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A6S S32AX S32A1 S32B S32C S32D S32X

(56) Documents Cited
US 5401033 A

(58) Field of Search
UK CL (Edition O) **A6S**
INT CL^6 **F41J**
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(54) Apparatus for playing electronic darts

(57) An apparatus for playing a game of electronic darts which comprise a target (1), a visual display unit (19), a lighting and sound system all contained within a casing (14), and a play actuator (21) and a game positioning mat (22) external to the casing (14). The target (1) comprise a plurality of beds divided into 20 divisions (3) and 7 rows each with its own pre set numerical calculations which can be re set as required to perform different calculations. The score numbers (7), 1 in each division can randomly change their value. Different sets of numbers can be displayed on the target face (1) and different sequential applications can be set. Two or more than two apparatus can be connected together and used in series for competitions use. When the apparatus are used in series, additional lighting and sound displays (26) are attached to enhance spectator excitement.

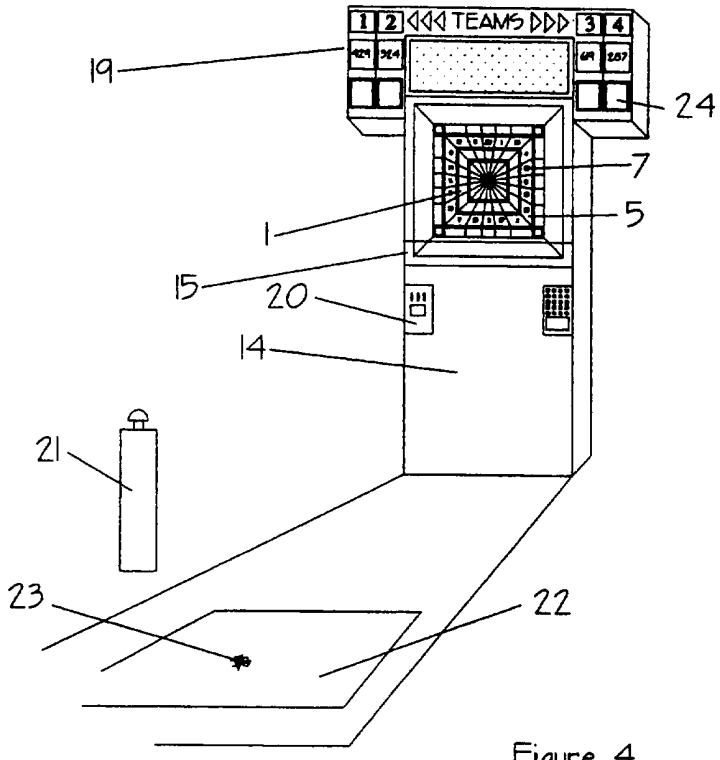

Figure 4

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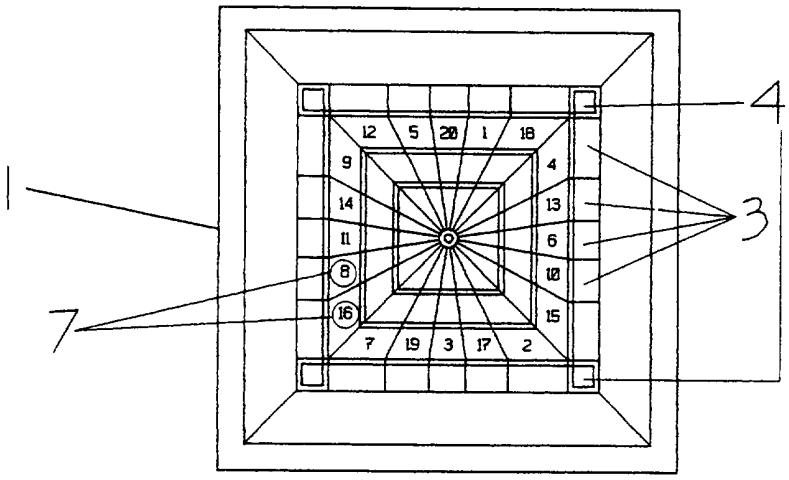


