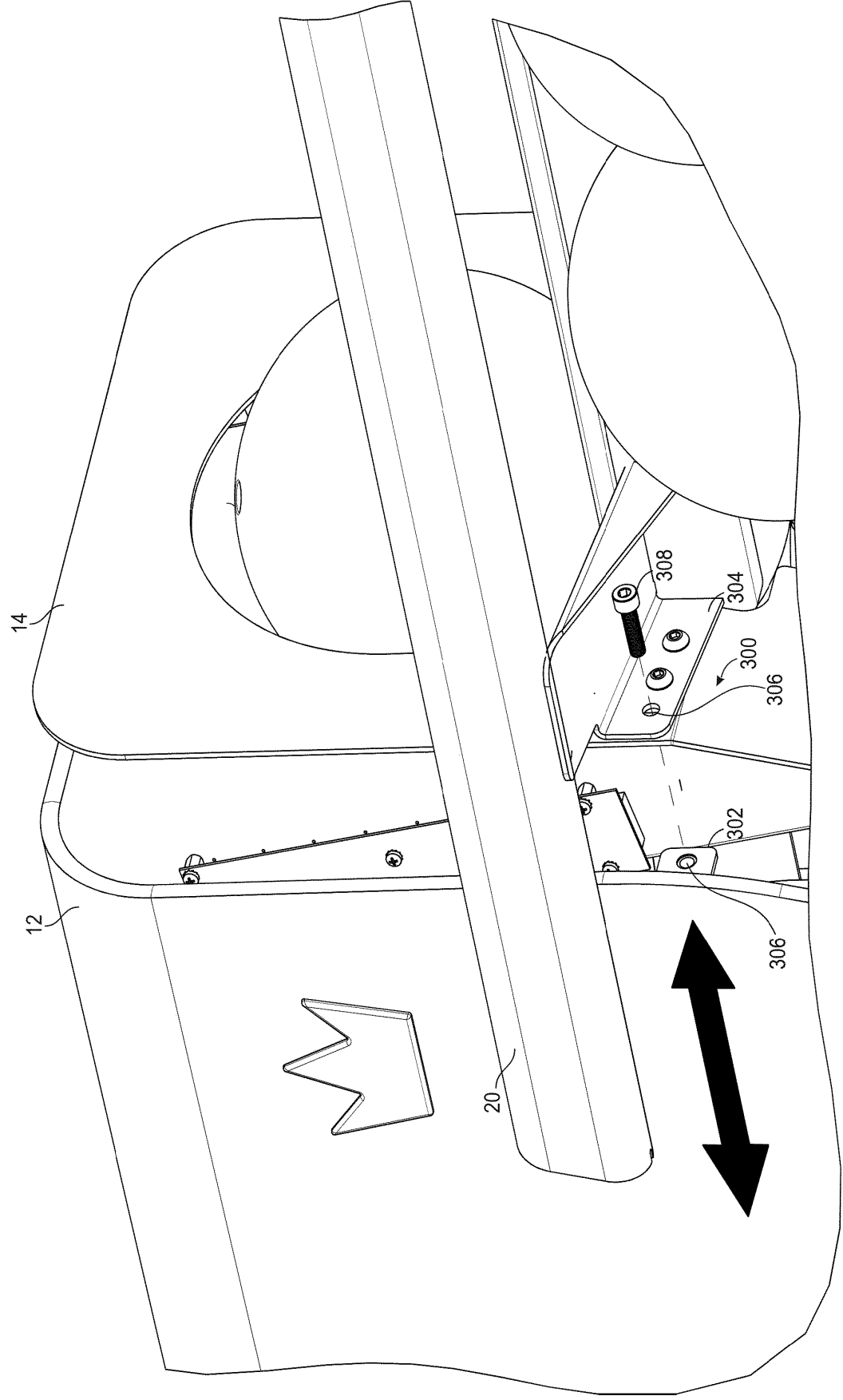


FIG. 10

REFERENCES CITED IN THE DESCRIPTION

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- US 684736 [0025]