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(12) **United States Patent**
Joseph

(10) **Patent No.: US 12,390,713 B1**
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(54) **BASKETBALL PASSING MACHINE WITH MULTI-USER FEATURES**

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(72) Inventor: **John G. Joseph**, Upper Sandusky, OH (US)

(73) Assignee: **Shoot-A-Way, Inc.**, Upper Sandusky, OH (US)

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Related U.S. Application Data

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(Continued)

(51) **Int. Cl.**
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(Continued)

(52) **U.S. Cl.**
CPC ***A63B 71/0622*** (2013.01); ***A63B 63/083*** (2013.01); ***A63B 69/0071*** (2013.01);
(Continued)

(58) **Field of Classification Search**
CPC . A63B 71/0622; A63B 69/0071; A63B 69/40; A63B 71/0605; A63B 2071/0647; A63B 2071/0694; A63B 2210/50; A63B 2220/62; A63B 2220/807; A63B 2225/093; A63B 2225/20; A63B 2230/06; G06F 3/04817; G06F 3/0482
See application file for complete search history.

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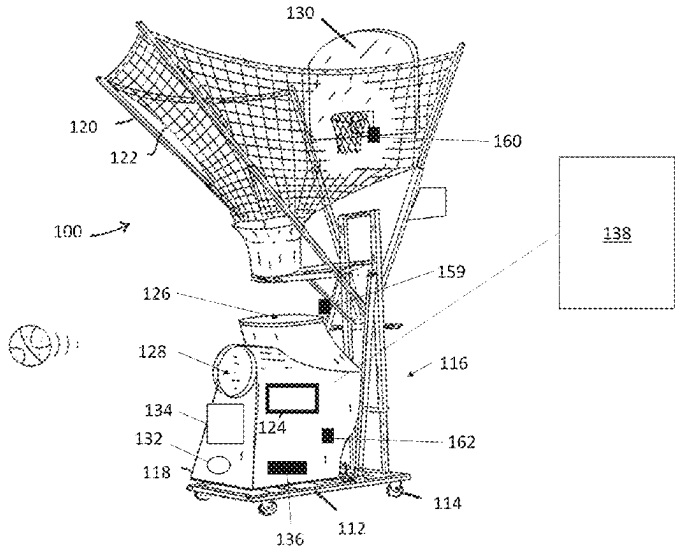
Primary Examiner — Malina D. Blaise
(74) *Attorney, Agent, or Firm* — Standley Law Group LLP; Jeffrey S. Standley; Adam J. Smith

(57) **ABSTRACT**

A basketball passing machine providing a multi-user mode and related systems and methods are provided. A controller receives programming information for a basketball practice drill including participant information for multiple users. Based on the programming information received, each pass in the basketball practice drill is associated with a respective one of the multiple users. A launching device passes basketballs to locations at a basketball playing area, and participant information is displayed at the front display for an associated one of the users for a respective one of the passes.

22 Claims, 23 Drawing Sheets



Related U.S. Application Data

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(51) **Int. Cl.**

A63B 69/00	(2006.01)
A63B 69/40	(2006.01)
A63B 71/02	(2006.01)
A63B 63/00	(2006.01)
H04L 67/12	(2022.01)

(52) **U.S. Cl.**

CPC ***A63B 69/40*** (2013.01); ***A63B 71/03*** (2020.08); ***A63B 71/0605*** (2013.01); *A63B 2063/001* (2013.01); *A63B 2071/0675* (2013.01); *A63B 2071/0694* (2013.01); *A63B 2210/50* (2013.01); *A63B 2214/00* (2020.08); *A63B 2220/807* (2013.01); *A63B 2225/093* (2013.01); *H04L 67/12* (2013.01)

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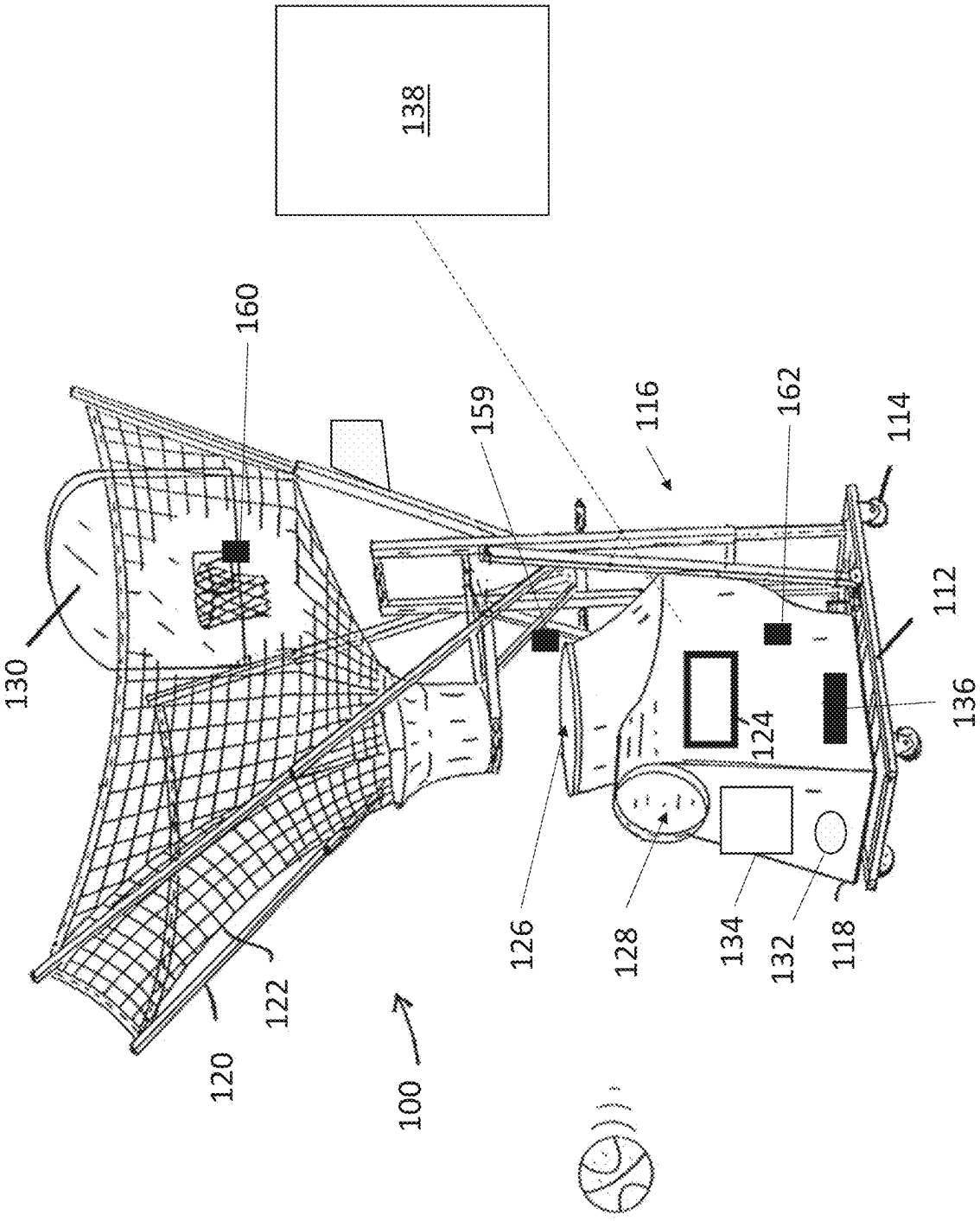
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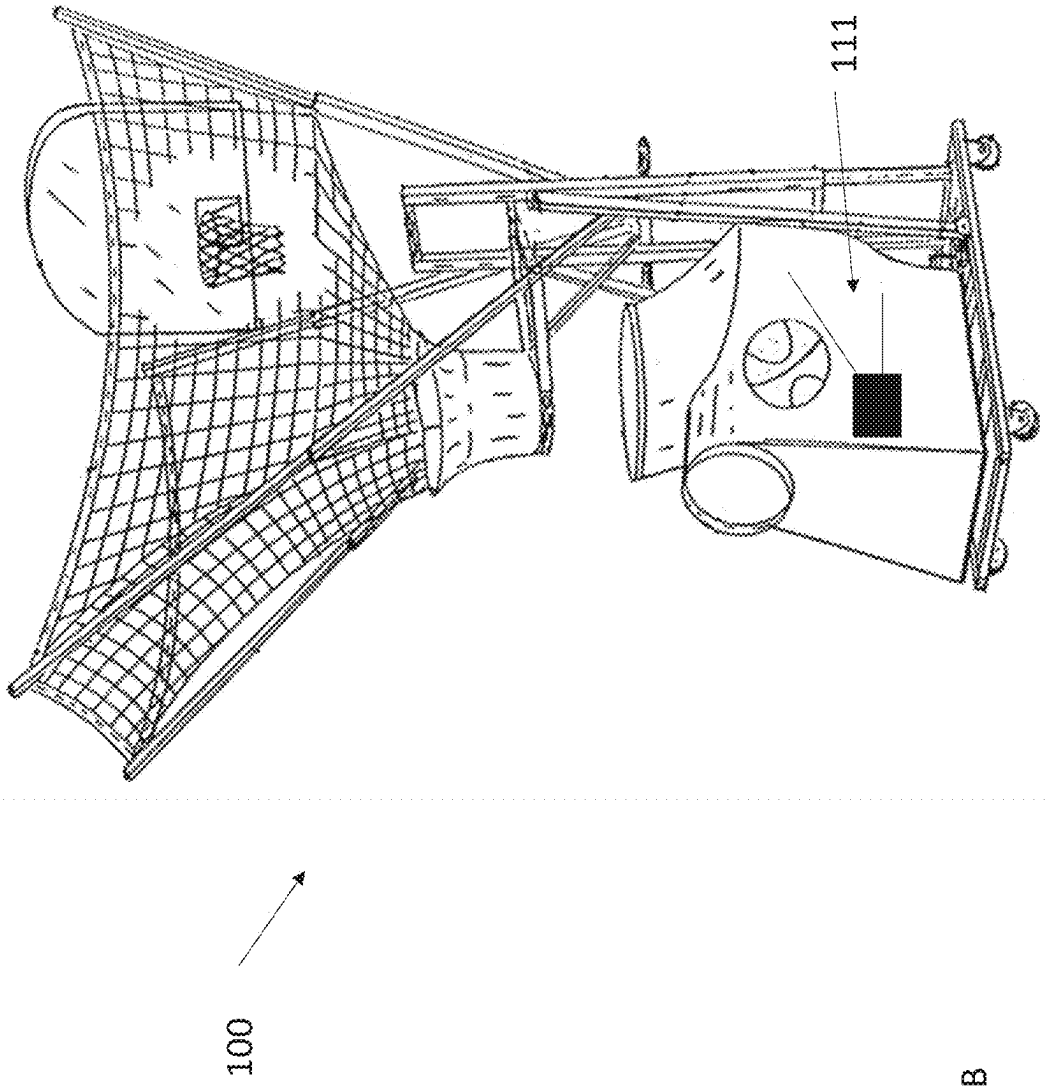
Figure 1A



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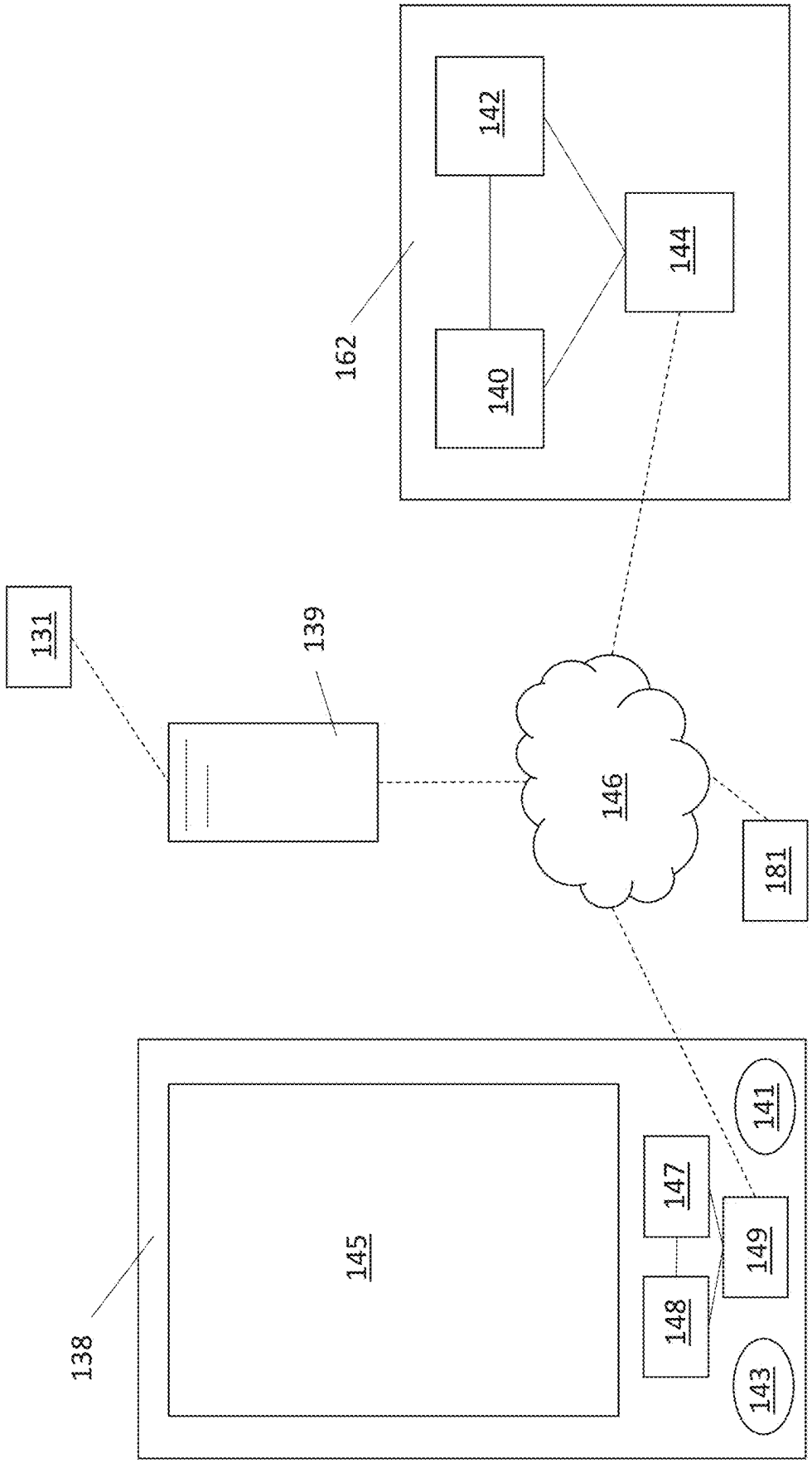

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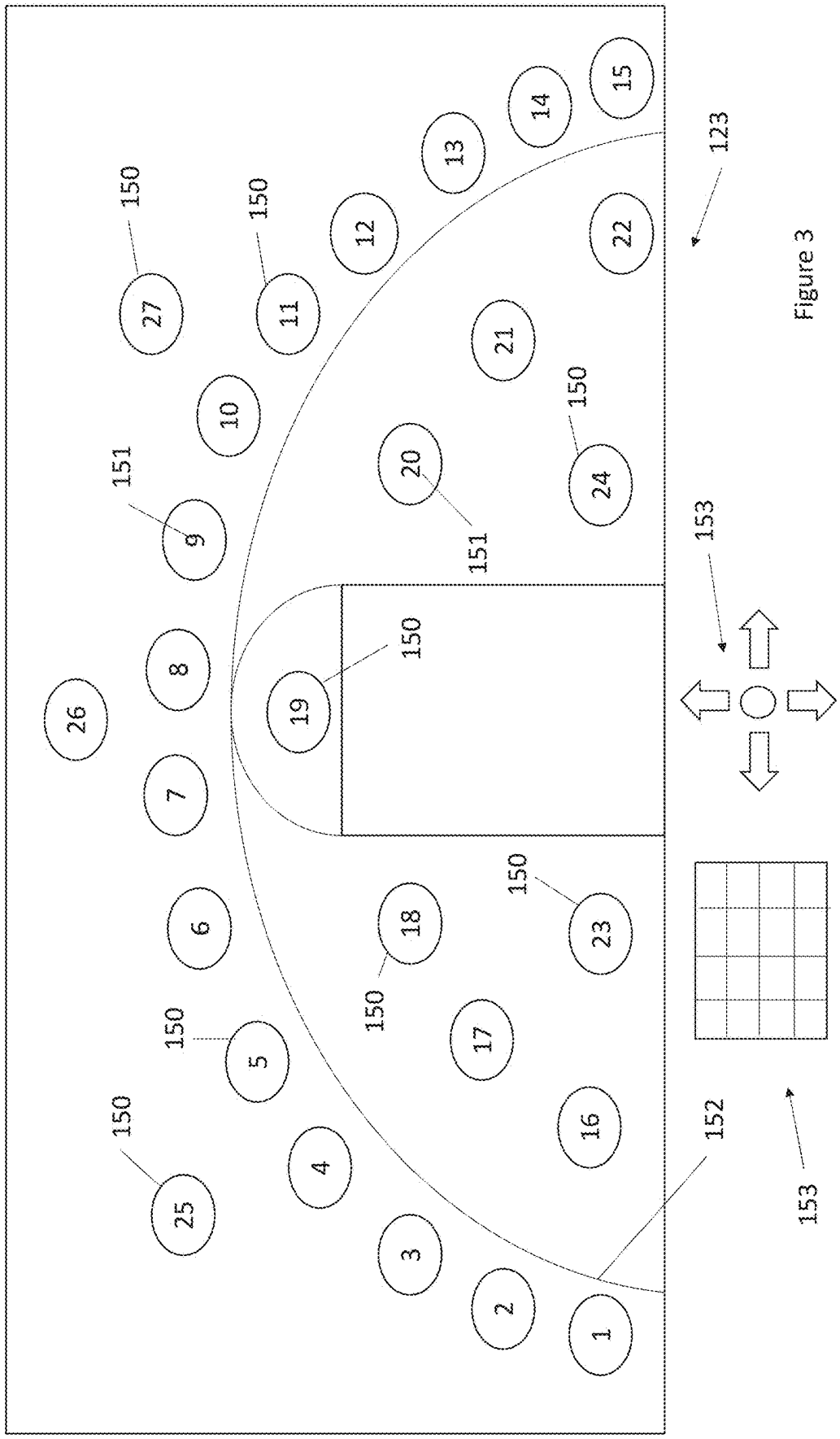
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Figure 3

