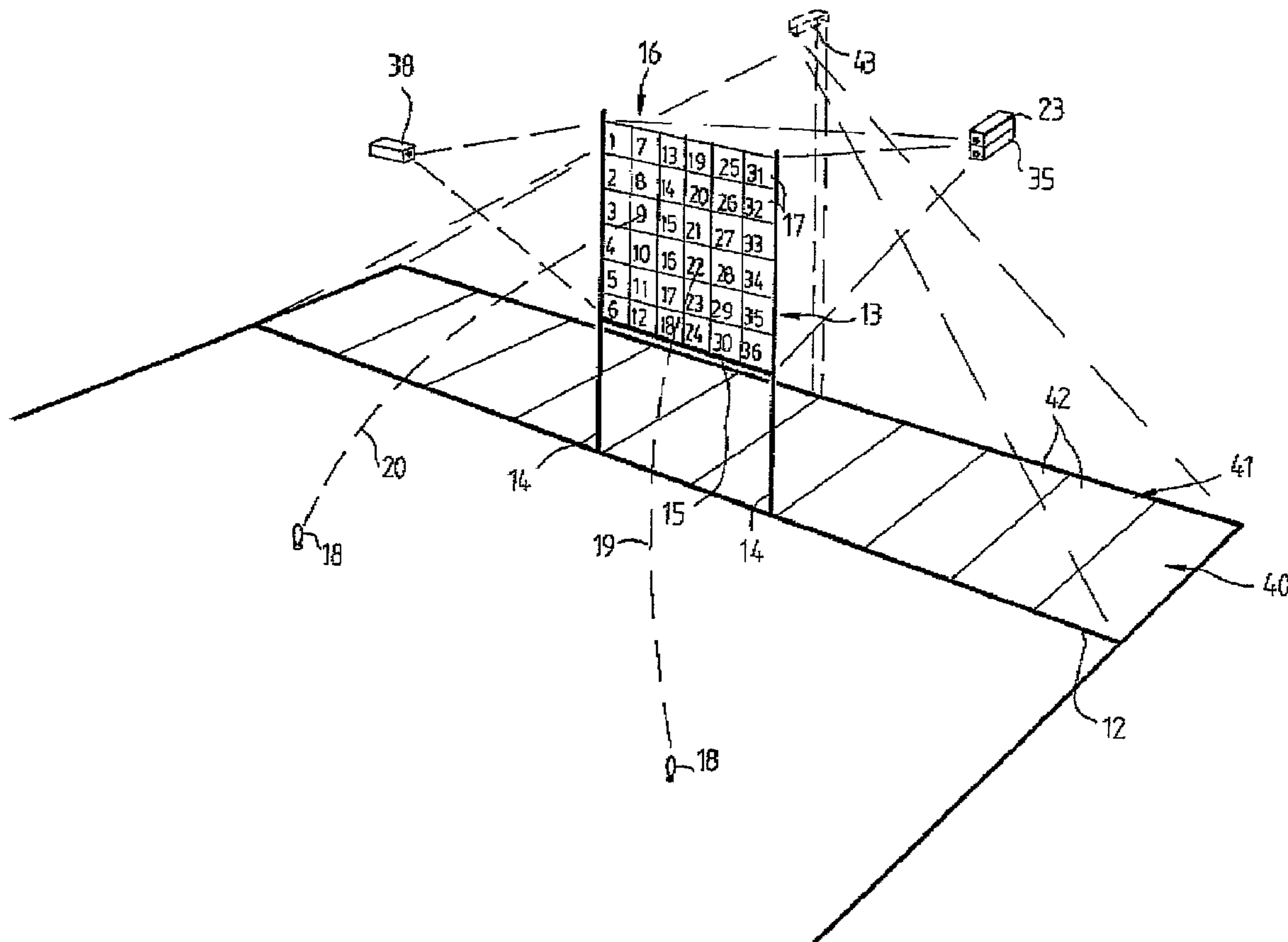




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A game of chance for playing in conjunction with a sporting contest such as Rugby Union or Rugby league in which a ball (18) is used and in which a scoring areas in the sporting contest such the goal posts (13) are divided into a number of scoring zones for

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example grid cells (17) in a grid (16) with the results of the game of chance being determined by the position or positions of the ball (18) or a movement or movements of the ball (18) into the scoring zones. The game of chance may be applied to a range of games including other football games and field games such as cricket or baseball.