Figure 1

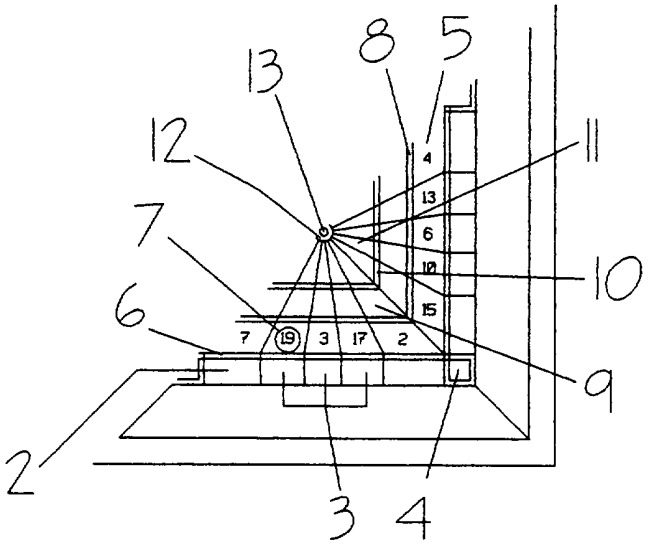


Figure 2

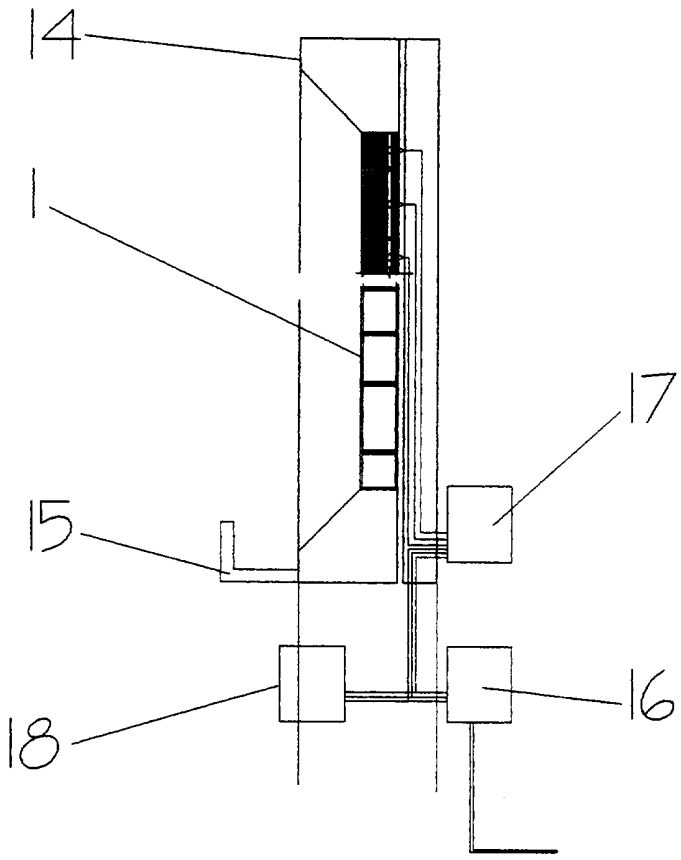


Figure 3