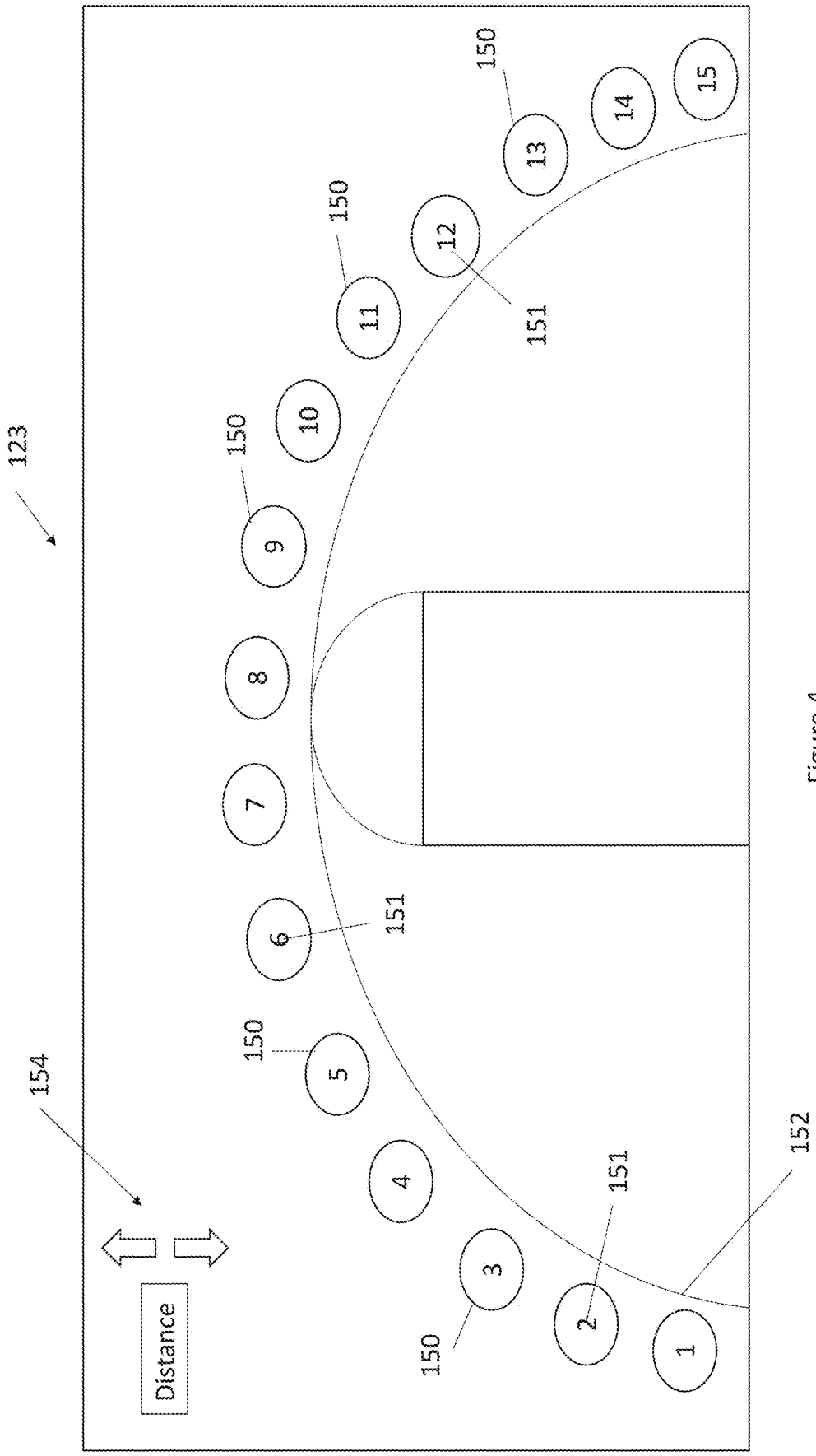

Figure 4

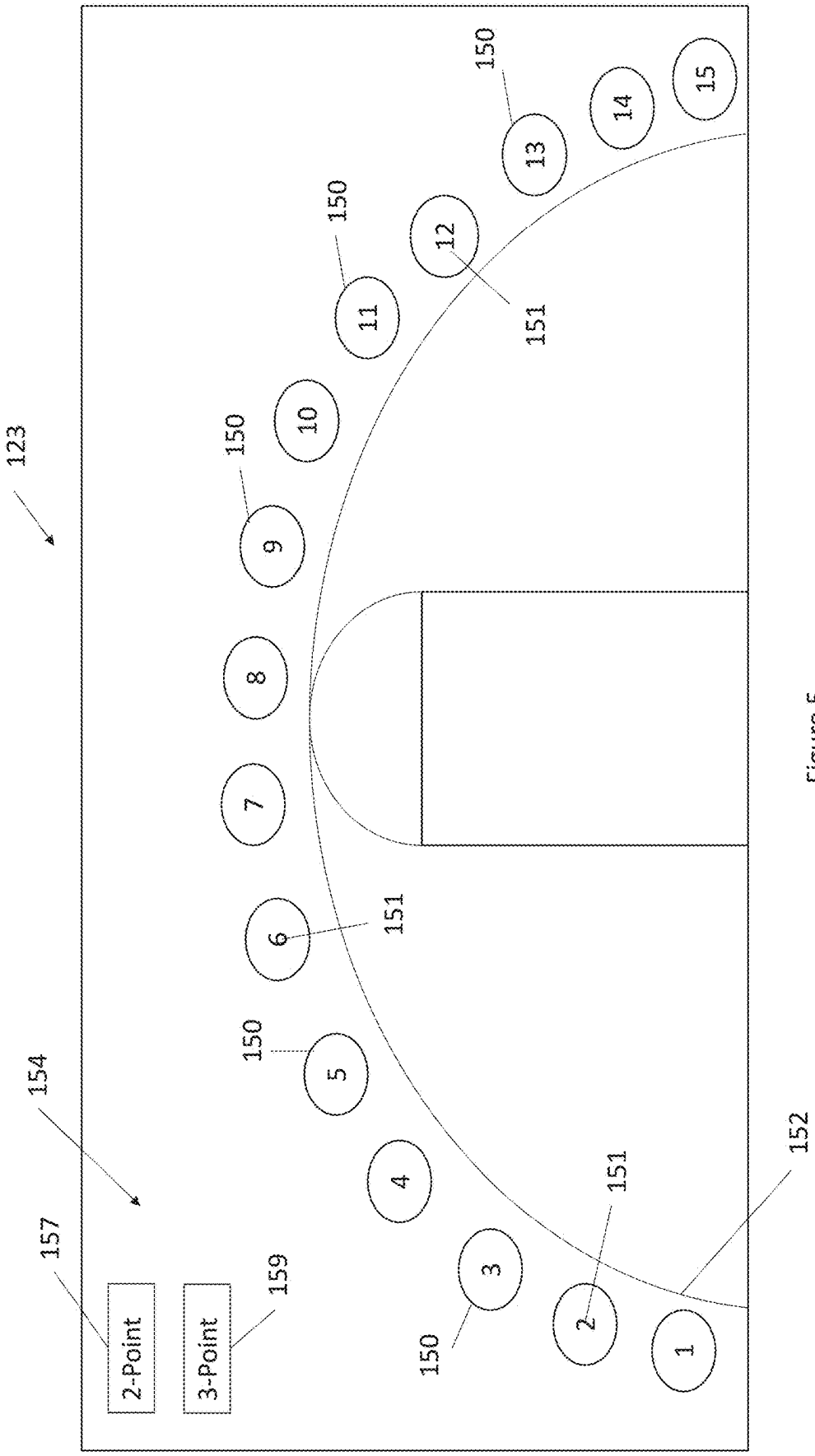
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Figure 5

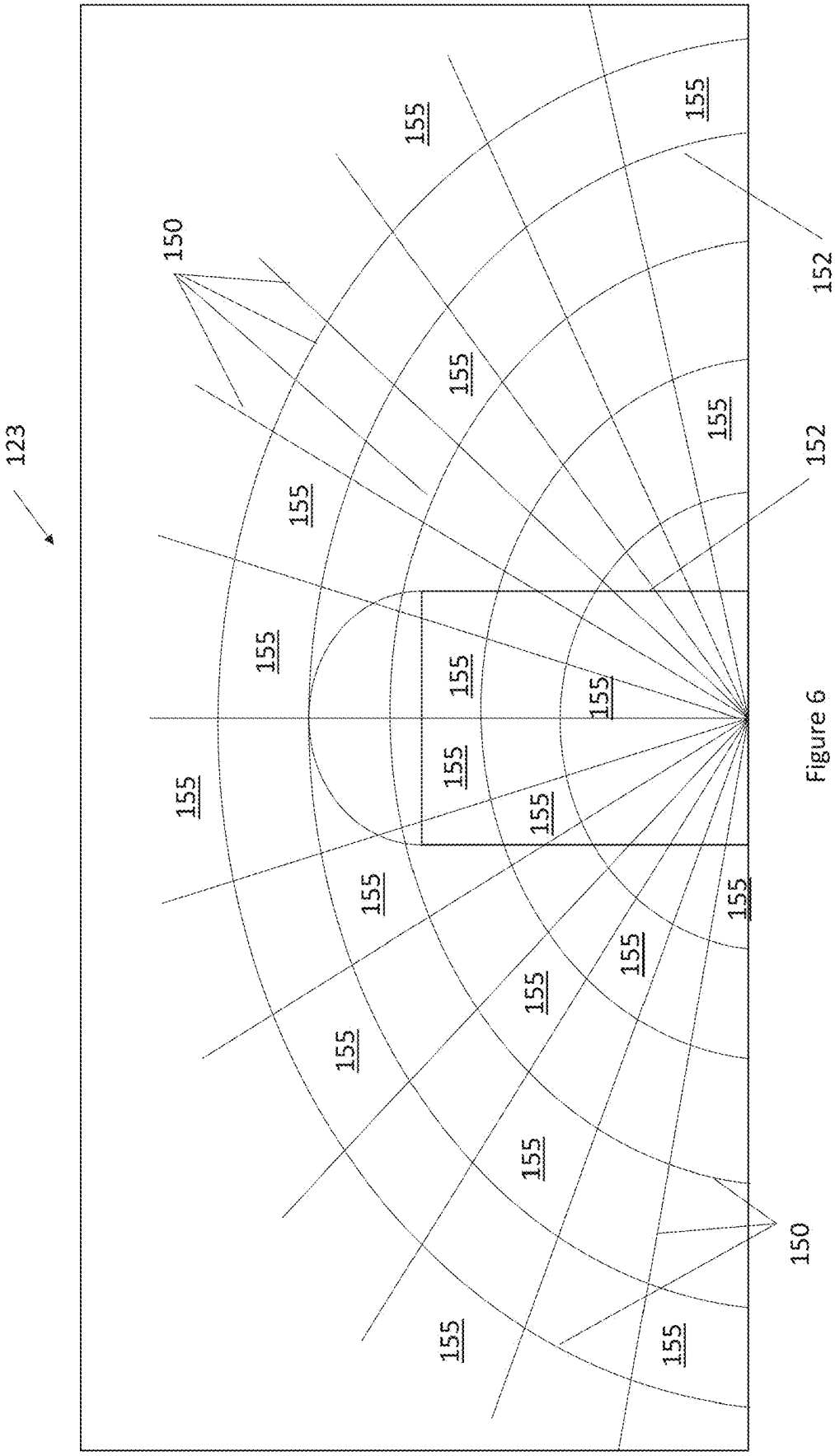

Figure 6

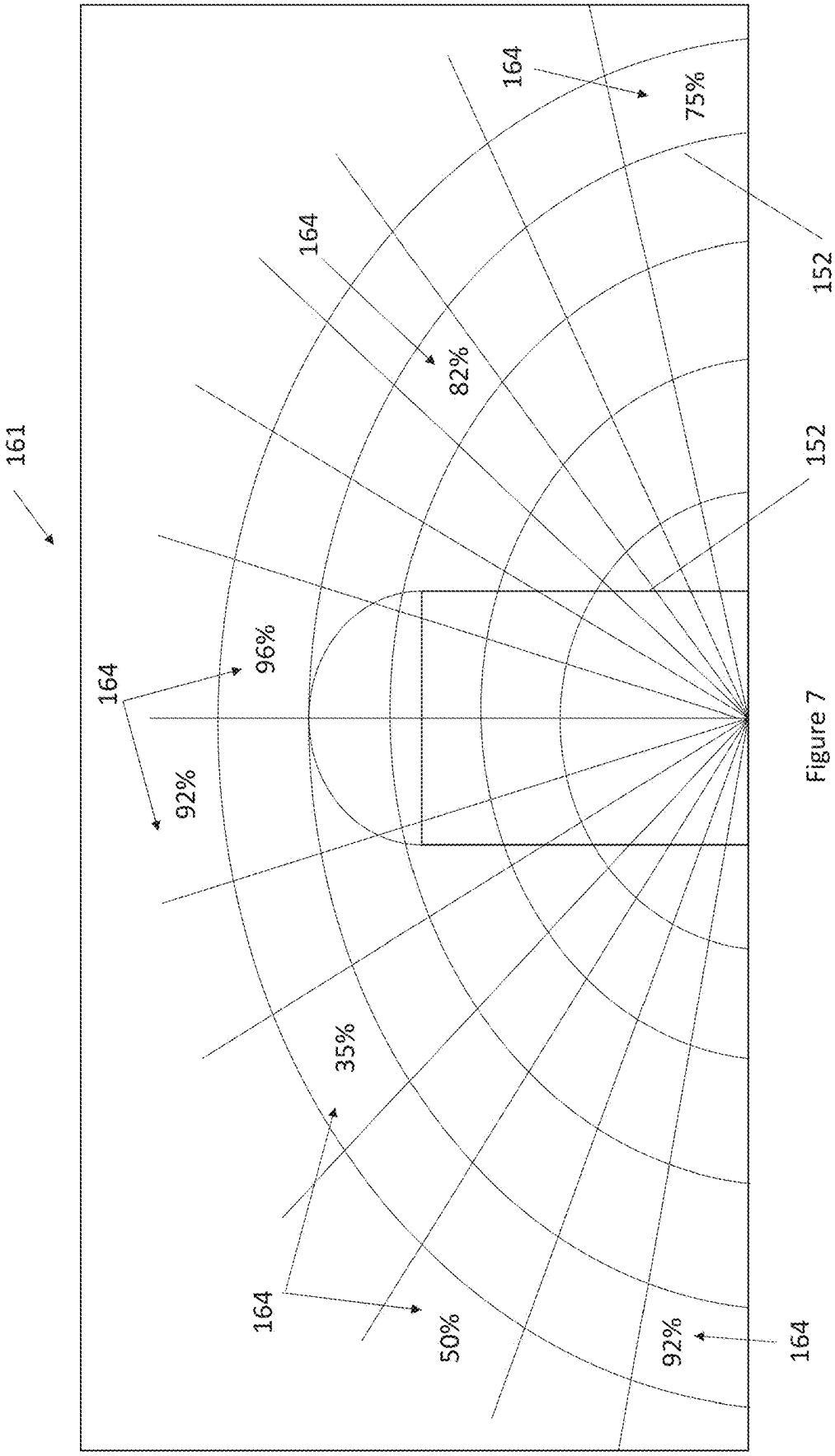

Figure 7

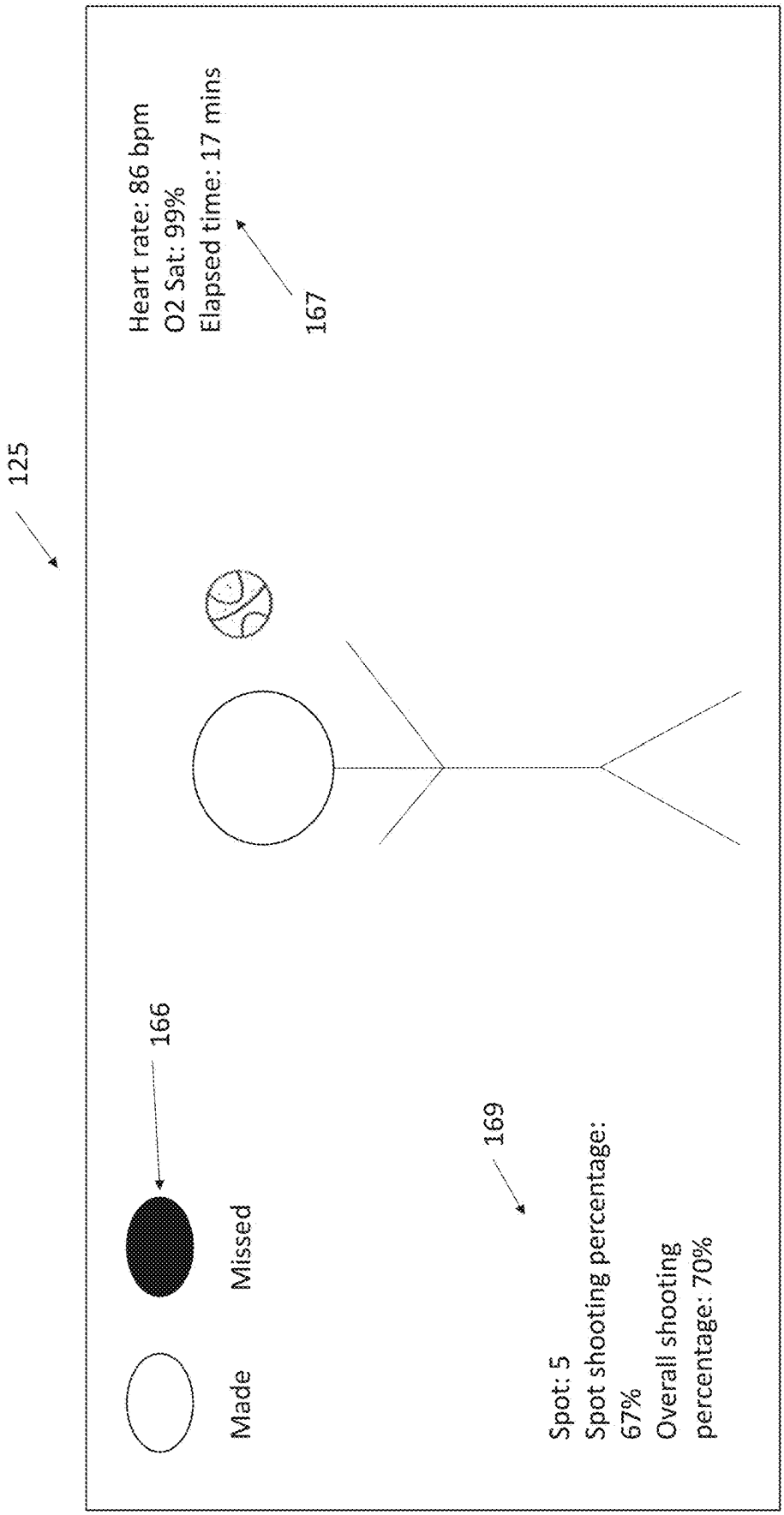
125
Heart rate: 86 bpm
O2 Sat: 99%
Elapsed time: 17 mins
167
166
Made
Missed
169
Spot: 5
Spot shooting percentage: 67%
Overall shooting percentage: 70%

Figure 8

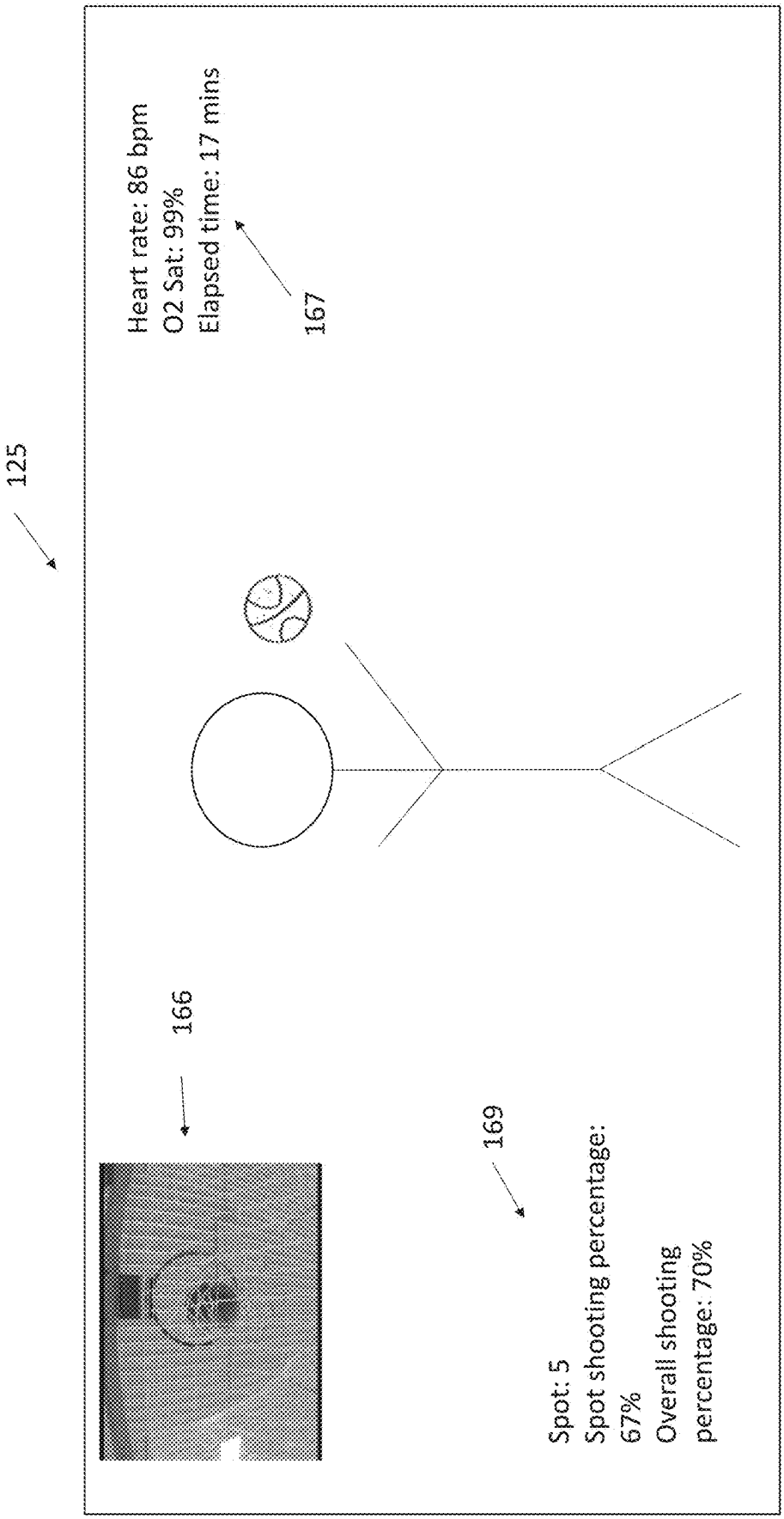
125
Heart rate: 86 bpm
O2 Sat: 99%
Elapsed time: 17 mins
167
166
169
Spot: 5
Spot shooting percentage: 67%
Overall shooting percentage: 70%