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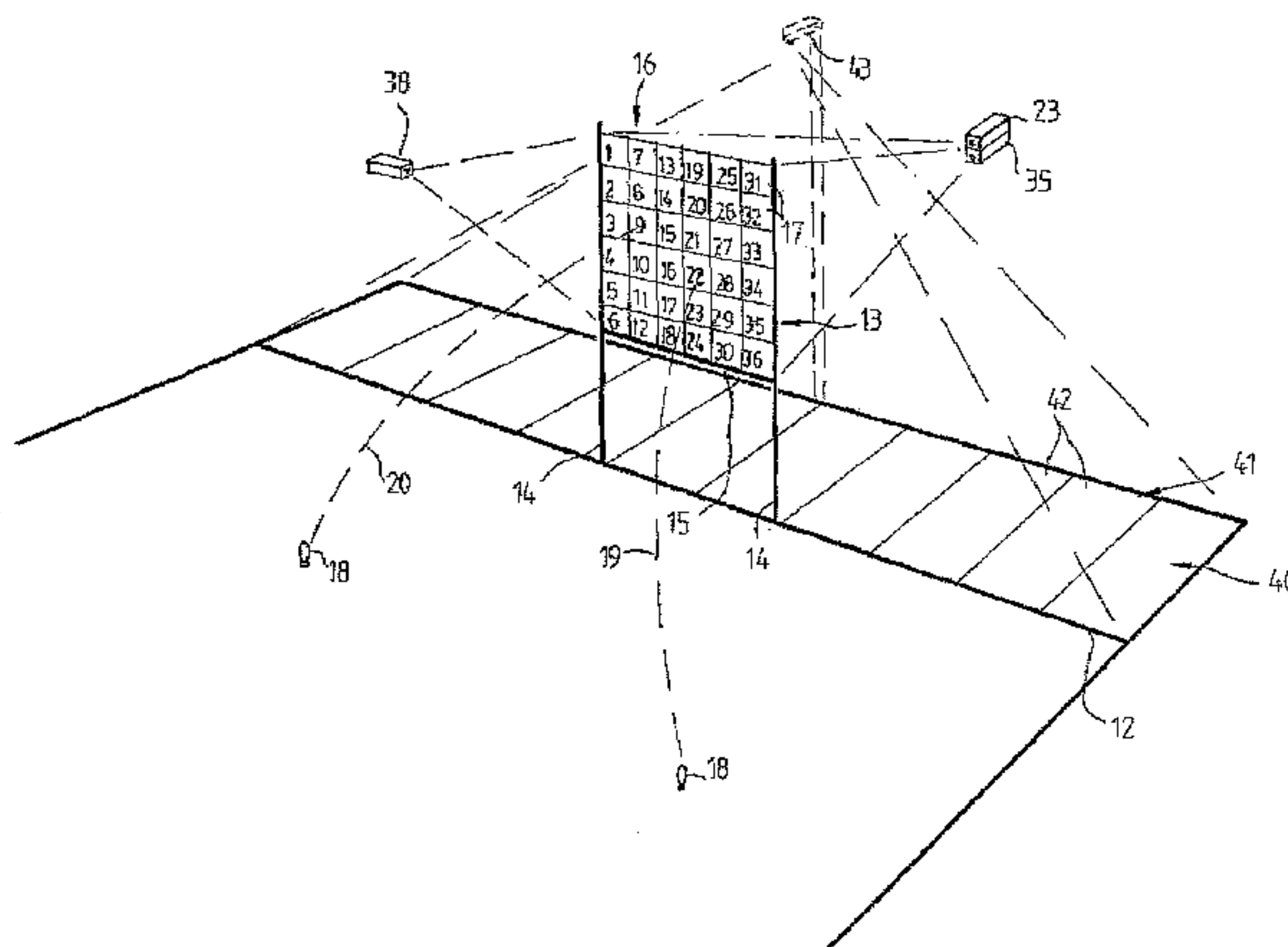
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(54) Title: A GAME



(57) Abstract: A game of chance for playing in conjunction with a sporting contest such as Rugby Union or Rugby league in which a ball (18) is used and in which a scoring areas in the sporting contest such the goal posts (13) are divided into a number of scoring zones for example grid cells (17) in a grid (16) with the results of the game of chance being determined by the position or positions of the ball (18) or a movement or movements of the ball (18) into the scoring zones. The game of chance may be applied to a range of games including other football games and field games such as cricket or baseball.

WO 2007/006083 A1

A GAME**Technical Field**

This invention relates to a game and in particular to a game of chance.

Background Art

5 Gambling games of many different forms are known ranging from gambling games in which a player bets on possible outcomes of a sporting contest or event to games in which the player does not select an outcome and his prospects of winning rely solely or primarily on chance. Games of the latter type are widespread and include gaming machines such as poker machine and many casino games. In sporting contests
10 such as football, games of chance are known in which a person purchases a ticket containing a hidden number relating to players in the sporting contest and winning is determined by the player or players who first score in the sporting contest. These types of games have limited appeal to the public as there is effectively no input by a person who purchases a game ticket. Interest in those games is often limited or lost particularly
15 if the result which determines the winner occurs quickly. Games in which player input is required are sometimes biased against persons with a particular skill. For example wagering can be carried out on the results or outcome of a sporting context or event and the margin of a win by one team over another. Generally these games have greatest appeal to persons experienced in wagering and with knowledge of team "form".

20 Summary of the Invention

The present invention aims to provide a game of chance which is based upon a sporting contest. In particular the present invention aims to provide a game in which winning of the game of chance is determined by one or more events during the sporting contest. The present invention is particularly applicable to sporting contests such as
25 football games, cricket matches, baseball, hockey or any other game in which a ball is used and in which scoring in the game is determined by a particular movement of or position of the ball during the sporting contest. Other objects and advantages of the invention will become apparent from the following description.