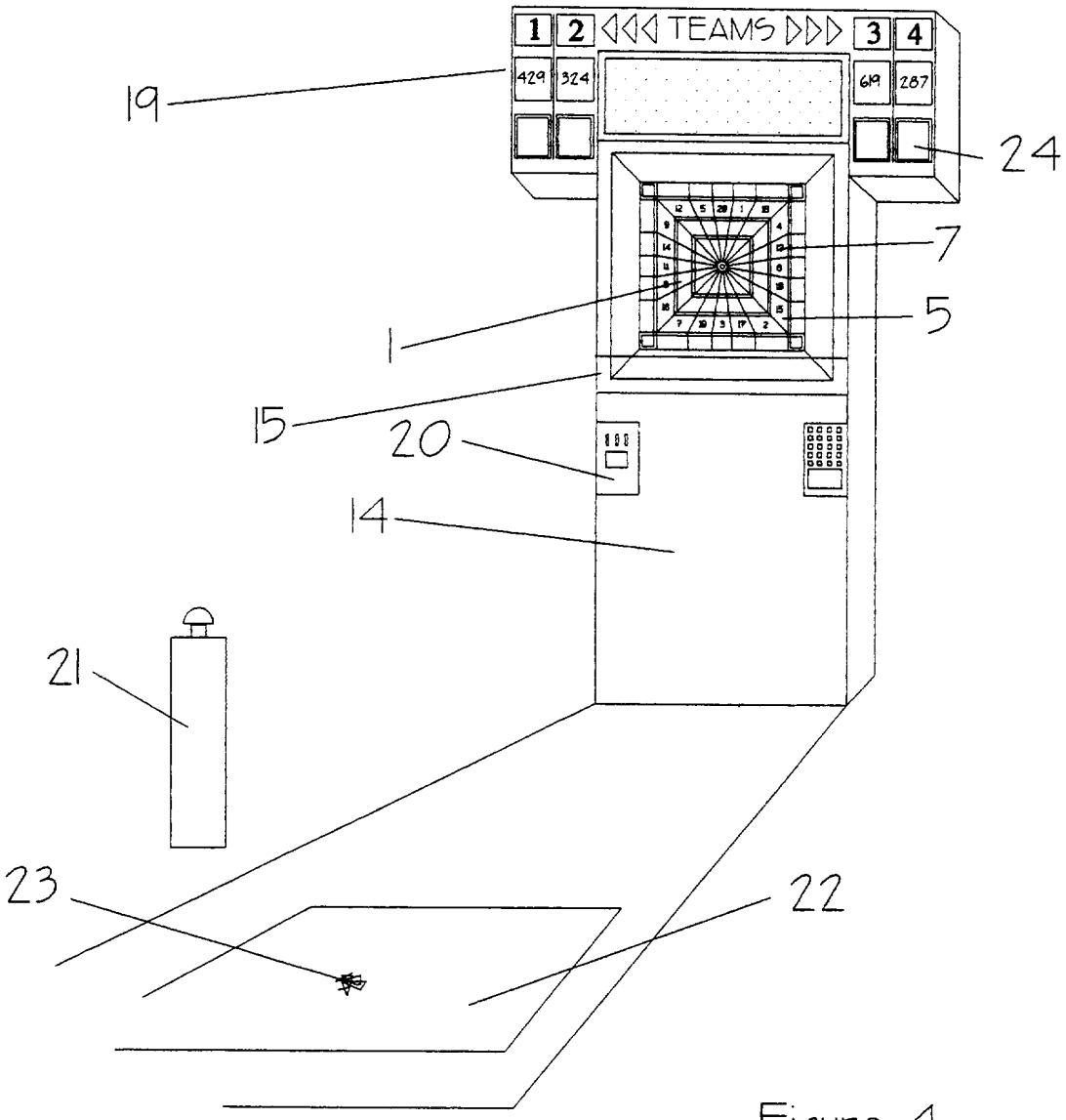


Figure 4

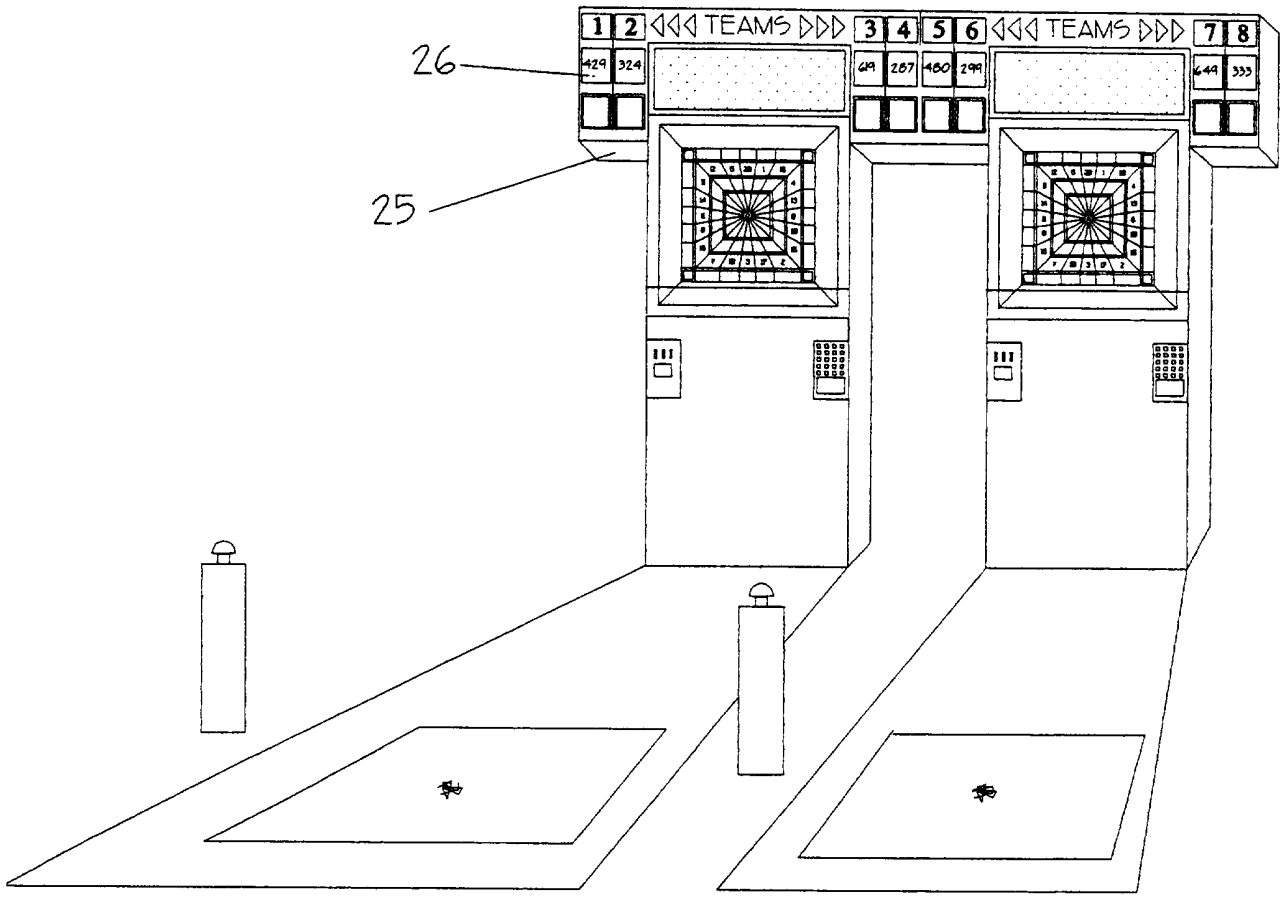


Figure 5