Figure 8B

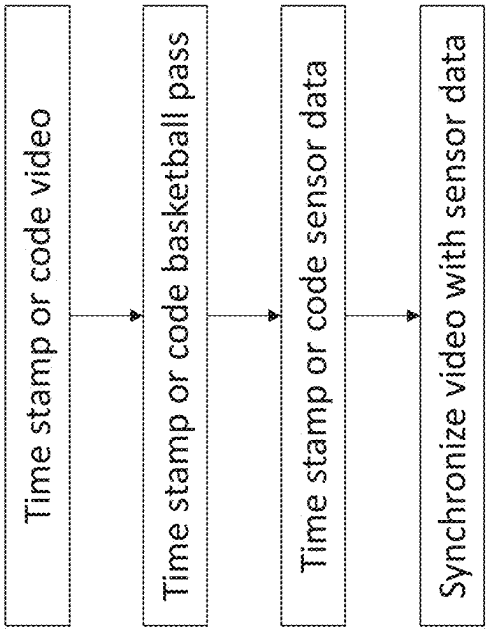
Time stamp or code video
Time stamp or code basketball pass
Time stamp or code sensor data
Synchronize video with sensor data

Figure 9

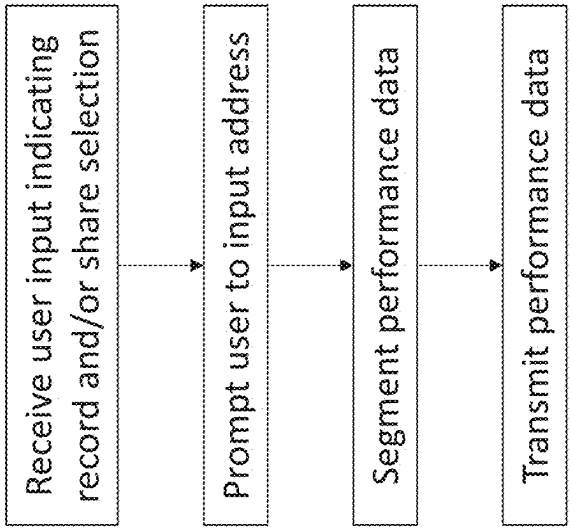
Receive user input indicating record and/or share selection
Prompt user to input address
Segment performance data
Transmit performance data

Figure 10

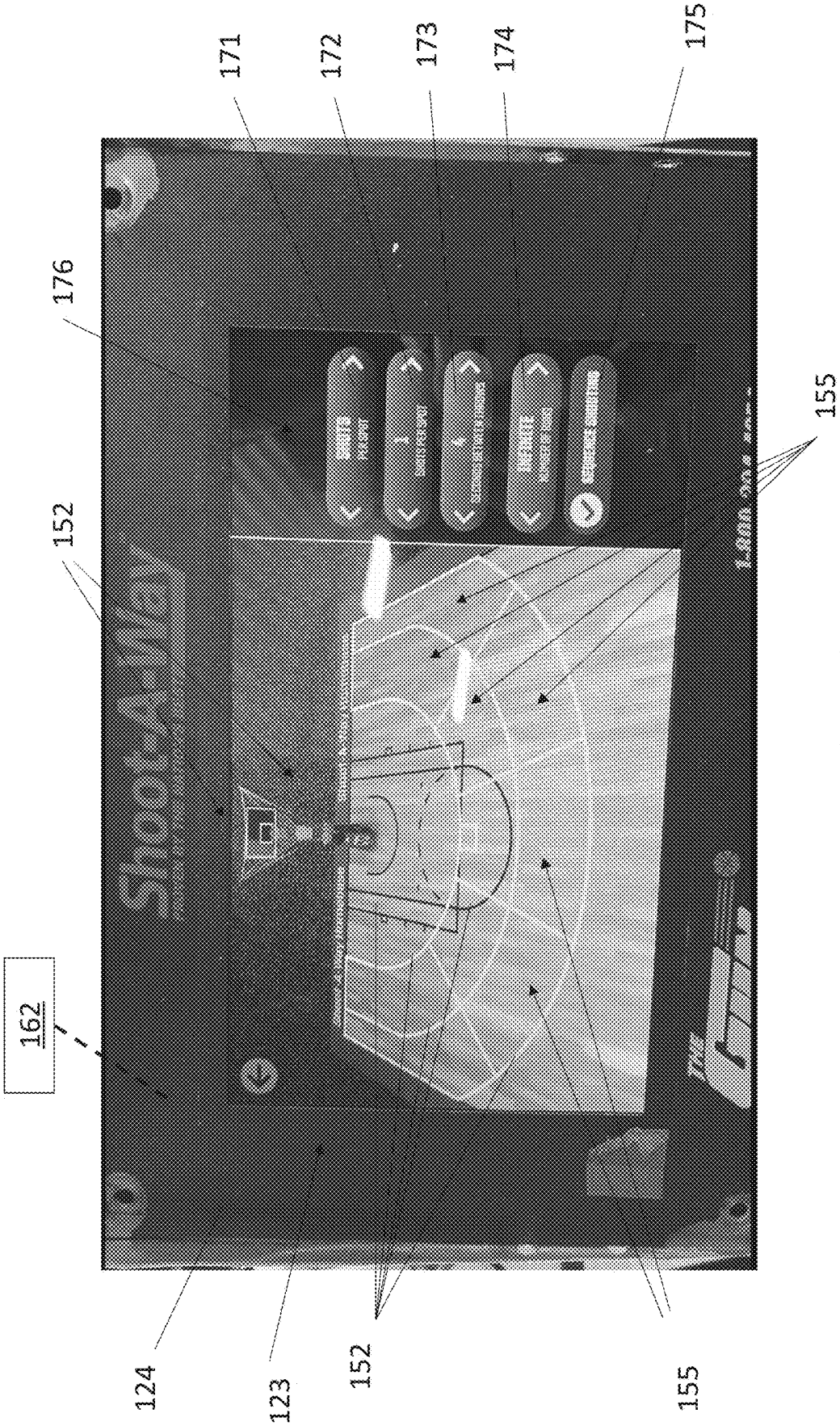

Figure 11

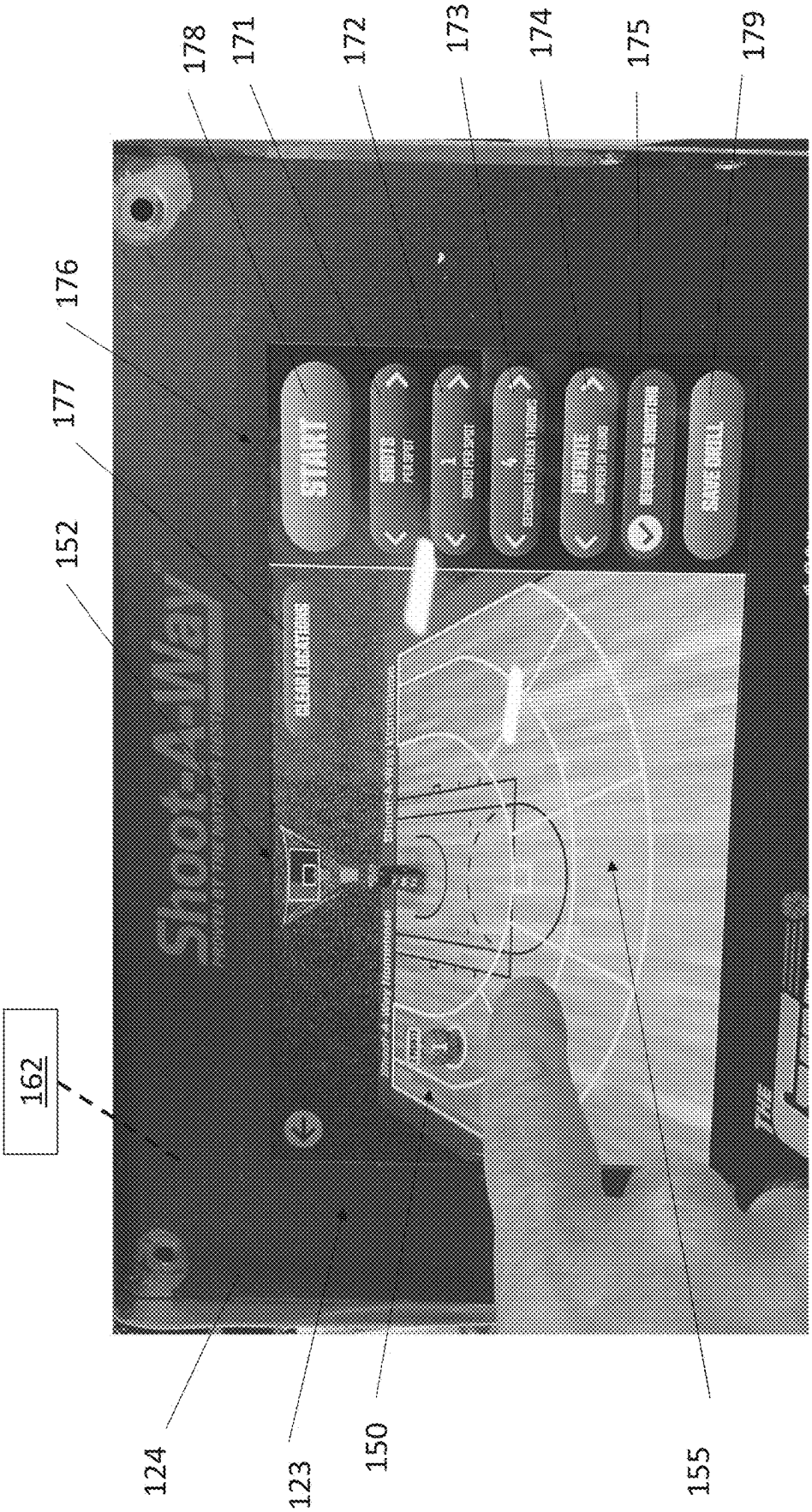

Figure 12

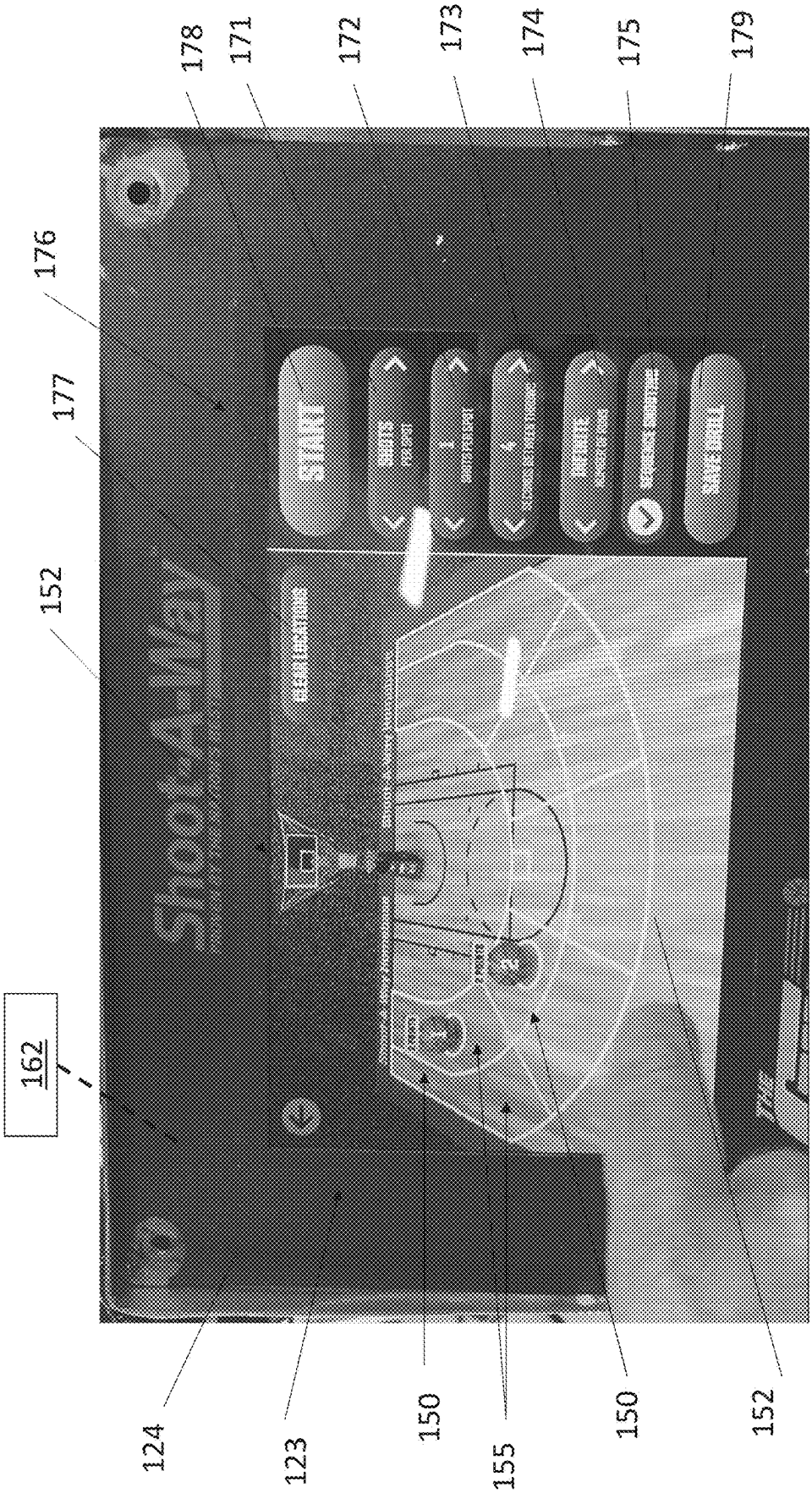
162
124
123
150
155
150
152
152
176
177
178
171
172
173
174
175
179
START

Figure 13

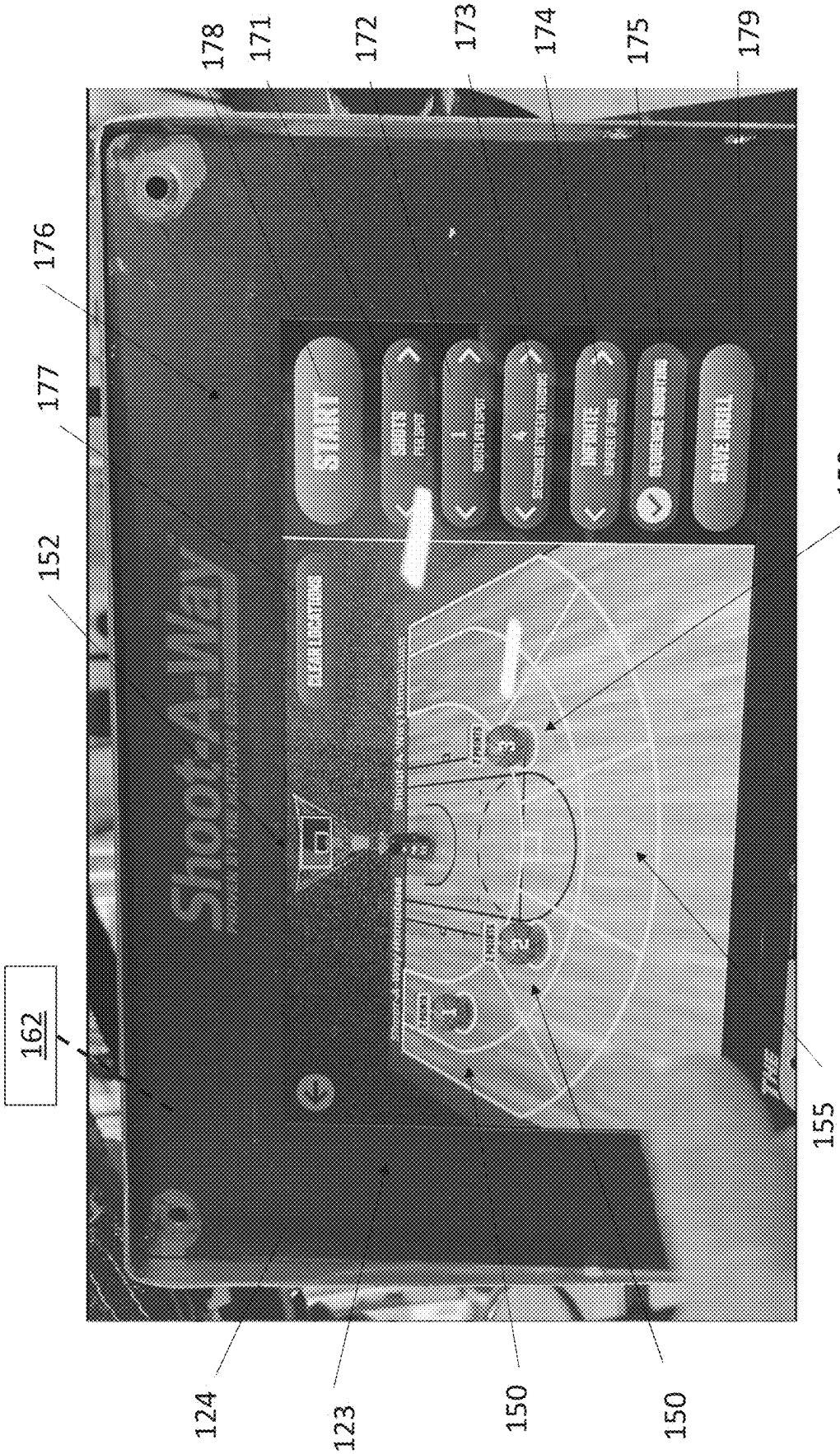
178
171
172
173
174
175
179
176
177
152
162
START
150
155
124
123
150
150