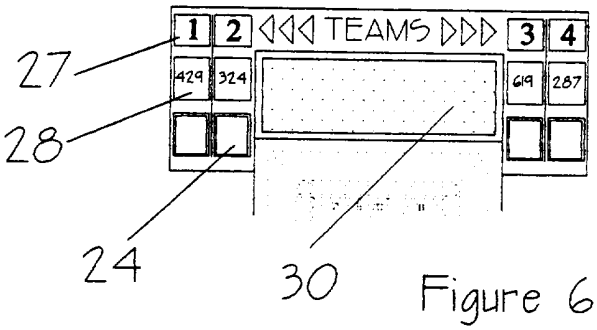


Figure 6

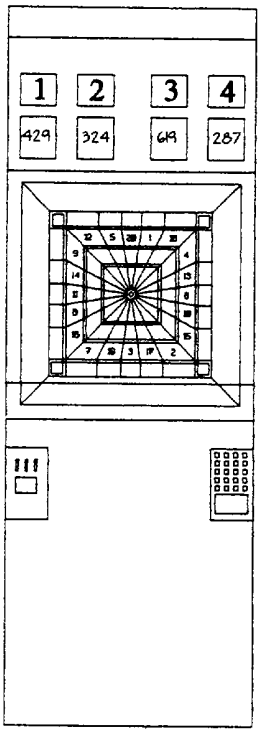
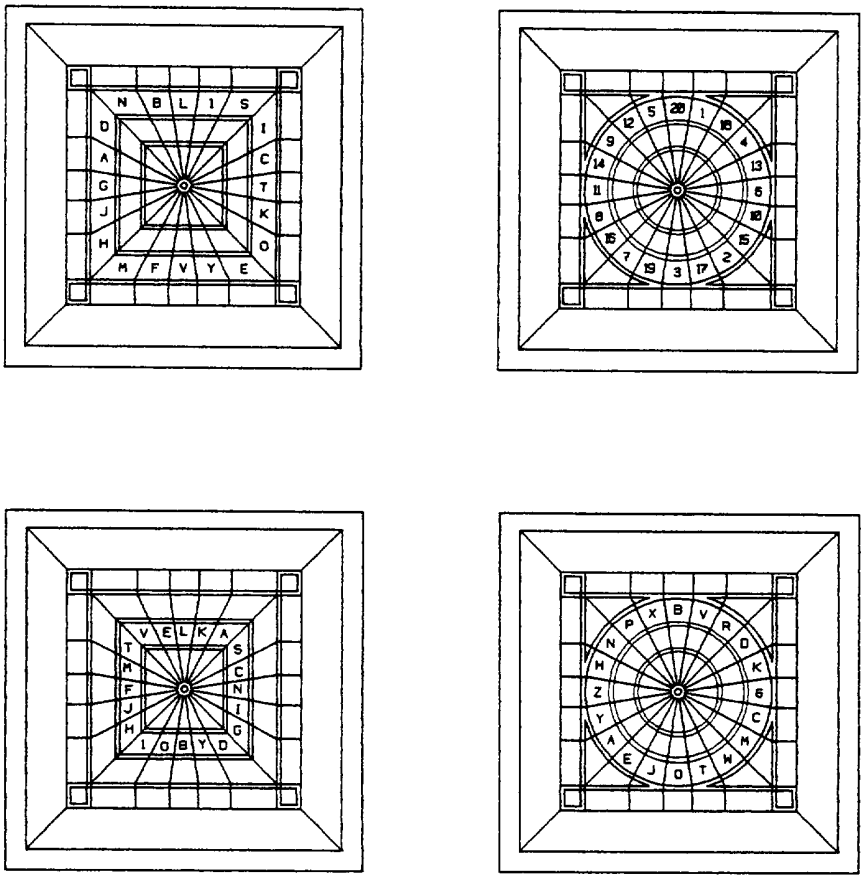