Figure 14

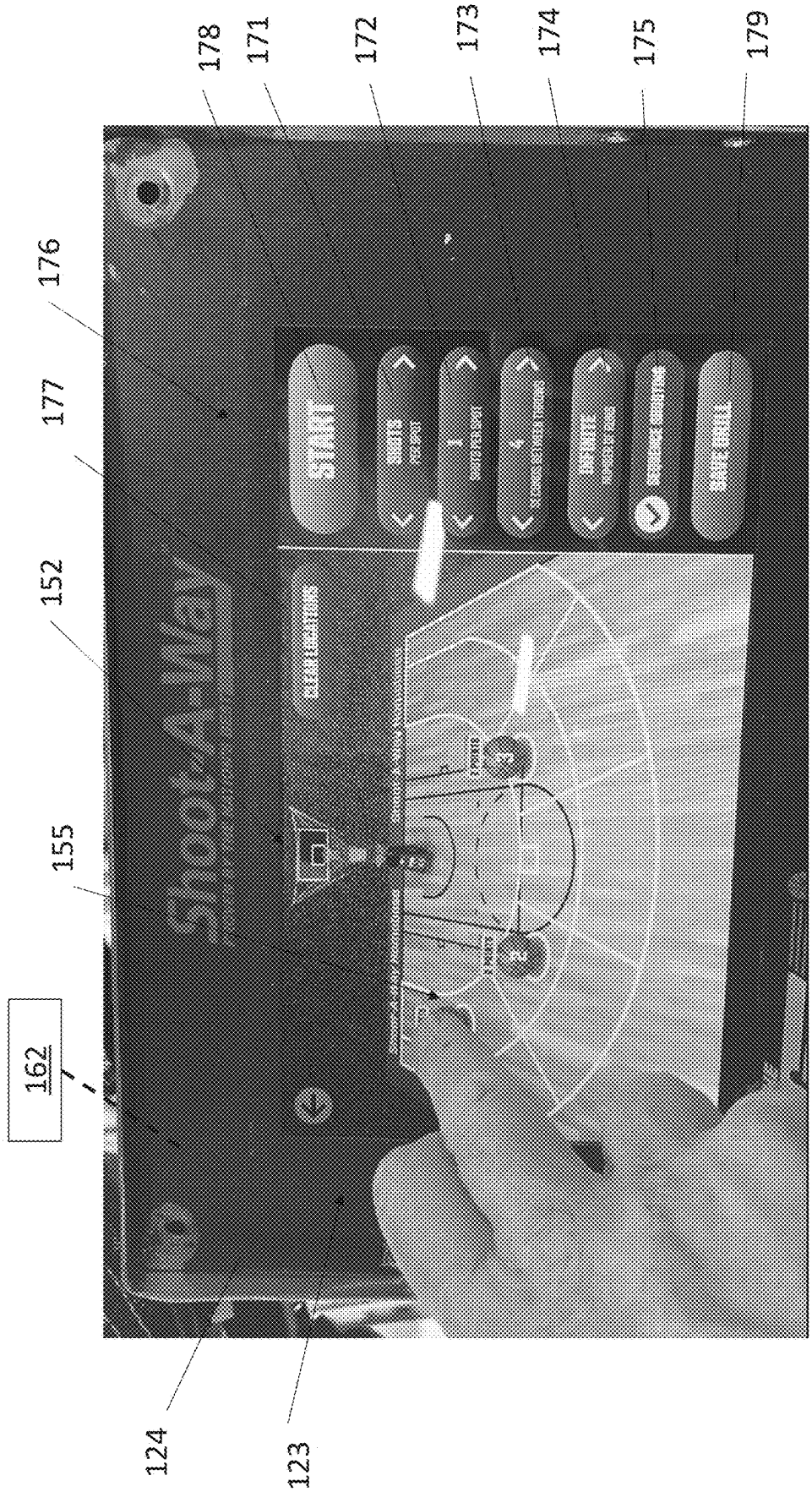
178
171
172
173
174
175
179
176
177
152
155
162
124
123
START
SAVE TIMES

Figure 15

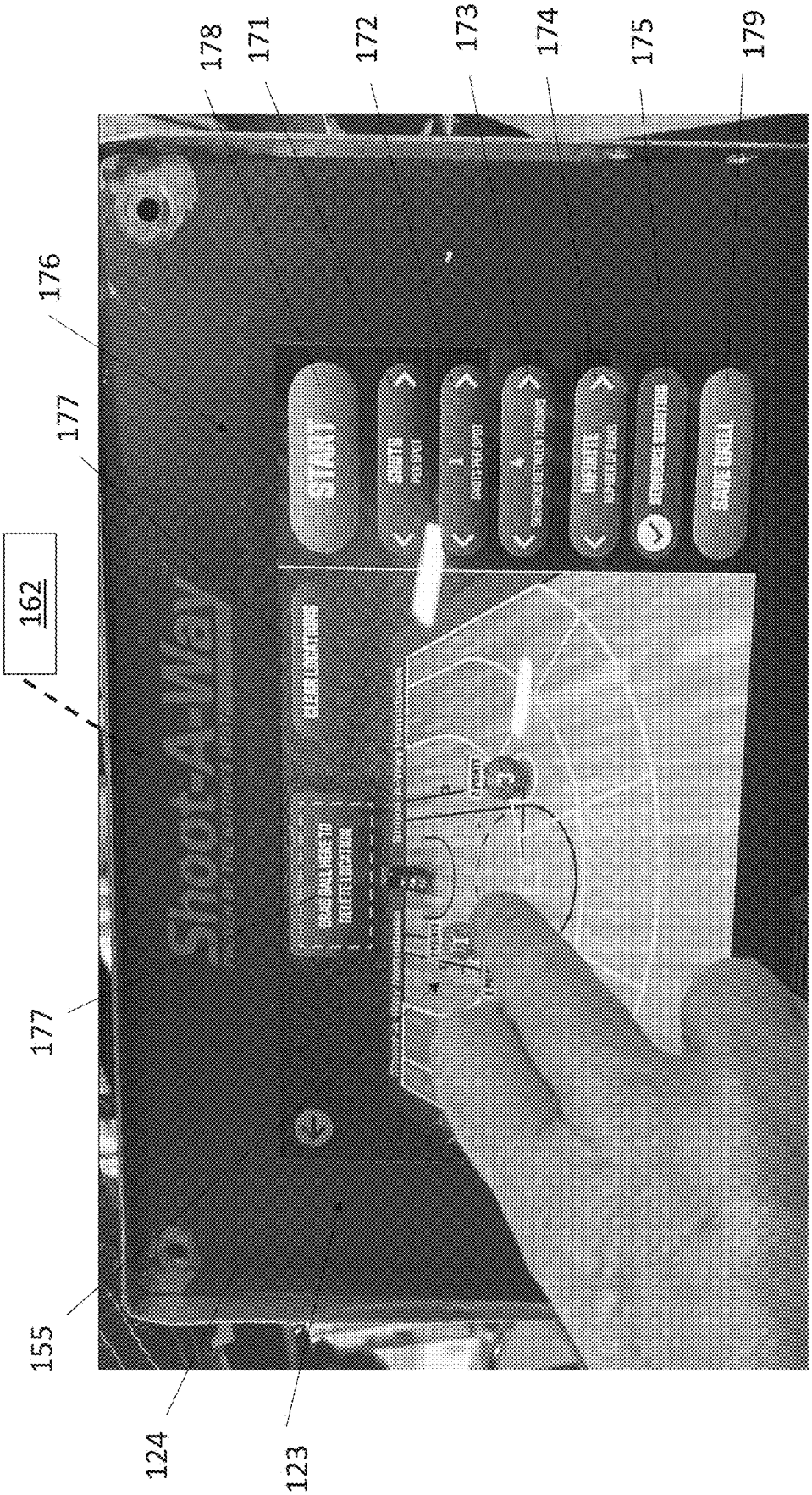

Figure 16

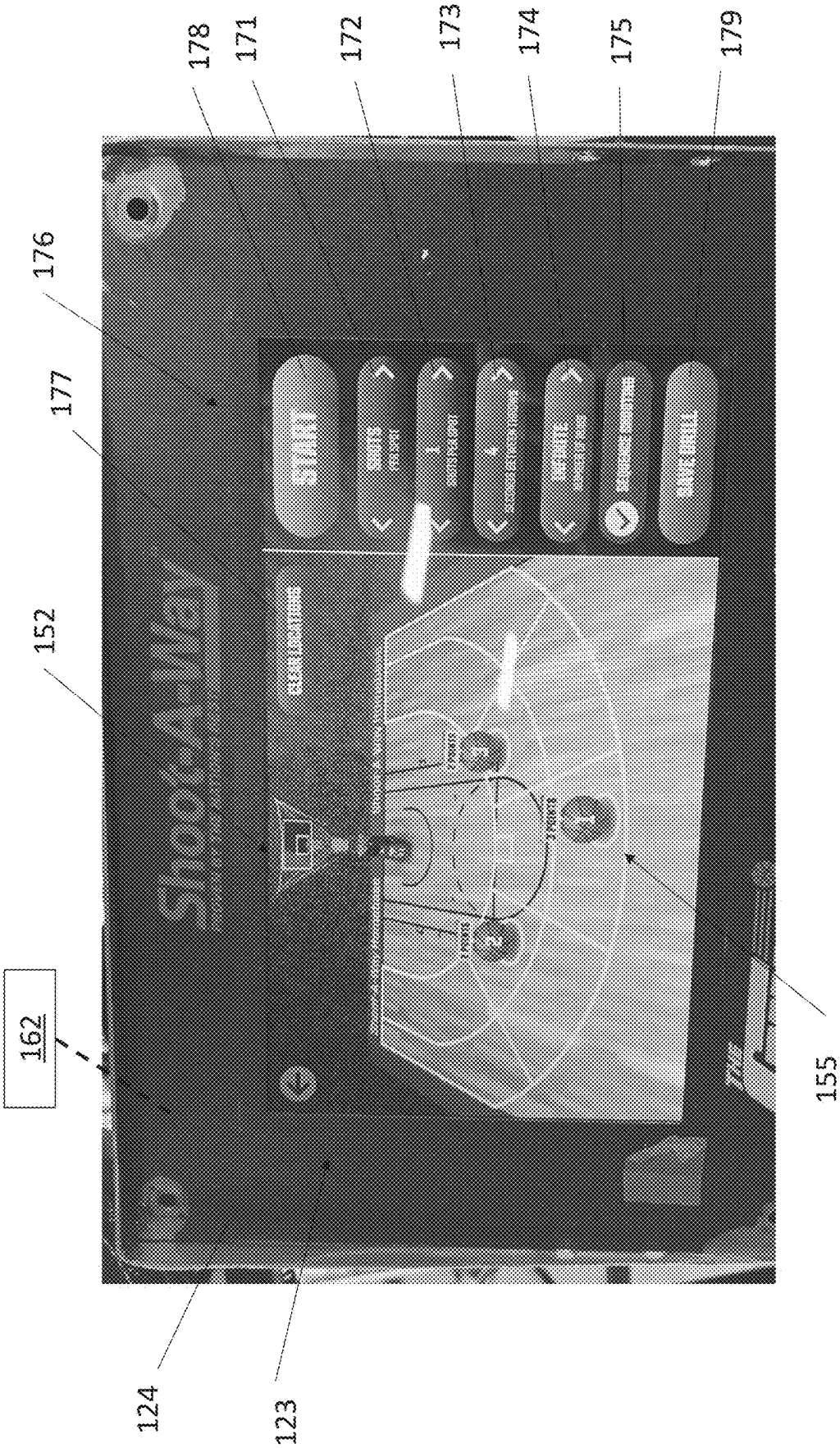
178
171
172
173
174
175
179
176
177
152
162
155
124
123
START
STOP
LAUNCH
LAUNCH
TRACK
TRACK
TRACK
TRACK

Figure 17

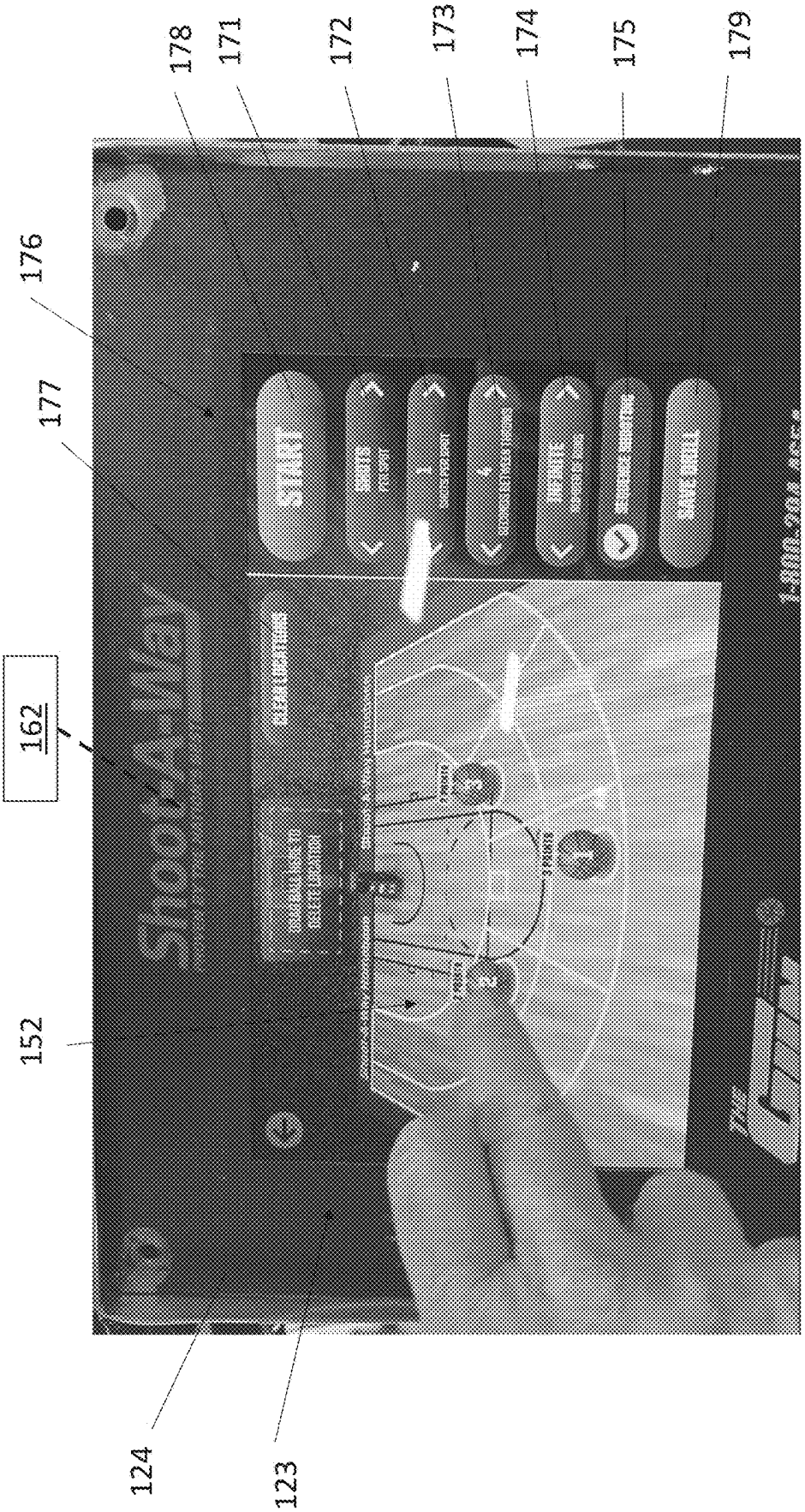
178
171
172
173
174
175
179
176
177
162
152
124
123
START
STOP
SAVE
DELETE

Figure 18

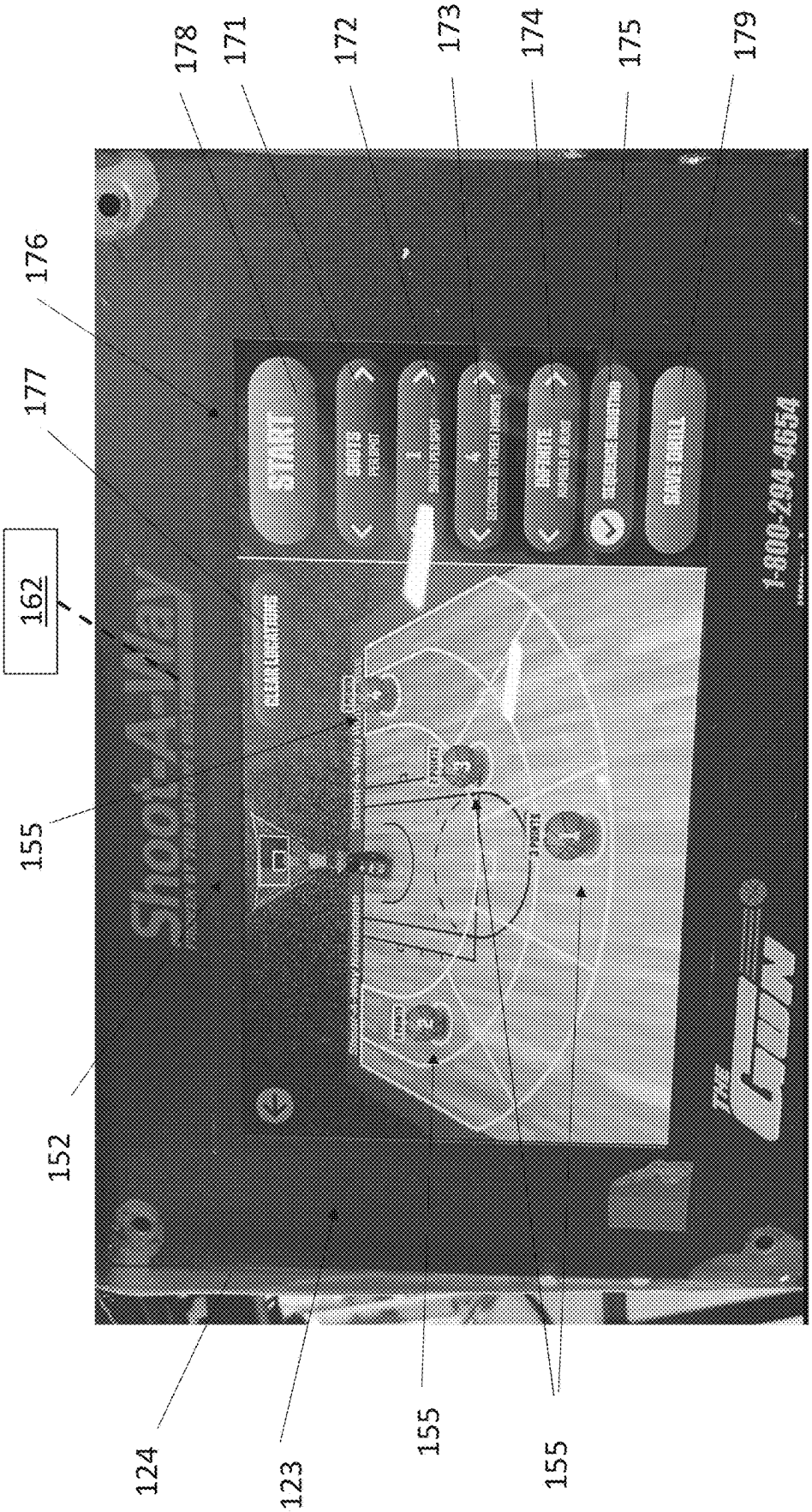
178
171
172
173
174
175
179
176
177
162
155
152
124
123
155
155
START
1-800-291-1654

Figure 19

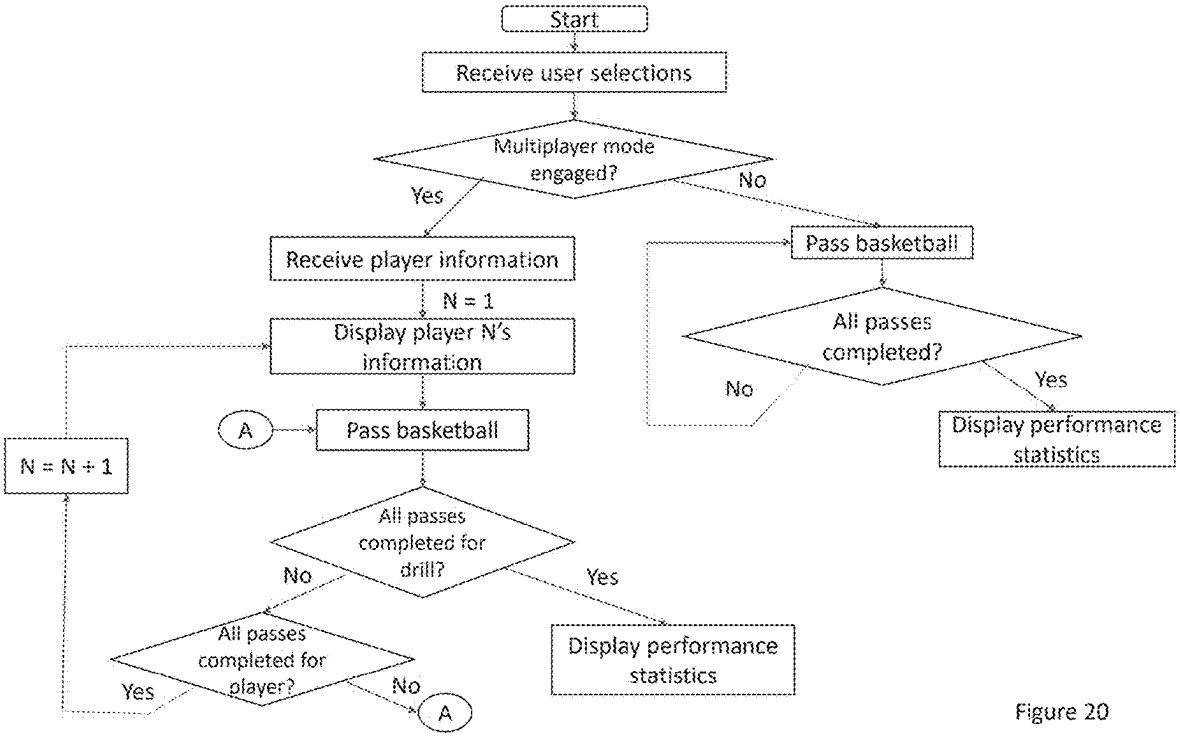
Start
Receive user selections
Multiplayer mode engaged?
Yes
No
Receive player information
N = 1
Display player N's information
A
Pass basketball
N = N + 1
All passes completed for drill?
No
Yes
All passes completed for player?
Yes
No
A
Display performance statistics
Pass basketball
All passes completed?
No
Yes
Display performance statistics

Figure 20

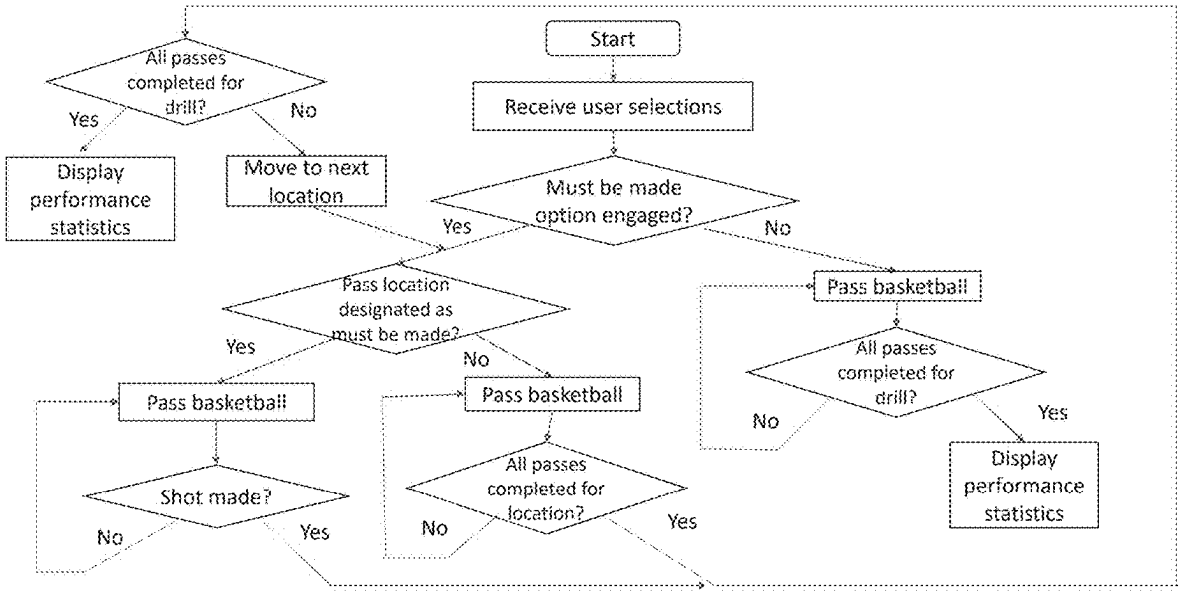
Start
Receive user selections
Must be made option engaged?
Yes
No
Pass location designated as must be made?
Yes
No
Pass basketball
Shot made?
No
Yes
Pass basketball
All passes completed for location?
No
Yes
Pass basketball
All passes completed for drill?
No
Yes
Display performance statistics
All passes completed for drill?
Yes
No
Display performance statistics
Move to next location

Figure 21

BASKETBALL PASSING MACHINE WITH MULTI-USER FEATURES

CROSS-REFERENCE TO RELATED APPLICATION

This application is a continuation-in-part of U.S. application Ser. No. 17/126,855 filed Dec. 18, 2020, which claims the benefit of U.S. provisional patent application Ser. No. 62/951,282 filed Dec. 20, 2019, the disclosures of which are hereby incorporated by reference as if fully restated herein.

TECHNICAL FIELD

Exemplary embodiments of the present invention relate generally to basketball passing machines with multi-user features, such as a front display for selectively displaying participant names.

BACKGROUND AND SUMMARY OF THE INVENTION

Basketball passing devices are used to return basketballs to one or more users positioned about some or all of a basketball playing area, such as a basketball court. For example, a user may position himself or herself at various locations around the basketball playing area to practice shooting the basketball from such locations. Normally, the user would be required to manually retrieve shots made towards the basketball goal. However, a basketball passing device may be used to capture some or all of the made or missed shots and return the captured basketballs to various locations at the basketball playing area to facilitate repetitive shooting practice. Some such devices rely on gravity to pass the basketball to the user. Other devices use machines which automate the return passes. Such machines may also track shooting statistics to give the user feedback on their progress. An example of a basketball passing device is THE GUN® line of products, such as THE GUN 6000, THE GUN 8000, and THE GUN 10K, available from Shoot-A-Way, Inc. in Upper Sandusky, Ohio (http://shootaway.com/).

Conventionally, a player evaluates his or her own performance and/or has a third party, such as a coach, trainer, friend, family member, and/or other individual(s) (hereinafter referred to generally as a "coach") visually observe and evaluate the player's performance. However, it is difficult for a player to evaluate their own performance and, for one reason or another, such third parties may not always be available to evaluate a basketball player at the time of his/her performance. Therefore, what is needed is a basketball passing machine with virtual coaching capabilities.

These disclosures provide a basketball passing machine with virtual coaching capabilities. The basketball passing machine may comprise a launching device. The launching device may be located within a housing and/or mounted to a frame. The housing and/or the launching device may be mounted to a platform in a manner which facilitates pivoting and/or rotation. The launching device may be configured to pass the basketballs to various pass receipt locations on a basketball playing area. A frame may extend vertically behind the housing and/or from the platform. The frame may support a net configured to facilitate the capture of made or missed basketball shots and deliver the captured basketballs to the basketball launching device. Some or all of the frame may be adjustable such that the net may be collapsible and/or the height of the net may be adjusted. In exemplary embodiments, the net may be capable of extending above a rim of a regulation height basketball goal, such as a 10-foot rim.

The basketball passing machine may comprise an interface configured to receive user input for programming the basketball passing machine. The interface may comprise a panel, an electronic display, a touch screen, combinations thereof, or the like. The interface may comprise a series of indicia. The indicia may comprise buttons, electronic icons, selectable areas, combinations thereof, or the like. The indicia may be provided in a spaced apart arrangement at various locations at a rendering of a basketball playing area. The locations of the indicia on the rendering may correspond with pass receipt locations on the basketball playing area. The user may select the indicia corresponding to the pass receipt locations the user desires to receive basketball passes. The indicia may be visible before and/or after selection at the interface.

Alternatively, or additionally, the interface may comprise a visual depiction of an exemplary basketball playing area and the user may select one or more indicia on the rendering where the user would like to receive a pass. Indicia may be provided at the interface to represent the selected pass receipt location(s). Upon the selection of one or more indicia, a processor in electronic communication with the interface may cause a launching mechanism to launch the basketballs to the locations on the basketball playing area corresponding with the selected indicia. In other exemplary embodiments, the indicia are not visible until an area is selected at the interface.

The direction and/or distance the basketball is passed may be automatically adjusted by the launching device to throw the basketballs to the locations on the basketball playing area corresponding with the indicia selected by the user. For example, without limitation, if a user selects pass receipt locations to the left and right of the key, the launching device may be rotated to direct the basketballs in the appropriate direction. As a further example, without limitation, if a user selects a pass receipt location inside of a rendering of a three-point line, the basketballs may be thrown with less force such that they travel a shorter distance. If a user selects a pass receipt location outside of a rendering of the three-point line, the basketballs may be thrown with greater force such that they travel a further distance. In other exemplary embodiments, a distance selection tool located on, or adjacent to, the interface may permit the distance of the basketball passes to be set by the user. In yet other exemplary embodiments, the distance and/or amount of force the basketball is passed with may not change, but the shot may be associated with a different potential score amount based on the location and/or distance of the selected pass receipt location.

The interface may be located on a housing for the basketball ejection device. In other exemplary embodiments, the interface may be located on the frame. Alternatively, or in addition, the interface may be located on a personal electronic device. Any location of the interface may be utilized. Selection of the pass receipt locations may be made directly at the interface, such as but not limited to, by physical depression or other actuation of buttons, physical touch of the buttons at a panel, physical touch of a touch screen, or the like. In other exemplary embodiments, selection of the pass receipt locations may be made indirectly by way of one or more indirect selection devices, such as but not limited to, verbal commands, gestures, number pads, arrows keys, mouse, stylus, joystick, buttons combinations thereof, or the like.

One or more cameras may be mounted to the basketball passing machine, such as, but not limited to, at the housing and/or the frame. In other exemplary embodiments, the cameras may be separate from the housing and/or frame, but in electronic communication with, other components of the basketball passing machine. The cameras may be positioned to record images or videos of the user receiving basketball passes, the user attempting basketball shots, and/or the flight of the basketballs—to the user, towards the basketball goal, some combination thereof, or the like. One or more electronic displays may be mounted to the basketball passing machine, such as to the housing. The electronic displays may be configured to display images of a coach to the player. One or more microphones may be provided to detect audio from the user and/or the coach. One or more speakers may be provided to transmit audio to the user and/or the coach.

Images may be taken periodically or continuously from the cameras. In other exemplary embodiments, images may be taken only when a particular option, such as but not limited to a record feature, is selected by the user. Such images may be stored at the basketball passing machine and/or at a remote location. The user may be provided with an option to share and/or transmit images from the cameras to the coach. For example, without limitation, a share option may be provided, which when selected, may provide a prompt for the user to enter an address for transmission of the images. The images may be synched with audio gathered by the microphones and provided with the images.

The basketball passing machine may be in electronic communication with the coach by way of a remote electronic device. One or more sensors may be provided at the basketball passing machine or elsewhere, such as but not limited to at the basketball goal, and may be configured to detect whether the basketballs have successfully passed through the basketball hoop. Such sensors may comprise cameras, optical sensors, audio sensors, proximity detectors, combinations thereof, or the like. The basketball passing machine may be configured to transmit captured images, video, and audio to the remote electronic device for display to the coach. The basketball passing machine may be further configured to transmit data representing whether the user made or missed a basketball shot at a given location, overall shooting statistics, location-based shooting statistics, some combination thereof, or the like. Such data may be provided in a visualization at one or more remote electronic devices associated with the coach(es). In this way, the coach(es) may be able to track the player's performance. Such data may additionally, or alternatively, be provided at the interface and/or remote electronic devices associated with the user for self-evaluation and/or recordkeeping. This may permit the coach(es) and/or the player to monitor shooting form and know whether or not the form resulted in a successfully made shot, for example without limitation.

Sometimes, multiple users may desire to use a basketball passing machine, such as part of a common drill. In this way, players may compete against one another, such as part of a multi-user mode. For example, passes may be repeated for each of a number of players. This way, each player is presented with essentially the same passes for group participation and/or an equal comparison of performance. Of course, relatively minor variations due to natural fluctuation in ambient conditions, machine operations and wear, basketball condition, ball presentation, combinations thereof, or the like may result in relatively small changes to the presented passes. In other exemplary embodiments, substantially different passes may be presented to each player while still operating in the multi-user mode.

A front display may present various information to the players, such as a name or other identifying information for a respective player who is assigned to an upcoming, current, and/or last presented pass, such as the player who is currently making shooting attempts. In this way, the players can easily keep track of whose turn it is.

User selections for programming a drill may be made at a user interface. The drill may be a customized user drill or a pre-programmed drill. A multi-user mode may be selected during initial programming or later. Player information may be indicated for each user, such as but not limited to, name, team, facility, combinations thereof, or the like. Player information may be automatically associated with a drill by user login in exemplary embodiments, without limitation.

Sometimes, it may be desirable for a participant to especially work towards improvement in shooting accuracy at a particular location. A must-be-made option may be designated for some or all programmed pass locations for some of all programmed participants. A controller may program the machine to continue launching passes to the designated must-be-made positions until data is received indicating a made shot. Then, the controller may program the machine to instead begin passing basketballs to a next location.

Further features and advantages of the devices and systems disclosed herein, as well as the structure and operation of various aspects of the present disclosure, are described in detail below with reference to the accompanying figures.

BRIEF DESCRIPTION OF THE DRAWINGS

In addition to the features mentioned above, other aspects of the present invention will be readily apparent from the following descriptions of the drawings and exemplary embodiments, wherein like reference numerals across the several views refer to identical or equivalent features, and wherein:

FIG. **1**A is a perspective view of an exemplary basketball passing machine and remote electronic device in accordance with the present invention;

FIG. **1**B is a perspective view of the exemplary basketball passing machine of FIG. **1**A with certain features not illustrated and certain internal features shown;

FIG. **2** is a simplified block diagram of a communication and/or control system for the system of FIG. **1**A;

FIG. **3** is a front view of an exemplary interface for the system of FIG. **1**A;

FIG. **4** is a front view of another exemplary embodiment of the interface for the system of FIG. **1**A;

FIG. **5** is a front view of another exemplary embodiment of the interface for the system of FIG. **1**A;

FIG. **6** is a front view of another exemplary embodiment of the interface for the system of FIG. **1**A;

FIG. **7** is a front view of an exemplary visualization of a shooting statistics visualization for the system of FIG. **1**A;

FIG. **8** is a front view of an exemplary virtual coaching interface for the system of FIG. **1**A;

FIG. **8**B is a front view of another exemplary virtual coaching interface for the system of FIG. **1**A;

FIG. **9** is a flow chart with exemplary logic for creating performance data for the system of FIG. **1**A;

FIG. **10** is a flow chart with exemplary logic for sharing the performance data for the system of FIG. **1**A;

FIG. **11** is a front view of another exemplary user interface for use with the system of FIG. **1**A;

FIG. **12** is a front view of the exemplary user interface of FIG. **11** with exemplary user interaction;

FIG. **13** is a front view of the exemplary user interface of FIG. **11** with exemplary user interaction;

FIG. **14** is a front view of the exemplary user interface of FIG. **11** with exemplary user interaction;

FIG. **15** is a front view of the exemplary user interface of FIG. **11** with exemplary user interaction;

FIG. **16** is a front view of the exemplary user interface of FIG. **11** with exemplary user interaction;

FIG. **17** is a front view of the exemplary user interface of FIG. **11** with exemplary user interaction;

FIG. **18** is a front view of the exemplary user interface of FIG. **11** with exemplary user interaction;

FIG. **19** is a front view of the exemplary user interface of FIG. **11** with exemplary user interaction;

FIG. **20** is a flow chart with exemplary logic for a multi-player mode using the machines, systems, and/or figures of any of FIGS. **1-19**; and

FIG. **21** is a flow chart with exemplary logic for a must-be-made option using the machines, systems, and/or figures of any of FIGS. **1-20**.

DETAILED DESCRIPTION OF EXEMPLARY EMBODIMENT(S)

Various embodiments of the present invention will now be described in detail with reference to the accompanying drawings. In the following description, specific details such as detailed configuration and components are merely provided to assist the overall understanding of these embodiments of the present invention. Therefore, it should be apparent to those skilled in the art that various changes and modifications of the embodiments described herein can be made without departing from the scope and spirit of the present invention. In addition, descriptions of well-known functions and constructions are omitted for clarity and conciseness.

Embodiments of the invention are described herein with reference to illustrations of idealized embodiments (and intermediate structures) of the invention. As such, variations from the shapes of the illustrations as a result, for example, of manufacturing techniques and/or tolerances, are to be expected. Thus, embodiments of the invention should not be construed as limited to the particular shapes of regions illustrated herein but are to include deviations in shapes that result, for example, from manufacturing.

FIG. **1**A and FIG. **1**B illustrate an exemplary basketball passing machine **100**. The basketball launching machine **100** may comprise a platform **112**. The platform **112** may comprise a number of rigid members. Alternatively, or additionally, the platform **112** may comprise one or more sheets. One or more movement devices **114**, such as but not limited to wheels, treads, casters, or the like, may be connected to the platform **112** to facilitate movement of the basketball launching machine **100**. Suitably rigid members and/or sheets may be selected and arranged such that the weight and size of components of the basketball launching machine **100** may be adequately supported.

The basketball launching machine **100** may comprise one or more launching devices **111**. The launching devices **111** may comprise one or more catapult arms, throwing arms, striking devices, wheels, belts, combinations thereof, or the like. The launching device **111** may be configured to launch basketballs of regulation or varying sizes and weights, such as but not limited to, size 6 (i.e., 28.5-inch circumference, 20 ounce) and size 7 (i.e., 29.5-inch circumference, 22 ounce) basketballs to various pass receipt locations on some or all of a basketball playing area. The basketball playing area may comprise a basketball court, or a portion thereof, having a basketball goal, though any surface may be utilized. The launching device **111** may be at least partially enclosed within a housing **118**, though such is not required.

The housing **118** may be mounted to said platform **112** and/or a frame **116**. The housing **118** may be mounted to said platform **112** in a fashion which permits pivoting or other rotational movement of the housing **118** and/or the launching device **111**. Stated another way, the housing **118** and launching device **111** may rotate together, or one may rotate independent of the other. Such rotational movement may be about a substantially vertical axis. Such rotation may be facilitated by the user of gears, shafts, ball bearings, turn tables, belts, motors, levers, combinations thereof, or the like. The housing **118** and/or the launching device **111** may be configured to pivot or otherwise rotate so as to direct basketballs to various pass receipt locations on the basketball playing area. Alternatively, or additionally, guides, tracks, ramps, or the like may be used to guide the pathway of the basketballs from the basketball passing machine **100**.

The housing **118** may comprise a first aperture **126** for receiving basketballs. The housing **118** may comprise a second aperture **128** through which basketballs may be launched. The basketballs may be stored inside or outside of the housing **118** before being launched. In some cases, the first and/or second apertures **126** and **128** may not be required, such as where the basketballs are fed to the launcher **111** and exit from the launcher **111** through the same aperture **126** or **128**. The first aperture **126** may be located on an upper portion of the housing **118**. The second aperture **128** may be located on a side of the housing **118**, such as but not limited to the front side. Those skilled in the art will appreciate, however, that other embodiments of the basketball launching machine **100** may include first and second apertures **126**, **128** at different locations than in the embodiment shown, and may do so without departing from the scope of the present disclosure. Furthermore, while a housing **118** may be desired to provide a degree of protection to the internal components of the basketball launching machine, the housing **118** may not be required, or may not cover certain portions of the basketball launching machine **100**. Any number of apertures of various size, shape, and location may be utilized.