Figure 7


N B L I S
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5 20 1 18 4 13 6 10 15 2 17 3 19 7 16 11 8 14 9 12
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P X B V R D K 6 C M W T O J E A Y Z H N

Figure 8

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Invention

Apparatus for playing electronic darts

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1 May 1996

Field of the invention

The present invention relates to an apparatus for playing a game of electronic darts sometimes, but not exclusively, known as Arrow Masters and in particular provide for an apparatus that is suitable for game play use by a single person or by more than one person or by one or more than one teams of people. The apparatus is designed in such a way that it may be operated as either a single unit, with or without a coin acceptor, or can be connected together with one other or more than one other units either directly or electronically or via computer modem and used in series by individuals or teams in organised competition events.

Background of the invention

The traditional pub game of darts is well known. It is played by one or more people who throw a dart or set of darts, usually three, at a board that is circular and approximately 460mm dia . hereafter referred to as the target

The face of a target is divided up into scoring and non scoring areas hereafter referred to as beds. The scoring area of a target is further divided up, usually by a wire grid attached to the surface, into twenty equal size and shape divisions, each of which has a score number affixed to it and is further divided into four unequal size scoring beds. Two of the beds in each division score points equal to the number of that division, one of the beds score a points equal to two times the value of the number of that division, known as "a double", and one of the beds score points equal to three times the value of the number of that division, known as "a treble". In the centre of the target are two circles, a score of 25 points is allocated to the outer circle and 50 points is allocated to the centre circle which is also known as a 'bullseye.'. A player scores a point or points each time a thrown dart lodges into one of the scoring beds.

Darts is played on either a traditional solid flat round board or on a darts machine which electronically calculates the score. Different types of darts games are played, probably the most common is called '301', which means the first player to reach a score of three hundred and one is the winner.

The face layout on most targets, whether a solid board or integral within a darts machine are as previously described and generally but not always use the same size and shape grid layout and the same set and same sequence of score numbers. These are numbers 1 - 20, from the top of the target clockwise 20. 1. 18. 4. 13. 6. 10. 15. 2. 17. 3. 19. 7. 16. 8. 11.14. 9. 12. and 5.

Whereas an element of skill is required by players especially when either a double or a treble number is needed to achieve a winning score because grid layout are the same on most targets a player can, with practice, gain playing skill and therefore advantage by learning to position the body and control the throwing arm movement in such a way to hit the required area of the target virtually each time a dart is thrown so games lack interest and real excitement for these reasons.

Also, a problem with traditional darts games is that some beds are consistently used more than others. Because darts games are limited in their variety as a result of only using the numbers 1 20, this causes excessive wear and damage to those beds used most, for example the single, double and treble 20s which leaves other beds relatively unaffected. A method is described in International Patent No: WO 94/04883 to rotate beds that becomes damaged but doing that does not alter the overall layout of the face of the target or the position or the value of the score numbers.

A further problem would be where a darts competition could benefit from using more than one target at the same time, possibly where players are in different geographical locations, because there would be no way to calculate all players or all teams scores and at the same time display in a single unit which player or which team is winning at any particular point in time during a competition.

Darts games further suffer by being restricted in the variation and types of games that can be played because of the exclusive use of numbers 1 - 20. and the fixed position of those numbers within the grid and the shape and size of the target divisions as previously described.

The Invention

According to the present invention there is provided a complete and self contained apparatus that ingeniously offer an alternative game to traditional darts that gives greater variation and selection in the types of game that can be played, which generates greater excitement for spectators and darts players who are required to exercise a greater degree of skill.

The apparatus is especially suitable for competitions and organised events involving two or more than two teams containing any number of people. Points are achieved when a player throws a dart, also known as an arrow, and it lodges into a scoring bed in the target in the same way as previously described for traditional darts.

The apparatus comprises;

A target This following description is an example of a target with a typical layout but a target could also contain any number of beds and divisions and rows and those divisions and beds and rows could be any shape and any size within the confines of the target. Although numbers are used in this description the facility is to use letters, shapes or any image that is applicable to any one of a wide variety of games that can be played on the target. Whatever the shape and layout of the front face of the target, the mechanical and electronic functions and operation are exactly the same.