The frame **116** may be mounted to the platform **112** and/or housing **118**. At least a first portion of the frame **116** may extend vertically from the platform **112**. The frame **116** may comprise a number of rigid members. In exemplary embodiments, the frame **116** may be mounted or otherwise connected to the housing **118** as a way of providing additional stability. At least a portion of the frame **116** may form a ladder structure, such as but not limited to, in an A-frame configuration where the back portion extends past the front portion along the top of the A-frame type structure, though any configuration may be utilized.

The frame **116** may comprise a second portion configured to support a net **122**. The second portion of the frame **116** may comprise one or more arms **120**, which may generally extend upward and/or splay outwardly. The net **122** may be attached to and extend between one or more of the arms **120** that rise above the housing **118**. The frame **116** may comprise any number of members of any size, shape, and arrangement.

Some or all of the frame **116** may be configured for movement between an expanded position where at least a portion of the frame **116** extends above a rim of a basketball goal **130**, and a collapsed position where at least some of the members of the frame **116** are located in close proximity to

one another. When placed in the expanded position, the arms **120** may splay outwardly and cause the net **122** to form a funnel shape.

Alternatively, or additionally, some or all of the frame **116** may be adjustable in height. For example, one or more members of the frame **116** may be coaxially receivable over or into one or more other members of the frame **116**. For example, without limitation, the arms **120** may be telescopically adjustable.

The height and width of the net **122** may be adjusted by moving the frame **116** between the collapsed and the expanded position. Such movement may include, but does not necessarily require, the telescopic adjustment of various members of the frame **116**. When in the expanded position, the frame **116** and net **122** may form a funnel arrangement configured to direct basketballs captured by the net **122** towards a central exit point located adjacent to the housing **118**. This central exit point may, in exemplary embodiments, feed basketballs that are funneled through the net into the housing **118** through the first aperture **126**.

In exemplary embodiments, without limitation, the basketball launching machine **100** may be configured for placement below a basketball goal **130**. The frame **116** may be configured to extend at least a portion of the net **122** above and around at least a portion of the basketball goal **130** when the frame **116** is in the expanded position. For example, the upper edge of the net **122** may extend above the rim of the basketball goal **130**. Thus, when the frame **116** is in the expanded position, the position of the net **122** may force users to shoot their basketballs with particular trajectories in order to make a successful shot. By forcing a certain arc, the user may improve the likelihood that the basketball shot will be successfully made, such as in game situations when the net **122** is not there. Further, by collapsing the net **122** with the frame **116**, the basketball launching machine **100** may be easily repositioned and/or stored for later use.

The user may position himself or herself at various locations along the basketball playing area to receive basketball passes. Once received, the user may shoot basketballs at the basketball goal **130**. All or most of the shots, successfully made or otherwise, may be captured by the net **122** and returned to the housing **118** to again be passed by the basketball launching machine **100** to the same or different locations. The basketball launching machine **100** may be configured to store multiple basketballs in the housing **118**, launching device **111**, the net **122**, and/or along one or more tracks, guides, or storage areas therebetween. In doing so, the basketball launching machine **100** may consistently and continuously pass basketballs to the user with limited to no reloading down time.

The basketball launching machine **100** may be provided with an interface **124**. The interface **124** may be configured to, among other things, receive user input regarding desired pass receipt locations for the user to receive basketball passes from the launching device **111**. This interface **124** may be located directly on the basketball launching machine **100**. Alternatively, or additionally, the interface **124** may be located remote from the basketball passing machine **100**, such as at a remote electronic device **138**. More than one interface **124** may be provided to receive one or more types of user input. The user input received at the interface **124** may be used to program the basketball launching machine **100** to launch basketballs to the locations on the basketball playing area corresponding to pass receipt locations selected at the interface **124**.

One or more cameras **132** may be mounted to the basketball launching machine **100**. The cameras **132** may be configured to capture images or video of the user catching the basketballs and shooting them towards the basketball goal **130**. The cameras **132** may be configured to pan, rotate, zoom, focus, or the like to the locations the basketballs were passed to. For example, without limitation, the cameras **132** may be mounted to the housing **118** such that the cameras **132** rotate with the housing **118** to keep the user in view. In other exemplary embodiments, the cameras **132** may be configured for movement independent of the housing **118**. In exemplary embodiments, the cameras **132** are mounted to the housing **118**, though the cameras **132** may be mounted at other location. In other exemplary embodiments, the camera **132** may comprise a sufficiently wide-angle lens that the camera **132** may capture images of the user at various locations without rotation of other movement of the camera **132**. Alternatively, or additionally, some or all of the cameras **132** may be provided separate from the basketball launching machine **100**. For example, some or all of the cameras **132** may be selectively connectable to the basketball goal, may be configured for placement around the basketball playing area, combinations thereof, or the like.

A single camera **132** or more than one camera **132** may be utilized. Where more than one camera is used, images from the various cameras **132** may be stitched together, displayed together, or displayed separately in a synchronized fashion. For example, without limitation, a first camera **132** may provide a front view of the user. A second camera **132** may provide a side view of the user. A third camera may provide a perspective view. As another example, a first camera **132** may provide a zoomed-in or enlarged view of the user and a second camera **132** may provide a wide-angle or zoomed-out view of the user. Any number of cameras **132** showing any number of views may be utilized.

One or more electronic displays **134** may be mounted to the basketball launching machine **100**. The electronic display **134** may display information to a user. The electronic displays **134** may comprise any type of display technology, such as but not limited to, LCD, LED, OLED, projection, rear projection, cathode ray tube, plasma, some combination thereof, or the like. The information to be displayed may include, for example, images and/or video of a coach, shooting statistics (including but not limited to, overall percentage of made/missed shots, percentage of made/missed shots at various shooting locations), pass receipt location information, shooting location information, shooting session information, images and/or videos from the camera **132** (such as of the user), machine conditions (e.g., number of basketballs within the housing **118**, normal operations, challenge mode, etc.), combinations thereof, and/or the like.

In exemplary embodiments, without limitation, one or more of the electronic displays **134** (hereinafter sometimes referred to as a "front display" **134**) may be mounted to a housing **118** for the launcher **111**. The front display **134** may be configured for movement with the launcher **111**, by connection to the housing **118** or otherwise, so that the participant may maintain a desirable viewing angle while moving around the playing area, though such is not required. In this manner, glare may be reduced. In other exemplary embodiments, without limitation, the front display **134** may be stationary. For example, the front display **134** may not move with the launcher **111** in such embodiments. The front display **134** may be directly or indirectly attached to the housing **118**, frame **116**, and/or other component of the machine **100**.

One or more audio devices **136** may be mounted to the basketball launching machine **100**. The audio devices **136**

may comprise microphones and/or speakers. The audio devices **136** may be configured to detect noises and/or transmit noises. In exemplary embodiments, the audio devices **136** may be configured to detect audio from the user and/or transmit audio from the coach. The audio devices **136** may be mounted to the housing **118**, though any location may be utilized. This audio may be useful to a coach so that the coach may evaluate the shooting performance of the user. Likewise, the audio transmitted by the audio device **136** may include, for example, feedback from the coach instructing the user on how the user can improve his/her shooting ability. Such video and/or audio may be provided in substantially real time such that the user may interact with the player or coach in a more fluid, conversational type way, though such is not required.

The basketball launching machine **100** may be in electronic communication with one or more remote electronic devices **138**. Each remote electronic device **138** may comprise a computer, smart phone, tablet, some combination thereof, or the like. The remote electronic devices **138** may be associated with the coach, the player, or other third parties. The remote electronic device **138** may be provided either alternatively or additionally to the interface **124**, and may be configured to receive user input regarding desired locations to pass the basketballs. After the user input is received at the remote electronic device **138**, the basketball launching machine **100** may begin launching basketballs to the various locations on the basketball playing area corresponding to the user input.

The basketball launching machine **100** may comprise one or more sensors **160**. The sensors **160** may be configured to detect whether the basketballs have passed through a rim of the basketball goal **130**, thereby representing a successfully made basketball shot. In exemplary embodiments, the sensor(s) **160** may be removably or permanently attached to a rim or other portion of the basketball goal **130**. In other exemplary embodiments, the sensors **160** may be mounted to the frame **116**, the housing **118**, the net **122**, combinations thereof, or the like.

The sensors **160** may comprise a light sensor or other photoelectric eye. In other exemplary embodiments, the sensors **160** comprise one or more shooting cameras **159** configured to capture images of the underside or other portion of the rim of the basketball goal **130** and utilize machine vision software to detect the presence of basketballs passing through the rim. For example, without limitation, the shooting camera **159** may be provided below the basketball goal **130** and may be configured to capture images of basketballs as they are shot towards the basketball goal **130**. The shooting cameras **159** may constitute one of the cameras **132** which provide images to a coach or user, though such is not required. Stated another way, one of the cameras **132** may serve as the shooting camera **159**, which may act as a sensor **160**.

In yet other embodiments, the sensor **160** may comprise one or more accelerometers attached to one or more protrusions extending into the area below the rim of the basketball goal **130** to be contacted by basketballs passing through the rim. In yet other embodiments, the sensor **160** may comprise one or more flapper devices extending into the area below the rim of the basketball goal **130** to be contacted by basketballs passing through the rim. In yet other embodiments, the sensor **160** may comprise one or more microphones configured to detect the sound of basketballs passing through the rim of the basketball goal **130**. Any kind or type of sensor **160**, multiple sensors **160**, or combinations of various type sensors **160**, may be utilized.

The basketball launching machine **100** may comprise a controller **162**. The controller **162** may be configured to receive data from the sensor(s) **160** indicating whether or not a shot has been successfully made. The controller **162** may be configured to receive data from the interface **124** and/or personal electronic device **138** indicating the pass receipt locations selected by the user to receive basketball passes at. For example, without limitation, if the sensor **160** transmits data to the controller **162** indicating that a shot has been successfully made within a predetermined time from passing of one of the basketballs from the launching device **111**, the controller **162** may be configured to determine that the shot corresponding to the last basketball pass from the launching device **111** was successfully made. If no data is received from the sensor **160** within a period of time, the controller **162** may determine that the last basketball pass from the launching device **111** was not successfully made for that attempt.

The controller **162** may be configured to receive data from the cameras **132** and utilize machine vision software to determine if a basketball shot was attempted. Alternatively, or additionally, the controller **162** may be configured to receive data from the shooting cameras **159** and may utilize machine vision software to determine if a basketball shot was attempted and/or made.

The controller **162** may be in electronic communication with any number of components of the basketball launching machine **100**. For example, the controller **162** may be in electronic communication with one or more of: the interface **124**, the basketball launching device **111**, the electronic display **134**, the cameras **132**, the shooting camera **159**, the sensors **160**, or some combination thereof. The controller **162** may, alternatively or additionally, be in electronic communication with the remote electronic device **138**, though such is not required.

In exemplary embodiments, without limitation, the cameras **132**, sensors **160**, and/or audio device **136** may be in electronic connection with electronic storage devices, such as at the controller **162**, which record such images, videos, and/or audio signals for later playback. Alternatively, or additionally, such data may be streamed to a remote electronic device **138**, transmitted to a remote electronic storage device, combinations thereof, or the like. Such electronic communication may be facilitated by the controller **162** and/or network connectivity devices **144**, such as but not limited to, routers, wi-fi devices, radio transmitters, cellular network devices, near field communication devices, combinations thereof, or the like as further provided herein.

FIG. **2** illustrates a plan view of a communication and control system for the basketball passing machine **100**. The controller **162** may comprise one or more electronic storage devices **140**. The controller **162** may comprise one or more processors **142**. The controller **162** may comprise one or more network connectivity devices **144**. Such components may be housed together, or may be separately provided throughout the basketball passing machine **100**.

The remote electronic device **138** may comprise one or more electronic storage devices **148**. The remote electronic device **138** may comprise one or more processors **147**. The remote electronic device **138** may comprise one or more network connectivity devices **149**. The remote electronic device **138** may comprise one or more electronic displays **145**. Those skilled in the art will appreciate, however, that other embodiments of the controller **162** and the remote electronic device **138** may include one or more of the respective aforementioned components (ref. nos. **140**, **142**, **144**, **147**, **148**, **149**), as well as additional components that

may further increase the functionalities of the controller **168** and the remote electronic device **138** without resulting in a departure from the scope of the present disclosure. For example, in exemplary embodiments, the remote electronic device **138** may further include one or more cameras **141** and/or audio devices **143**. The audio devices **143** may include, for example, one or more microphones and/or speakers to enable the transmission and/or detection of audio.

The controller **162** may be in electronic communication with a remote electronic device **138** through respective network connectivity devices **144**, **149**. More specifically, the network connectivity devices **144**, **149** may establish a connection through a network **146** (e.g., internet, intranet, the world wide web, a wireless network, a wired network, a cellular network, some combination thereof, or the like). Other methods of connecting the controller **162** and the remote electronic device **138**, such as though a wired connection or by some other means that does not make use of network connectivity devices **144**, **149**, are also contemplated and may be employed without departing from the scope of the present disclosure.

The remote electronic device **138** and/or the basketball launching machine **100** may also be in electronic communication with one or more remote databases **139**. The remote databases **139** may be configured to store, retrieve, and transmit data such as but not limited to, video or images captured by the cameras **132**, the shooting cameras **159**, the sensor(s) **160**, the controller **162**, the remote electronic device **138**, the basketball launching machine **100**, various components thereof, some combination thereof, or the like. The remote database **139**, the cameras **132**, the shooting cameras **159**, the sensor(s) **160**, the controller **162**, the remote electronic device **138**, the basketball launching machine **100**, various components thereof, some combination thereof, or the like may be configured to time stamp or otherwise code such images and/or data. In this way, data images or other data at the remote database **139**, or received from the cameras **132**, the shooting cameras **159**, the sensor(s) **160**, the controller **162**, the remote electronic device **138**, the basketball launching machine **100**, various components thereof, some combination thereof, or the like may be synchronized with one another.

Additional data from peripheral devices **131**, such as but not limited to heart rate monitors, timing devices, respiration monitors, pedometers, oxygen saturation monitors, some combination thereof, or the like, may be received at the remote database **139**, the controller **162**, the remote electronic device **138**, the basketball launching machine **100**, various components thereof, some combination thereof, or the like. Such additional data may be time stamped or otherwise coded. In this way, data from such peripheral devices **131** may be synchronized with the images or other data at the remote database **139**, or received from the cameras **132**, the shooting cameras **159**, the sensor(s) **160**, the controller **162**, the remote electronic device **138**, the basketball launching machine **100**, various components thereof, some combination thereof, or the like. The peripheral devices **131** may be in electronic communication with said basketball passing machine **100** by way of said network connectivity devices **144**.

The controller **162** may be located at the basketball passing machine **100**. In other exemplary embodiments, the controller **162** is located at the remote electronic device **138**, and/or another remote electronic device. The controller **162**, or other components, may be in electronic communication with one or more remote servers **181** for storing and/or processing data. Such connection may be by way of said network **146**.

FIG. **3** illustrates an exemplary interface display **123** that may be utilized by a user to enter user input. The interface display **123** may be provided at the interface **124**, the electronic display **134**, the remote electronic device **138**, some combination thereof, or the like. Where the interface display **123** is provided at more than one location, the interface display **123** may be updated at all locations, such as but not limited to, the basketball launching machine **100** and the remote electronic device **138**, at the same, or similar times. Such updating may be performed in substantially real time or at any interval. User input may be received at the interface display **123**. In exemplary embodiments, without limitation, such user input is received at the user interface **124** of the basketball launching machine **100**, however, such user input may alternatively or additionally be received at the remote electronic device **138**. For example, a user may utilize the interface display **123** to select various locations where the user desires to receive one or more basketball passes. Once selected, the controller **162** may be configured to receive the user input and direct the basketball launching machine **100** to pass the basketballs to the locations on the basketball playing area corresponding to the pass receipt locations selected by the user. In exemplary embodiments, the controller **162** may be configured to direct the basketball launching machine **100** to pass the basketballs to the locations on the basketball playing area corresponding to the pass receipt locations selected by the user, and in the order in which the user selected said pass receipt locations. In other exemplary embodiments, selections may automatically be re-ordered numerically, from right to left, from left to right, closest to furthest, furthest to closest, randomized, some combination thereof, or the like.

In one or more examples, the interface display **123** may be provided in a read-only mode such that user input from one or more users (e.g., a player or a coach) may not be accepted. The read-only mode may effectively prevent said users from interfering with, for example, an ongoing practice session. However, it is generally contemplated that those prohibited users may still be able to view the interface display **123** to monitor the practice session. For example, without limitation, a read-only interface display **123** may be provided at the remote electronic device **138** and a read-write interface display **123** may be provided at the interface **124**. In this way, the user may make shooting selections while the coach may not. However, read-write interface displays **123** may be provided at both the remote electronic device **138** and the interface **124**, and/or at other locations.

Upon entering user input, the interface display **123** may be updated to reflect the choices made by the user. Updates may be applied simultaneously (or substantially simultaneously) on all of the devices displaying the interface display **123**, such as in real-time or substantially real-time. However, it is also contemplated that updates that are applied at different times, on less than all of the devices, and/or at regular intervals (i.e., not in real-time), would not depart from the scope of the present disclosure.

The interface **123** may comprise one or more pass receipt locations **150** where the basketball launching machine **100** may launch basketballs. These pass receipt locations **150** may correspond to, for example, actual locations on a basketball playing area where a basketball player may attempt a shot. By selecting one or more of these pass receipt locations **150**, the controller **162** may be configured to receive this user input and program the basketball launching

machine **100** to launch basketballs with sufficient force such that the basketballs will travel substantially the distance required to reach the actual locations on the basketball playing area corresponding to the selected pass receipt locations **150**. The pass receipt locations **150** may be visible at the interface display **123** prior to and/or after selection. For example, all possible pass receipt locations **150** may be visible prior to selection and the selected ones of the pass receipt locations **150** may be highlighted, illuminated, changed, or otherwise modified upon selection. In other exemplary embodiments, the interface display **123** may be devoid of pass receipt locations **150** until such pass receipt locations **150** are selected by the user at which time they become visible.

In exemplary embodiments, the pass receipt locations **150** may be located on or around a visual depiction **152** of a basketball playing area rendered or otherwise provided at the interface **124** and/or interface display **123**. The visual depiction **152** may be a complete or partial rendering of an exemplary basketball playing area, and may include, for example without limitation, a three-point arc, a key, a baseline, side lines, a half court line, a center circle, a foul shooting line, some combination thereof, and/or the like. The visual depiction **152** of FIG. **3** is merely exemplary and is not intended to be limiting. The visual depiction **152** may comprise one or more components of a regulation basketball half-court (e.g., NBA/NCAA). Those skilled in the art will appreciate, however, that any style of basketball playing area could be partially and/or completely rendered without departing from the scope of the present disclosure.

The number and arrangement of pass receipt locations **150** on the visual depiction **152** may be varied as desired without departing from the scope of the present disclosure. For example, the pass receipt locations **150** may be provided in a spaced angular pattern, such as along a rendering of a three-point arc. The pass receipt locations **150**, in this example, may be positioned on, inside, and/or outside the three-point arc. In another example, the pass receipt locations **150** may be located within or around a visual depiction **152** of the key, the foul line, and/or any other part of the visual depiction **152**. In other examples, the pass receipt locations **150** may be spaced randomly or in a pattern. Any number of pass receipt locations **150** may be located anywhere on the visual depiction **152**.