This described target is usually, but not exclusively of square shape. It can also be other shapes such as circular, star shape, oblong, rectangular, octagonal, hexagonal, triangular or any other recognised shape.

The target is manufactured from traditional materials such as sisal, or from other modern compressed or formed materials, in two halves, or faces, a front face and a back face. The front face of the target divided up into 20 divisions achieved from an exact centre point on the target and outwards to the edges resulting in five divisions on the left side, five exactly similar divisions on the top, five exactly similar divisions on the right and five exactly similar divisions on the bottom.

The face of the target is further divided into rows resulting in a plurality of beds, some of which are scoring beds and some are non scoring beds, and each one being separate to and insulated from the next and is housed in a metal or plastic tray. Each of the beds, 140 in total has its own identity and the connecting or adjoining edges of each tray housing provide the visual grid lines that clearly defines the 20 divisions and the 7 rows.

Row 3 on the target contains 20 non scoring beds into which is constructed a further housing with a transparent cover over an LCD face which is beneath it and shows the score number for that division.

The uniqueness of this aspect of the invention is that it provides for any or all of the score numbers value to simultaneously and randomly change value to create an impression that the number moved into another division thereby making play more exciting than traditional darts and also requiring far more skill. So, for example, one player may start a game with number 20 in the top centre position on the target and number 1 in the next bed on its right and will then throw three or however many darts are used in that particular game. The next player in turn may find score number 6 is now in the top display and score number 19 is next to it on the right. Any one of the 20 score numbers may appear in any one of the twenty divisions

As previously stated, all dart boards and darts machines use the same fixed grid layout in the target and the same set value of numbers 1 - 20 positioned clockwise 20. 1. 18. 4. 13 6. 10. 15. 2. 17. 3. 19. 7. 16. 8. 11. 14. 9. 12. and 5.

According to another aspect of this invention the set of the 20 score numbers displayed in the target can be changed depending on the game selected, for example numbers 20 to 40, or 35 to 55 or 79 to 99.

A further aspect of this invention allows for a game to select sets of other value non sequential and non consecutive numbers to play, for example 1No 20 + 2No 6 + 2No 0 + 1No 49 + 3No 23 and so on to make up to the 20 divisions.

A further aspect of this invention provides for shapes or letters or names or any other image to replace numbers on the target.

A MP Logic box The back of each of the 140 separated scoring and non scoring beds on the front face of the target has a contact sensor attached to it which, when the front bed is spring or otherwise compressed by the impact of the dart, it contacts with an identical sensor point in the back face. This contact sensor is wired separately to a micro processor housed in a control or logic box. Because all the actual beds are permanently fixed in the same position on the front face of the target, and each bed in each division has its own pre set calculation function, but the score numbers in the division will change, the logic box recognises that each calculation must relate exclusively to the score number currently in that division. For example, if a dart lodges into a bed that is pre set to calculate a minus number, the logic box identifies that a deduction is to be made from the current score number displayed in that division and not an addition. Also, if a dart lodges into a bed that is pre set to calculate a double or treble number, the logic box recognises that the sum of the calculation to be added to the current accumulated score is two times or three times the score number current in that division The logic box also recognises that if a dart penetrates a bed but does not firmly lodge and then falls out, that does not constitute any score and it will ignored it, this is achieved through a built in time delay into each calculation. Detail software is not described because it will be understood and within the capabilities of a person versed in and with knowledge of the subject.

A visual display unit. Whilst each game is in play the accumulated score from one or more targets is continually updated and shown, together with other information, on a screen in the visual display unit. The display box has several screens which in addition to showing accumulated scores, other competition information or advertising is displayed. Detail of software is not described because it will be understood and within the capabilities of a person versed in and with knowledge of the subject.

A lighting display. There is also contained within the visual display unit a flashing and strobe lights system that is activated to indicate that a game is over or for other reasons depending on the requirements of game being played and detail of the software is not described because it will be understood and well within the capabilities of a person versed in and with knowledge of the subject.

A sound system. There is also contained within the visual display unit a bell or siren system that might be activated to indicate that a game is over or for other reasons depending on the requirements of the game being played and detail of the software is not described because it will be understood and within the capabilities of a person versed in and with knowledge of the subject.

A play actuator. Usually, but not exclusively there is a separate, but connected by wires or other means to the main assembly, play actuator which a player presses to indicate they are ready to proceed with the game, which then instructs the target to scramble the score numbers and re set each LCD to show 00. This actuator works in conjunction with the play position mat and detail of the software is not described because it will be understood and well within the capabilities of a person versed in and with knowledge of the subject.