The interface **124** may comprise a touch screen, such as but not limited to a resistive or capacitive type touch screen. The interface **124** may comprise a non-touch sensitive electronic display, such as but not limited to an LCD, LED, OLED, or the like. Alternatively, or additionally, the interface **124** may comprise a panel. The pass receipt locations **150** may comprise indicia such as but not limited to an outline, shape, arrow, dot, mark, number, character, circle, or other demarcation. The indicia may provide reference points for the user. Alternatively, or additionally, the pass receipt locations **150** may be selectable such as but not limited to depressible, actuatable, or otherwise selectable buttons. The pass receipt locations **150** may comprise electro-mechanical buttons. The pass receipt locations **150** may comprise electronic icons or indicia. The pass receipt locations **150** may be directly selectable by physical touch. The pass receipt locations **150** may be individually selectable using direct physical touch. For example, without limitation, the pass receipt locations **150** may comprise depressible buttons on the interface **124** and/or on a remote electronic device **138**. A user may depress one or more of these depressible buttons to select one or more pass receipt locations **150**. In another example, the pass receipt locations **150** may comprise touch areas at a touchscreen display. The pass receipt locations **150** may be visible prior to selection, or only after being selected. The pass receipt locations **150** may be configured for selection by direct or indirect actuation, such as by way of a finger or stylus, for example without limitation.

Each of the pass receipt locations **150** may comprise a marker **151**. The marker **151** may comprise one or more characters such as 1, 2, 3, etc., A, B, C, etc., I, II, III, etc. or the like. The markers **151** may serve as reference points for a user or coach.

In exemplary embodiments, the pass receipt locations **150** may be indirectly selectable by way of an indirect selection device **153**. The indirect selection device **153** may be located on or in close proximity to the interface display **123**. The indirect selection device **153** may be, for example, a mouse, cursors, arrow and select keys, alphanumeric keys, and/or the like. The indirect selection device **153** may comprise electro-mechanical buttons, icons on an electronic display, touch pads, joysticks, combinations thereof, or the like.

Each of the pass receipt locations **150** may be configured to be individually selected, actuated, highlighted, touched, depressed, or otherwise interacted with in a direct or indirect manner. Alternatively, or in addition, the basketball launching machine **100** may comprise one or more pre-programmed collections of pass receipt locations **150** that may be selected to cause the basketball launching machine **100** to initiate a pre-programmed drill wherein one or more pass receipt locations **150** are collectively selected in a pre-programmed manner. For example, without limitation, the user or coach may select a free throw drill where the pass receipt locations **150** at the free throw line is automatically programmed. As another example, without limitation, the user or coach may select a three-point drill where a number of pass receipt locations **150** about the three-point arc are automatically programmed.

Each of the pass receipt locations **150** may be configured to indicate whether or not the respective one of the pass receipt locations **150** has been selected. For example, without limitation, the pass receipt locations **150** may be configured to appear, disappear, be illuminated, be darkened, change color, remove or add the marker **151**, and/or the like upon selection or deselection. This may differentiate selected pass receipt locations **150** from non-selected pass receipt locations **150**. Alternatively, or additionally, the pass receipt locations **150** may each comprise an illumination device (e.g., a lightbulb within a depressible button) to accomplish the same. In other exemplary embodiments, the interface **124** and/or the remote electronic device **138** may comprise a touchscreen, and the appearance of the pass receipt locations **150** at the interface display **123** may be altered when directly or indirectly selected. Such alterations may include, for example, appearance, disappearance, changes in shape, size, color, illumination, darken, some combination thereof, and/or the like. In exemplary embodiments, the interface display **123** may comprise the rendering **152** and the user may select various locations **150** and the indicia and/or markers **151** may appear at the approximate area of selection following the user input (direct or indirect). In other exemplary embodiments, the pass receipt locations **150** may not be visible until an area on the interface **124** and/or the remote electronic device **138** is selected or otherwise actuated and then the pass receipt locations **150** and/or the markers **151** may be made visible at substantially the pass receipt location **150** selected.

Upon user selection of one or more of the pass receipt locations **150**, data representing the selected locations **150** may be received by the controller **162** which may command

the launching device **111** to move and/or to launch the basketballs with sufficient force and/or in an appropriate direction such that the basketballs will travel substantially the distance required to reflect the actual location on the basketball playing area corresponding to location of the selected locations **150** on the rendering **152**.

FIG. **4** illustrates another exemplary embodiment of the interface display **123**. A distance selection tool **154** may be provided on or in close proximity with the interface display **123**. The distance selection tool **154** may comprise arrow keys, a number pad, some combination thereof, and/or the like. For example, without limitation, the user may select an up or a down arrow to increase or decrease the distance the basketballs are to be passed, respectively. Upon such a selection, the controller **162** may be configured to command the launcher **111** to launch the basketballs with increased or decreased force to reflect the user selection. The distance the basketballs are thrown may be displayed numerically and may be adjusted for all shots in a shooting routine or for each individual shot within a shooting routine. In other exemplary embodiments, the interface **123** may be configured to adjust the pass receipt locations **150** displayed as the distance selection tool **154** is utilized to reflect the approximate location on the actual basketball playing area the user should stand to receive the basketball pass. As a further example, without limitation, the user may use a keypad to enter a numerical distance amount, such as but not limited to, an approximate number of feet the basketball is to be launched. The distance selection tool **154** may comprise electro-mechanical buttons or icons on an electronic display.

FIG. **5** illustrates another exemplary embodiment of the interface display **123**. The distance selection tool **154** may comprise a 2-point shooting distance option **157** and/or a 3-point shooting distance option **159**. The 2-point and 3-point distance devices **157**, **159** may comprise buttons, indicia, some combination thereof, and/or the like, and may be capable of being selected directly or indirectly. Selection of the 2-point and/or 3-point distance devices **157**, **159** may cause the basketball launching machine **100** to automatically adjust the distance the basketballs are thrown appropriately as described herein. For example, upon such a selection, the controller **162** may be configured to command the launcher **111** to launch the basketballs with increased or decreased force to reflect the user selection. The 2-point and/or 3-point distance devices **157**, **159** may be selected for each location selected. The basketball launching machine **100** may be preprogrammed with a default distance if no distance is selected. In exemplary embodiments, the default distance may be the last distance selected by the user. After the distance has been selected, the interface display **123** may be updated to indicate that a selection has been made. The 2-point shooting distance option **157** and/or a 3-point shooting distance option **159** may comprise electro-mechanical buttons or icons on an electronic display.

FIG. **6** illustrates another exemplary embodiment of the interface display **123**. The pass receipt locations **150** may define one or more zones **155** which extend over some or all of the interface display **123**. The zones **155** may comprise areas defined by the pass receipt locations **150**, and may be directly or indirectly selected by the user. In operation, the zones **155** may permit the user to simultaneously select both the location and distance of the basketball pass. Selection of one or more zones **155** may cause the basketball launching machine **100** to automatically adjust the location and distance the basketballs are thrown. In one or more exemplary embodiments, the zones **155** may also comprise buttons, indicia **151**, markers, some combination thereof, and/or the like to help the user differentiate one zone from another, and to select zones **155** if desired. The zones **155** may comprise electro-mechanical buttons, physical demarcations, or icons on an electronic display. The zones **155** may be defined by visible rendering elements, such as lines, of the visual depiction **150**. In other exemplary embodiments, the visible rendering elements of the visual depiction **150** are not required such that the interface display **123** appears blank except for the rendered elements of the basketball playing area such that the zones **155** comprise electronically defined selection areas, such as at a touch screen.

FIG. **7** illustrates an exemplary embodiment of a shooting statistics visualization **161**. The interface display **123** and the shooting statistics visualization **161** may be displayed simultaneously, alongside one another, as a picture-in-picture, on a separate display, some combination thereof, and/or the like. The shooting statistics visualization **161** may comprise one or more shooting statistics **164** such as, for example, the number and/or percentage of shots made, missed, attempted, some combination thereof, or the like. In exemplary embodiments, the shooting statistics **164** may be displayed at the locations on the rendering **152** corresponding to the pass receipt locations **150** selected by the user. In other exemplary embodiments, the shooting statistics **164** may be displayed at the locations on the rendering **152** corresponding to the locations a player actually took a shot from, such as detected by the cameras **132** or provided as part of a training drill.

While FIG. **7** illustrates the shooting statistics **164** with regards to the interface display **123** of FIG. **6**, the shooting statistics visualization **161** may be adapted to reflect any embodiment of the interface display **123** (such as but not limited to those shown and described with respect to FIGS. **3-5** and/or **11-19**) or other arrangements.

The shooting statistics visualization **161** may be displayed on the same devices that the interface display **123** may be displayed on, such as, for example, the interface **124**, the electronic display **134** associated with the basketball launching machine **100**, the electronic display **145** associated with the remote electronic device **138**, some combination thereof, or the like. Updating the shooting statistics visualization **161** may likewise be similar or the same to updating the interface display **123**.

In exemplary embodiments, without limitation, the interface display **123** and/or the shooting statistics visualization **161** may be displayed along with (e.g., before, after, during, side-by-side, picture in picture, some combination thereof or the like) images and/or videos from the cameras **123**, such as footage of the user taking basketball shots. This may be useful, for example, for a coach who is monitoring the user's performance because it would enable the coach to provide feedback, such as regarding the user's shooting form.

FIG. **8** and FIG. **8**B illustrate exemplary virtual coaching interface displays **125** that may be displayed on one or more of the electronic displays **145** associated with the remote electronic device **138** and/or the electronic display **134** associated with the basketball passing machine **100**. The visual coaching interface **125** may be displayed simultaneously, alongside, as a picture-in-picture, on a separate electronic display **145**, some combination thereof, and/or the like, along with the interface display **123** and/or the shooting statistics visualization **161**. The virtual coaching interface display **125** may include images and/or video received from the cameras **132**, such as but not limited to, of the user taking basketball shots. In exemplary embodiments, such images and/or video may be received and displayed in substantially real-time, such as by way of streaming. In other exemplary

embodiments, the images or video received from the cameras **132** may be stored and played back at the virtual coaching interface display **125** at a later time.

The virtual coaching interface display **125** may include a shooting result indicator **166**. The shooting results indicator **166** may be electronically superimposed on images from the cameras **132**, or may be provided as a separate portion of the display. The shooting results indicator **166** may be configured to indicate whether a particular shooting attempt resulted in a made shot or a missed shot. For example, without limitation, the words "made", "missed", some combination thereof, or the like, may be displayed at the virtual coaching interface display **125**. Such shooting results indicator **166** may be updated corresponding with shots made or missed as detected by the sensors **160**, the shooting camera **159**, and/or determined by the controller **162**. Further, the shooting results indicator **166** may be updated to correspond with the images or videos being shown of the user from the cameras **132**. For example, without limitation, the shooting results indicator **166** may be updated in substantially real time along with the images or video from the camera **132**. As another example, without limitation, the images or video from the camera **132** may be stored and the shooting results indicator **166** may be updated to correspond with the footage currently being displayed on the virtual coaching interface display **125**. In exemplary embodiments, the shots made or missed as determined by the sensor **160** and/or the controller **162** may be time stamped or otherwise coded along with images or video from the camera **132** such that the two may be correlated when displayed at the virtual coaching interface display **125**.

In one or more embodiments, indicia (e.g., a circle) may be provided above a made or missed label to indicate the same, and may be illuminated, darkened, colorized, decolorized, or otherwise changed as appropriate to indicate a made or missed shot resulting from the shooting attempt (e.g., green may correspond with made, and red with missed). Alternatively, or additionally, audio indication may be provided such as an audio recording stating a shot was made or missed, or the like. In this way, the player, the coach, or other third party may be able to review and provide feedback on shooting form while also understanding whether the form resulted in a made or missed shots. This may also be useful where a user is viewing a recording of their own shooting performance because upon review, the user may begin to notice that particular aspects of their form affected their ability to successfully make a shot. Similarly, this may be particularly helpful for coaches who begin to notice that particular aspects of the user's form which affect their ability to successfully make a shot. Audio recordings, visual feedback (such as but not limited to video or images, marked up video or images, etc.) from the coach may be recorded for later playback to the user. The shooting result indicator **166** shown and described is merely exemplary and is not intended to be limiting. Any type of shooting result indicator **166** may be employed without departing from the scope of the present disclosure. For example, without limitation, the shooting results indicator **166** may be icons, lights, some combination thereof, or the like.

In other exemplary embodiments, the virtual coaching interface display **125** may be configured to display images from the shooting camera **159**. In this way, the coach or the user may determine that the shot was made or missed. Such images may be superimposed or displayed separately, such as at a dedicated portion of the virtual coaching interface display **125**. For example, without limitation, the virtual coaching interface display **125** may show the user's shot and then simultaneously, before, after, showing the corresponding images from the shooting camera **159**. Time stamping or other coding may be utilized to coordinate the displayed images.

Alternatively, or additionally, data **167** from one or more peripheral devices **131** may also be displayed at the virtual coaching interface display **125**. The additional data **167** may include, for example, user heart rate, perspiration, oxygen saturation, respiration rate, workout time, some combination thereof, and/or the like, and may be displayed in any suitable form (e.g., indicia, markings, etc.). The data **167** may be superimposed or display separately.

Alternatively, or additionally, shooting data **169** may be displayed at the virtual coaching interface display **125**. The shooting data **169** may be updated to reflect data received at the controller **162**, sensors **160**, cameras **132**, shooting camera **159**, received or displayed at the interface **124**, the interface display **123**, and/or the statistics visualization **161**, combinations thereof, or the like. The shooting data **169** may comprise pass receipt locations **150** selected by the user, the shooting statistics **164**, some combination thereof, and/or the like. The shooting data **169** may be provided in any form and may comprise a rendering of the basketball playing area to substantially match the interface display **123** and/or the statistics visualization **161**, though such is not required. The shooting data **169** may be superimposed or display separately.

FIG. **9** is a flow chart with exemplary logic for creating performance data generated by the basketball passing machine **100**. In exemplary embodiments, video from the camera(s) **132** may be time stamped or otherwise coded. The timing of basketball passes from launching device **111** may be time stamped or otherwise coded. Data indicating made or missed shots from the sensor(s) **160**, such as but not limited to the shooting camera **159**, may be time stamped or otherwise coded. The time stamp or code may be set by a clock or other device. The same or similar time stamp or coding technique may be utilized for the camera(s) **132**, the launching device **111**, and/or the senor(s) **160**, though such is not required. The time stamp or coding may be performed at the controller **162**, though such is not required. In exemplary embodiments, the controller **162** may comprise a clock or other timekeeping device for performing the time stamp.

Performance data may be generated for a user's practice session by synchronizing data from the interface **124**, controller **162**, the launching device **111**, and/or other components regarding the location of a basketball pass, data from the camera(s) **132** and/or other components showing the user's shooting attempt, and data from the sensor(s) **160** and/or other components indicating whether the shooting attempt resulted in a made shot or a missed shot. Such performance data may be provided as shown and discussed herein, particularly with respect to at least FIGS. **6-8**, for example, without limitation. Such performance data may also include data from peripheral device **131** in exemplary embodiments.

The performance data may comprise images of the user during the shooting session with information displayed simultaneously, before, or after regarding pass receipt locations, shooting locations, shots made, shots missed, shots attempted, shooting percentage, some combination thereof, or the like. Alternatively, or additionally, the performance data may comprise a highlight reel of only made shots, only missed shots, shooting attempts from one or more particular locations, some combination thereof, or the like. The per-

formance data may be generated by the controller **162**, the electronic device **138**, a remote server **181**, combinations thereof, or the like.

FIG. **10** is a flow chart with exemplary logic for sharing performance data. A user may be prompted, such as at the interface **124**, with an option to record their performance. A user may be prompted, such as at the interface **124**, with an option to share their performance. Selecting the record and/or share option(s) may cause the basketball passing machine **100** to begin creating performance data as shown and discussed herein, particularly with respect to at least FIG. **9**, for example, without limitation. Such performance data may be stored at the controller **162** and/or one or more local or remote databases.

Upon selection of the share and/or record feature, the user may be prompted to enter an address for sending of the performance data. The address may be an email address, network address, cell phone number, some combination thereof, or the like. The performance data may be transmitted to the address. The performance data may be segmented as required and sent in multiple parts to accommodate size restrictions or servers, devices, or the like. Alternatively, or additionally, the transmission may comprise a message with a link to view and/or download the performance data.

In exemplary embodiments, the creation and recording of performance data may begin automatically upon programming of the basketball machine **100** to initiate a practice session. In such embodiments, the performance data may be automatically deleted following the shooting session, or after a predetermined amount of time, if a share request is not received. In other exemplary embodiments, the creation and recording of performance data may not begin unless a record request is received. The performance data may be automatically deleted following the shooting session or after a predetermined amount of time, if a share request is not received.

The record and/or share selections and related prompts may be provided at the user interface **124**, though such prompts may be provided elsewhere. For example, without limitation, a dedicated record button or icon and a dedicated share button or icon may be provided. The buttons may be physically separate buttons or icons, or selectable areas with indications designating the same at the user interface **124**.

Images may comprise one or more individual images, videos, video clips, some combination thereof, or the like.

FIG. **11** through FIG. **19** illustrate another exemplary interface display **123** for use with the basketball launching device **100**. A number of selection areas **155** may be positioned about the user interface **124** and may be defined, at least in part, by the visual depictions **152**. In exemplary embodiments, user selection anywhere within a given one of the selection areas **155** may cause the user interface **124** to record the user's desire to receive a pass at the given selection area **155**. For example, without limitation, user selection of any point within a given selection area **155** may be configured to cause the basketball launching device **100** to launch a basketball to a single, common point on the basketball playing area corresponding with the given selection area **155**. So, for example without limitation, if two pass receipt locations **150** are selected within the given selection area **155**, two passes may be made to substantially the same pass receipt location **150** at the basketball playing area. In this way, programming and operation of the basketball launching device **100** may be simplified.

In other exemplary embodiments, the selection areas **155** may be provided solely for user convenience and reference and the basketballs may be passed approximately to their respective location on the basketballs playing area corresponding with selected pass receipt locations **150**. So, for example without limitation, if two pass receipt locations **150** are selected within a given selection area **155**, two passes may be made to different locations within the same pass receipt location **150** at the basketball playing area. In this way, programming and operation of the basketball launching device **100** may be made more precise.

The user interface **124** may be configured to receive a user selection of pass receipt locations **150** on the basketball playing surface for the launcher to pass the basketballs to. User selection may be made by direct, physical touch, such as by use of a touch screen or a panel with physically depressible buttons, or by way of one or more tools, such as but not limited to, the selection tool **153** shown and/or described with respect to FIG. **3**. Various pass receipt locations **150** about the user interface **124** may be selected by the user. The pass receipt locations **150** may be selected with reference to one or more elements of the visual depiction **152** so that the user knows where to stand on the actual basketball playing area to receive the corresponding passes. For example, without limitation, if the user selects a pass receipt location **150** near the foul line, the user may then stand near the foul line (real or imaginary) to receive a corresponding pass. Any number and pass receipt locations **150** of such pass receipt locations **150** may be selected to create one or more customized basketball practice routines.

The pass receipt locations **150** selected by the user may be displayed and updated as they are selected. For example, without limitation, the pass receipt locations **150** may be illuminated, darkened, colorized, decolorized, highlighted, changed, or otherwise altered upon selection. Alternatively, no such pass receipt locations **150** may be displayed and the user's touch at a given point may cause a pass receipt location **150** to be displayed as selected. For example, without limitation, the pass receipt locations **150** may appear upon selection. The pass receipt locations **150** may be displayed as icons, buttons, indicia, combinations thereof, or the like. The pass receipt locations **150** may comprise digital representations displayed on a screen (e.g., electronic icons) or physically depressible buttons on a panel, to name a few examples. The pass receipt locations **150** may be displayed as a basketball, though any graphical representation may be utilized.

The pass receipt locations **150** may comprise a number, alphanumeric character, or other representation corresponding to the order in which the passes will be made (e.g., the first pass going to the pass receipt locations **150** labeled with a "1", "A", or the like, the second pass to number "2", "B", or the like, and so forth). Initially, the pass receipt locations **150** may be labeled with an order based on the order they were selected. The pass receipt locations **150** may be labeled with a corresponding score to be recorded if a shot is successfully made from a pass associated with the pass receipt location **150**. In exemplary embodiments, the points vary based on distance from the visual depiction **152** of the launcher **100** and/or the basketball goal. For example, without limitation, two points may be recorded for all pass receipt locations **150** in front of the visual depiction **152** of the three-point line and three points may be recorded for all pass receipt locations **150** behind the visual depiction **152** of the three-point line, though any scoring scheme may be utilized.