Play position mat. Separate to the main assembly is a mat which is positioned at the given throwing distance from the target. When a player steps on a switch integral within the mat, or presses a switch elsewhere mounted for that purpose, it signals instruction to the MP logic box that the game is now ready to proceed and new score numbers will appear in each of the score beds in each of the 20 divisions of the target. Detail of the software is not described because it will be understood and well within the capabilities of a person versed in and with knowledge of the subject.

Casing. All the various aspects and component parts of the apparatus, except usually the actuator and position mat are contained within a casing and the actual shape and size of the casing may change from time to time.

Examples

A specific embodiment of the invention will now be described by way of example with reference to the accompanying drawings.

Figure 1 shows the front elevation of a typical target, as previously described, and essential aspects thereof

Figure 2 shows the bed layout of a typical target front face, as previously described and the bed functions of that face.

Figure 3 shows the section through the apparatus casing and the target faces together with the guard rail and position of the power box, the micro processor logic box and the games control box.

Figure 4 shows the various component parts of the apparatus assembled into a typical casing and those other parts that are not necessarily part of the casing

Figure 5 shows a typical arrangement where two competition units are joined in series.

Figure 6 shows the front elevation of a typical visual display unit.

Figure 7 shows a typical assembled apparatus that is permanently sited for use in coin operation mode.

Figure 8 shows examples of other typical target face layouts

The target as shown in figure 1 will now be described. The front face of the target (1) is arranged into 20 divisions (3) and seven rows plus four square beds (4), one in each corner, and two circles in the middle, which is one outer circle and one inner circle. Each division in row 3 of the target contains a score number bed (7).

The target as shown in figure 2 will now be described. The first row, which is around the outside edge of the face of the target, is row 1 and is typically 60mm wide (2) and which is divided into 24 separate beds. 20 of these are scoring beds, one in each of the 20 divisions (3) and 4 are non scoring (4) these are one in each corner and do not relate to any division. The 20 scoring beds in row 1 (2) provide to calculate a deduction or minus points of the same value as the score number for that division (3) at the time of calculation. The 4 non scoring beds (4) in row 1 contain flashing and strobe lights which operate at different times and for different reasons during games. Row 2 is 10mm wide (6) and is divided into 20 scoring beds, one in each division. These scoring beds are pre set to calculate two times the value of the score number (7) for the division in which they are located.

Row 3 is a 50mm wide band which is divided up into 20 non scoring beds. (5) and each bed contains a score number (7) one in each division. Set into each of these beds is a housing that contains the score number for that division and the logic of the software randomly changes the value of each score number in accordance with selected games and level of play. Row 4 is a 10mm wide band (8) which is divided into 20 scoring beds one in each division. These beds are pre set to calculate minus one point from the value of the accumulated score irrespective of the value of the score number (7) in that division. Row 5 is a 50mm wide band (9) which is divided into 20 scoring beds. These beds are pre set to calculate a points score of the same value as the score number (7) for that division. Row 6 is a 10mm wide band (10) which is divided into 20 scoring beds. These beds are pre set to calculate a points score value that is three times the value of the score number (7) in that division. Row 7 is a 50mm wide band (11) which is divided into 20 scoring beds. These beds are pre set to calculate a point score the same as the value of the score number (7) in that division.

In the centre of the target is a 20 mm dia. centre outer circle (12) and inside that there is another centre inner circle (13) that is 10mm dia. These two circles are fixed score beds, the outer circle scoring 25 points and the inner circle scoring 50 points

The apparatus as shown in figure 3 will now be described The target (1) is set into an apparatus casing (14) with a guard rail (15) positioned below it to catch any darts that may not lodge firmly in the target (1) A power box (16) and transformer is located at the back of the casing together with a MP logic box (17) which contains the microprocessor. A games control box (18) is located at the front of the casing (14) which provides to select different games or different sets of numbers and different play sequence of numbers.

The assembled apparatus as shown in figure 4 will now be described The target as previously described, (1) is fixed typically into the centre area of the casing (14). A guard rail assembly (15) is located at the bottom of the target A visual display unit (19) which shows team positions and their accumulated score is located at the head of the casing. A coin acceptor (20) is attached to the front of the casing.

The visual display box (19) also contains both flashing bulb lights and strobe lights ports which are activated in accordance with the requirements of any particular game that has been selected for play. A sound unit (24), is located either onto the head of the casing or as part of the lighting box mechanism and that too is activated in accordance with the requirements of the game that has been selected for play. A play actuator (21) is placed away from the main assembly and located near to the play position mat (22) and requires a player to push a plunger to indicate when the game is ready to commence play. When the play activator (21) is pushed it signals the score numbers (7) on the target (1) which are scrambled and then re-set to show 00 in all 20 score beds (5) in row 3.

The play position mat (22) is placed at the designated throwing distance from the target (1) and has a built in play start switch (23) .When a player activates the switch by stepping on it (23) it signals the target (1) that play is ready to commence and new score numbers are displayed in the beds (5) for their divisions.

The assembled apparatus as shown in figure 5 will now be described According to another aspect of the invention two sets or more than two sets of apparatus can be connected together which facilitates several teams to compete against each other each using different targets. In this condition there is further attached a separate competition display unit (25) which is attached to the combined apparatus. This combined scoring, lighting and sound unit (25) provides for visual and sound indication as to which player or which team is winning at any time during a game indicated by flashing light ports.

The assembled apparatus as shown in figure 6 will now be described Attached to the head of the apparatus is a visual display unit (19) which typically has up to four players or teams ports (27). Below each team port is a current score screen (28) and below that is the lighting/sound unit (24). In the centre of the visual display unit (19) ,there is a screen (30) for display of other competition information or advertising.

Claims

1 An apparatus for playing a game of electronic darts usually but not exclusively known as ArrowMasters which comprise several individual parts including a target. The target has a plurality of beds, some are scoring and some are non scoring and each one has its own identity with a pre determined calculation or other function. The score numbers or letters or shapes or images for each division randomly change their value during the operation of a game, usually but not exclusively after each player has thrown three darts, so that whereas all games might, but not exclusively, start with number 20 at the top of the target, that number might subsequently change to any one of the other nineteen in the set of twenty numbers during the course of a game. The main target is typically square in shape but could also be any other shape including circular, rectangle, star shape, octagonal or any other recognised shape. The results of the games target and calculation functions as described can be displayed on a physical mechanical target or as a video image on a VDU or similar screen.

2 An apparatus according to claim 1 whereby the calculation function of each scoring or non scoring bed can be re set to fulfil a different function or to provide a different calculation value.

3 An apparatus according to claim 1 that can replace numbers in the score display beds in the target with names or shapes or other images.

4 An apparatus according to the previous claims whereby a variety of different skill levels for games can be selected.

5 An apparatus according to the previous claims whereby different sets of numbers values or letters or shapes or other images are used.

6 An apparatus according to previous claims whereby different numerical sequences are used

7 An apparatus according to previous claims whereby the shape of the face of the target can be changed

8 An apparatus according to previous claims whereby each player signals readiness for their play to commence by striking a plunger or an actuator which scrambles the score numbers on the target and re set all at 00 or other numbers.

9 An apparatus according to previous claims whereby the actuator can be used for other game functions and game instructions.

10 An apparatus according to previous claims whereby a play positioning mat with a foot switch control at the throwing distance signals to the target to re set score numbers.

11 An apparatus according to previous claims whereby the play positioning mat with a foot switch which is used for other game functions and instructions.

12 An apparatus according to the previous claims that has a visual display box that is integral within the apparatus and is divided into several screens to show current game score and or other information depending on the type of game being played and the level of play.

13 An apparatus according to the previous claims that has a flashing and strobe lighting arrangement to indicate when a game is over, or at other times depending on the type of game in play.

14 An apparatus according to the previous claims that has a bell or similar sound device to indicate when a game is over, or at other times depending on the type of game in play.

15 An apparatus according to previous claims that can be operated as a single game machine with a coin acceptor

16 An apparatus according to previous claims that can be joined together with another one or more than one apparatus for use in series.

17 An apparatus according to previous claims that has an independent lighting and sound system for enhanced visual display when two or more apparatus are connected together for series use.

18 An apparatus according to claim 1 whereby the unique actions and functions of the hard target can be displayed by electronic images onto a VDU or other screen within the concept and operation of a video game.

19 An apparatus according to claim 1 whereby the target can have more than or less than 20 divisions and 7 rows.

20 An apparatus according to claim 1 whereby the housing for the numbers or letters or shapes or any other image can be in any bed and in any row in any position on the target.

The Patent Office

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Application No: GB 9613554.6
Claims searched: 1 - 20

Examiner: Roger Casling
Date of search: 24 September 1997

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.O): A6S

Int Cl (Ed.6): F41J

Other: Online:WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	US 5401033 (LYCHOCK) see column 2 line 49 to column 4 line 33	1 and 12

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.