FIGS. **11-14** illustrate exemplary programming of three exemplary pass receipt locations **150** at the user interface **124**. The user interface **124** may be configured to permit revision of the pass receipt locations **150** after their initial

selection, such as before the launcher **100** begins launching the basketballs, during the practice session, or after the practice session is completed. For example, without limitation, a given one of the pass receipt locations **150** may be moved from an initial pass receipt location **150** to a new pass receipt location **150**. Such movement may be accomplished by a touch and drag technique. Such movement may, alternatively or additionally, be accomplished by a tap and drag technique, taping motion, swipe, click and drag technique, press and drag technique, combinations thereof, or the like. FIGS. **15-17** show the movement of a first pass receipt locations **150** from an initial spot on the left side of the key to a new spot near the top of the key. FIGS. **15-17** illustrate the user interface **124** updating the first pass receipt locations **150** from two points to three points based on its location relatively to the visual depictions **152**. FIGS. **17-19** illustrate, for example without limitation, movement of a second one of the pass receipt locations **150** and addition of a fourth pass receipt locations **150**. Any technique for moving the pass receipt locations **150** may be utilized. The user interface **124** may be used to create a vast number of custom practice routines.

A delete tool **177** may be provided to remove the selected one of the pass receipt locations **150**. The delete tool **177** may be displayed or otherwise provided only upon selection of one or more of the pass receipt locations **150** in exemplary embodiments through such is not required. The delete tool **177** may comprise a defined area where the icon, button, symbol, indicia, or the like for the pass receipt locations **150** may be moved and result in its removal from the custom practice routine. In other exemplary embodiments, the delete tool **177** may normally be displayed or otherwise provided.

An options menu **176** may be provided at the user interface **124**. In exemplary embodiments, the options menu **176** may be positioned adjacent to the visual depictions **152**, though any location may be utilized. The options menu **176** may comprise a practice style option **171**. The practice style option **171** may permit the user to choose between a number of programming options including, but not limited to, creation of a custom drill, use of a pre-programmed drill, a shots per location option, a makes in a row option, a made shots options, or the like. In the makes option, the controller **154** may program the launcher **100** to require indication of a number of shots made at a given selected pass receipt location **150** before the launcher **100** moves to the next selected pass receipt locations **150**. In the makes in a row option, the controller **154** may program the launcher **100** to require indication of a number of shots in a row at a given selected pass receipt locations **150** before the launcher **100** moves to the next selected pass receipt locations **150**. In the shots per location option, the controller **154** may program the launcher **100** to launch the number of passes selected at a shots per location option **172** to a given one of the selected pass receipt locations **150** before moving to the next selected pass receipt location **150**. The shots per location option **172** may be updated to a number of made shots or number of made shots in a row option depending on the user selection made at the practice style option **171**.

The indication of shots made or missed may be made by way of one or more sensors **160**.

The options menu **176** may comprise a timing option **173**. The timing option **173** may permit the user to select a time delay between passes.

The options menu **175** may comprise a number of runs options **174**. The number of runs options **174** may permit the user to select a number of times the launcher **100** progresses through all of the selected pass receipt locations **150** before terminating the practice session.

The options menu **175** may comprise a sequence shooting option **175**. The sequence shooting option **175** may permit the user to select between automatic renumbering of the order of the selected pass receipt locations **150** or ability to program a non-serial order of the selected pass receipt locations **150**. Where the sequence shooting option **175** is not selected, for example, the order of the pass receipt locations **150** within the custom practice arrangements may by automatically renumbered such that the basketballs are always passed in a particular order, such as but not limited to from right to left, left to right, closest to furthest, further to closest, etc. Where the sequence shooting option **175** is selected, the order of the pass receipt locations **150** within the custom practice arrangement may remain unchanged such that they may be provided in a non-serial order.

After one or more pass receipt locations **150** are selected, a save option **179** may be provided at the options menu **176**. The save option **179** may permit the user to save the created program for subsequent use. After one or more pass receipt locations **150** are selected, a start option **178** may be provided at the options menu **176**. The start option **178** may permit the user to initiate the created program. In exemplary embodiments, selection of the start option **178** may cause the user interface **124** to communicate the selected pass receipt locations **150** forming the custom practice arrangements to the launcher **100**, such as but not limited to, by way of the controller **154**.

For those pass receipt locations **150** further from the launcher **100**, the controller **162** may be configured to command the launching device **111** to automatically launch basketballs with greater force (thus causing their normal passing distance to increase), such as by way of the automatic distance adjustment mechanism **152**. Likewise, for those pass receipt locations **150** closer to the launcher **100**, the controller **162** may be configured to command the launching device **111** to automatically launch basketballs with less force (thus causing their normal passing distance to decrease), such as by way of the automatic distance adjustment mechanism **152**.

FIG. **20** illustrates a flow chart for operating an exemplary multi-player mode with the machine **100**. A controller **162** may be configured to accept user selections, which may include selection of a multiplayer mode. Such selections may be made at the user interface **124**, such as at the machine **100** and/or remote electronic device **138** for example without limitation. In other exemplary embodiments, without limitation, the multiplayer mode may be automatically or manually engaged (e.g., by user selection) after a drill is otherwise programmed or underway, such as by way of revisions or updates to the programmed drill.

Where the multiplayer mode is engaged, information may be received for each participant. Such information may include, for example without limitation, player name, team information, user name, password or other login information, player order, combinations thereof, or the like. Such information may be manually entered. Logging-in may permit player information to be automatically associated with the drill by the controller **162**. For example, without limitation, before, during, or after programming the drill and selecting the multi-user mode option, players may be logged into the machine **100** and/or their profiles selected for association with the drill. Such logging in or association may be performed at the user interface **124**, such as at the machine **100** and/or remote electronic device **138** for example without limitation. Upon doing so, stored player

information, such as name, team, geographic, facility, or other information, may be automatically retrieved by, or received at, the controller **162** for association with the drill and display at the front display **134**, in exemplary embodiments without limitation.

The controller **162** may be configured to associate passes with participants. The controller **162** may be configured to associate a first set of passes with a first player, a second set of passes with the second player, and so forth. The passes may be the same for each player or different. For example, without limitation, two passes may be provided to each of locations 2, 6, 12, and 15 (see e.g., FIG. **3**) for the drill. If three players are participating, the controller **162** may be configured to associate a first set of two passes to each selected location (so the first 8 passes) with player 1, a second set of two passes to each selected location (so the next 8 passes) with player 2, and third set of two passes to each selected location (so the final 8 passes) with player 3. As another example, without limitation, two passes may be provided to location 4 in association with player 1, five passes to locations 9 and 11 in association with player 2, and one pass to location 13 in association with player 1. The controller **162** may be configured to associate the first two and final pass with player 1 and the intervening 5 passes with player 2.

Of course, these are just some examples which are provided without limitation. A wide variety of custom or pre-programmed drills maybe performed using the muti-user mode for any number of participants. User selections for programming may include, for example without limitation, locations for pass receipt, a number of passes per location, an order of passes, an action to be performed before, after, or while receiving a pass, shooting locations, time between passes, combinations thereof, or the like may be selected by the user for the drill. Such selections may be made at the user interface **124**, such as at the machine **100** and/or remote electronic device **138** for example without limitation.

The controller **162** may be configured to cause each player's name or other identifying information may be displayed, such as but not limited to, at a forward-facing electronic display **134** (hereinafter also the "front display" **134**) when passes assigned to the player are about to be, are being, and/or just were provided by the launching device **111**. In exemplary embodiments, without limitation, the participant information (e.g., player name) is displayed before a pass is commanded by the controller **162** and at least part of the time the pass is performed by the launching device **111**. The participant information (e.g., player name) may be displayed during or after the pass is commanded by the controller **162** and/or performed by the launching device **111**. Such display may continue so long as passes are designated for the participant. Alternatively, or additionally, the player information may be displayed for a period of time and then a new display with the same or different player information, as appropriate, is provided.

In this manner, the players may be able to easily ascertain whose turn it is to participate in the drill. Once all passes assigned to a given participant are exhausted, the controller **162** may be configured to cause a next participant's name or other identifying information for other identifying information may be displayed, such as but not limited to, at the front display **134**, and so forth, for each participant.

The passes provided to each participant may be the same, or different from one another. In this fashion any number and/or type of passes, pass receipt locations, shooting locations, drill types, combinations thereof, or the like may be assigned to each participant.

Partially or fully programmed drills may be edited, including while a drill is in progress. Such editing may be performed at the user interface **124**, by way of non-limiting example. Such editing may include, by way of non-limiting example, reassigning passes to different participants, adding participants, removing participants, engaging/disengaging multiplayer mode, moving pass locations, moving shooting locations, changing pass type, combinations thereof, or the like.

Performance statistics may be displayed, including but not limited to, at the front display **134**, at the interface **124**, at the remote electronic device **138**, combinations thereof, or the like. Performance statistics may be provided, for example without limitation, during and/or after each pass, round of passes, player participation, drill, combinations thereof, or the like. For example, without limitation, a player's performance statistics may be displayed upon complete of a set of passes for that player and before a next player begins his or her turn. Alternatively, or additionally, summary information for all participants may be provided upon completion of a drill. The summary information may be cumulative for all participants, individual for each participant, combinations thereof, or the like.

Provided performance information may be specific to the participant, specific to the drill, cumulative for all participants, team specific, facility specific, historical, combinations thereof, or the like. Performance statistics may include, for example without limitation, player success/failure rate is making basketball shots (e.g., in numerical ratio form, such as percentages or raw statistics (e.g., X/Y), number of passes made, number of shots made, pass receipt locations, shooting locations, drill type information, combinations thereof, or the like. Such statistics may be provided with player, team, facility, coach information, combinations thereof, or the like.

Were the multiplayer mode is not engaged, programming and/or operation may proceed normally.

Programmed drills may be saved to one or more libraries, such as electronically stored at the machines **100** or remote therefrom. Stored drills may be recalled at the same or different machines **100** and/or may be remotely edited, such as by way of the remote electronic devices **138**. Libraries may be player specific, facility specific, machine specific **100**, team specific, global, combinations thereof, or the like, though such is not required. Stored drills, including but not limited to multi-player drills, may be assigned to various participants, such as by way of login information, player profile, or the like. This may permit added forms or virtual coaching.

Participants may be individually logged into and/or out of the machines **100** and/or may be logged into and/or out of the machines **100** as a group (e.g., team). Information for all logged-in or otherwise registered participants (e.g., as one or more lists) may be displayed, such as at the front display **134**, user interface **124**, and/or remote electronic devices **138**, for example without limitation.

FIG. **21** illustrates an exemplary must-be-made mode. The must-be-made mode may be used in conjunction with, or separate from, the multi-user mode.

The controller **162** may be configured to provide an option for a must be made mode. Selecting the must be made mode option may permit a user to program one or more pass and/or shooting locations as those which must be made before the machine **100** may progress to another location.

Such selections may be made at the user interface **124**, such as at the machine **100** and/or remote electronic device **138** for example without limitation.

The controller **162**, in when the must be made mode is engaged, may be configured to continue to pass basketballs to a must-be-made designated pass location until information is received, such as from the sensor(s) **160**, that a shooting attempt was made in association with the must-be-made designated pass location. The requirement to make a single or multiple shots at the must-be-made designated pass locations may be programmed. The must-be-made designation may be provided for some or all locations, some or all participants, combinations thereof, or the like.

While display performance statistics or similar may be provided at the flow charts, such as in FIGS. **19-20**, after all passes are completed, the display of performance statistics may, alternatively or additionally, be performed at any stage, such as while a drill is underway. While display player information may be provided at the flow charts, such as in FIGS. **19-20**, before passing, the display of participant information may, alternatively or additionally, be provided at any time, such as while or after a pass is made.

The steps and order show and/or described are merely exemplary and are not intended to be limiting. Certain steps may be added, removed, omitted, reordered, and/or repeated.

Any embodiment of the present invention may include any of the optional or preferred features of the other embodiments of the present invention. The exemplary embodiments herein disclosed are not intended to be exhaustive or to unnecessarily limit the scope of the invention. The exemplary embodiments were chosen and described in order to explain the principles of the present invention so that others skilled in the art may practice the invention. Having shown and described exemplary embodiments of the present invention, those skilled in the art will realize that many variations and modifications may be made to the described invention. Many of those variations and modifications will provide the same result and fall within the spirit of the claimed invention. It is the intention, therefore, to limit the invention only as indicated by the scope of the claims.

Certain operations described herein may be performed by one or more electronic devices. Each electronic device may comprise one or more processors, electronic storage devices, executable software instructions, and the like configured to perform the operations described herein. The electronic devices may be general purpose computers or specialized computing device. The electronic devices may be personal computers, smartphones, tablets, databases, servers, or the like. The electronic connections and transmissions described herein may be accomplished by wired or wireless means. The electronic devices, including but not necessarily limited to the electronic storage devices, databases, controllers, or the like, may comprise and/or be configured to hold, solely non-transitory signals.

What is claimed is:

1. A basketball passing machine with a multi-user feature, said machine comprising:

a launching device configured to pass basketballs to locations at a basketball playing area;

a front display; and

a controller in electronic communication with said launching device and said front display, wherein said controller is configured to receive programming information for a basketball practice drill comprising participant information for each of multiple users, and based on the programming information received, associate each pass in said basketball practice drill with a respective one of the multiple users such that at least one of the passes of said basketball practice drill is associated with a different one of the multiple users from at least one other one of the passes in said basketball practice drill, command said launching device to pass the basketballs to at least some of the locations at the basketball playing area as indicated in the programming information for said basketball practice drill, and display respective participant information for the respective one of the multiple users associated with a respective one of the passes at said front display before and/or while commanding the respective one of the passes such that different participant information is displayed at the front display at different times while the basketball practice drill is underway and all of the participant information is individually and separately displayed at the front display at some point during said basketball practice drill.

2. The machine of claim **1** wherein:

said launching device is configured for rotational movement to face in various directions; and

said front display is configured for rotational movement with said launching device to face in a same direction as said launching device.

3. The machine of claim **2** further comprising:

a housing for said launching device, wherein said front display is mounted to a forward-facing surface of said housing.

4. The machine of claim **2** wherein:

said user interface is connected to a side-facing surface of said housing.

5. The machine of claim **1** wherein:

said launching device is configured for rotational movement to face in various directions; and

said front display is configured to remain stationary while said launching device rotates.

6. The machine of claim **1** further comprising:

a user interface in electronic communication with said controller and configured to receive user selections of locations for the basketball practice drill, and the participant information for each of the multiple users.

7. The machine of claim **6** wherein:

said participant information comprises provided names or user identifiers for each of the multiple users.

8. The machine of claim **7** wherein:

said front display comprises an electronic display;

said user interface comprises a touch screen; and

said user interface faces a different direction from said front display.

9. The machine of claim **8** further comprising:

a housing for said launching device, wherein said front display is connected to a forward-facing surface of said housing, said launching device is configured for rotational movement to face in various directions, and said housing is configured for rotational movement with said launching device such that said front display faces in a same direction as said launching device.

10. The machine of claim **9** wherein:

said user interface is connected to a side-facing surface of said housing such that said user interface is configured to rotate with said housing.

11. The machine of claim **7** further comprising:

one or more sensors in electronic communication with said controller and configured to determine if a basketball shot is successfully made, wherein said controller is configured to receive data from said one or more

sensors to determine if an attempted basketball shot is successfully made and associate made or missed shooting attempts with each of said passes for the basketball practice drill.

12. The machine of claim **11** wherein:

said controller is configured to display individual summary shooting statistics for each of said multiple users following completion of said basketball practice drill such that the individual summary shooting statistics for each of said multiple users are displayed simultaneously and each of the individual summary shooting statistics is displayed in association with a respective one of the provided names or user identifiers for the respective one of the multiple users.

13. The machine of claim **11** wherein:

said controller is configured to display shooting statistics information at said front display during said basketball practice drill.

14. The machine of claim **11** wherein:

said controller is in electronic communication with a remote electronic device and is configured to display individual shooting statistics for each of said multiple users at said remote electronic device for said basketball practice drill such that each of the individual shooting statistics is displayed in association with a respective one of the provided names or user identifiers for the respective one of the multiple users.

15. The machine of claim **11** further comprising:

a camera in electronic communication with said controller and configured to record images of said multiple users attempting basketball shots as part of said basketball practice drill.

16. The machine of claim **11** wherein:

said one or more sensors comprise a mechanical flapper.

17. The machine of claim **1** further comprising:

a user interface in electronic communication with said controller and configured to receive user selections of locations for the basketball practice drill and user selection of a must be made option for at least one of said locations; and

one or more sensors in electronic communication with said controller and configured to determine if a basketball shot is successfully made, wherein said controller is configured to command said launching device to continue launching passes to each respective user selected one of said locations at said basketball playing area corresponding to said must be made designated one or ones of said locations selected at said user interface until data is received from said one or more sensors indicating that said basketball shot is successfully made for one of said passes associated with the respective one of said locations.

18. The machine of claim **1** further comprising:

a collection net for collecting the basketballs and returning them to the launching device;

a frame supporting said collection net and connecting at least said launching device, said front display, and said controller; and

wheels connected to said frame for moving said machine about said basketball playing area.

19. A method of providing a multi-player mode at a basketball passing machine, said method comprising:

receiving user selections from a user interface of the basketball passing machine indicating desired pass receipt locations of a basketball practice drill and participant information for each of a plurality of participants of the basketball practice drill;

electronically associating, by way of a controller, each pass in the basketball practice drill with a respective one of the participants such that at least one of the passes of said basketball practice drill is associated with a different one of the participants from at least one other one of the passes in said basketball practice drill;

commanding, by way of the controller, a launching device to pass basketballs to locations about a basketball playing area corresponding with the user-selected pass receipt locations of the basketball practice drill; and

displaying, at a front display of the basketball passing machine, separately and for each respective one of the passes commanded by the controller while and/or before said pass is performed by said launching device, the participant information for the associated one of the participants on an individualized basis such that the participant information for each of the participants is individually and separately displayed at a different time during the basketball practice drill.

20. The method of claim **19** further comprising:

receiving, from one or more sensors, data indicating whether or not a player successfully made a basketball shot; and

displaying, at the front display, a shooting performance report graphically presenting, individually for each of the participants, percentages of successfully made shooting attempts for the pass receipt locations of the basketball practice drill such the percentages for each of said participants is displayed simultaneously as part of the shooting performance report.

21. A basketball passing system with multi-player features, said system comprising:

a launching device configured for rotational movement to selectively pass basketballs to spaced apart locations about a basketball playing area;

a housing extending about at least a portion of said launching device and configured for rotational movement with the launching device;

a front display connected to a forward-facing surface of said housing such that the front display rotates with said launching device and said housing such that said launching device and said front display face in a same direction during the rotational movement;

a user interface in electronic communication with said controller and configured to receive user selections of some or all of the locations to define, at least in part, a desired basketball shooting practice drill, and user information for each of a plurality of participants for said basketball shooting practice drill; and

a controller in electronic communication with said launching device, said front display, and said user interface, wherein said controller is configured to:

receive said user selections from said user interface;

electronically associate each pass in said basketball shooting practice drill with one of said participants such that at least one of the passes of said basketball practice drill is associated with a different one of the participants from at least one other one of the passes in said basketball practice drill;

command said launching device to pass the basketballs to each of the locations at said basketball playing area forming part of the desired basketball shooting practice drill in a separate sequence for each of the participants; and

display the participant information at said front display in association with commanding said launching device to pass the basketballs of each of the

sequences, wherein said participant information comprises the provided names or user identifiers of the participants, and wherein said participant information is displayed on an individualized basis for a respective one of the participants associated with a respective one of the passes before and/or while commanding said launching device to pass the basketballs and such that the participant information such that the participant information changes during the course of the basketball shooting practice drill and the participant information for each of the participants is individually and separately displayed over the course of the basketball shooting practice drill.

22. The machine of claim **21** wherein:

said user interface is connected to said housing such that said user interface is configured for rotation with said housing.

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