The present invention thus provides in a first aspect, a game of chance for
30 playing in conjunction with a sporting contest in which a ball is used characterized in that the results of the game of chance are determined by the position or positions of the ball or a movement or movements of the ball during the sporting contest.

Preferably the position or positions of the ball or the movement or movements of

the ball are positions or movements in the registering of a score in the sporting contest. Preferably a score in the sporting contest is registered by movement of the ball into or the positioning of the ball in a scoring area. Preferably particular positions of the ball or movements of the ball correspond to a particular numeral or symbol which determine
5 winners of the game of chance.

Preferably the scoring area is divided up into zones which represent respective numerals or symbols such that the position of the ball in a zone or movement of a ball through that zone represents a corresponding numeral or symbol relating to that zone. The scoring area is most preferably defined by a grid comprising a plurality of grid cells
10 defining respective zones, each of which represents or is associated with a numeral or symbol. Thus movement of the ball into a particular grid cell or movement of the ball through a particular grid cell represents a particular numeral or symbol. If the ball does not fit with a particular grid cell, the grid cell through which the a major portion, that is greater than 50%, of the ball passes or in which the major portion of the ball is
15 positioned comprises the grid cell which identifies the numeral or symbol associated with that position or movement of the ball. The grid may comprise a rectangular grid or any other form of grid either rectangular or non-rectangular and may comprise any number of grid cells.

Preferably the numeral or symbol associated with a particular grid cell is
20 changed, typically randomly changed, after the ball (or a major portion of the ball) passes through or is positioned in, that cell.

Preferably the grid comprises a grid which is not visible on the sporting field. Most preferably the grid comprises a grid image which is superimposed upon a visual image of the sporting field. Thus the grid can be displayed on a video display screen on
25 the video screen at a sporting arena and/or on a video screen of a television or other monitor. The grid thus may comprise a computer generated grid, the grid including a plurality of grid cells each of which may bear a number or symbol such that the movement or position of the ball in scoring is apparent on the grid and thus corresponds to a particular grid cell and therefore numeral or symbol marked or appearing on or
30 within the cell.

The resultant number or symbol corresponding to the position of or movement of the ball in or through a particular grid cell determines the winner of the game of chance. Most preferably, a winning combination of numerals or symbols comprises a

combination of a series of numerals and/or a combination of a series of symbols which are representative of a corresponding number of movements or positions of the ball through or in a grid cell in a corresponding number of scores.

When sufficient numbers of numbers or symbols/logos of the winning combination are not determined by movements or positions of the ball in the sporting contest, outstanding numbers or symbols/logos in the winning combination may be determined randomly. Alternatively the outstanding number or numbers may be determined by input from a spectator and/or any other person such as a VIP. Thus for example the outstanding number or numbers may be determined by a spectator or other person positioning a ball in or moving or projecting a ball through a grid cell.

A person who wishes to participate in the game of chance may either select a series of numerals and/or symbols for entry into the game or a series of numerals and/or symbols may be selected randomly for example by a computer. In the latter option, the numerals and/or symbols may be printed on a card and supplied to the person. Alternatively, a person who purchases a ticket to enter the sports ground to watch the game may be provided with a combination of numerals and/or symbols on the entry ticket or on a card or ticket associated with and issued with the entry card or ticket. In another arrangement, tickets or cards carrying a combination of numerals and/or symbols may be supplied with the purchase of a particular product such as a newspaper or television guide. In yet another option, tickets for use in or entries in the game of chance may be sold over a standard interactive gaming platform such as the internet or mobile phone MMS or SMS to a single dedicated number globally. These forms of communication therefore allows for interactive communication with the ticket holding public for selling entries or tickets in the game and for notifying winners in the game.

A typical sports contest to which the invention may be applied may be a football game in which points or scores in the game are scored by kicking a ball through goal or scoring posts. The region between the goal posts may be divided into a grid with a plurality of grid cells each representing a respective numeral or symbol. Thus when a ball is kicked through the goal posts, the position of the ball as it moves between the goal posts comprises a position of the ball in a grid cell in the grid. That grid cell thus determines a numeral or symbol of the winning combination of numerals and/or symbols.

The winning combination may comprise a combination of numerals and/or

symbols determined by the passage of a ball through the grid defined between the goal posts. The winning combination may be defined by scoring at one end only of a sports field or at the opposite ends of the sports field. Alternatively the person who participates in the game of chance may select a combination of numerals and/or symbols which he/she considers may be determined by the ball being kicked through the goal posts at one end only of the sports field. If there is insufficient scoring in the game to produce a sufficient number of numerals and/or symbols in the winning combination, one or more numerals and/or symbols may be selected or generated randomly at the end of the game to define the winning combination. Alternatively, the prize pool may be jackpotted for the next game.

The football game may be rugby league, rugby union, Australian rules or American football where points are scored by kicking balls through goal posts. Alternatively, the football game may comprise a soccer game where goals are scored by kicking balls into a goal.

In another arrangement particularly applicable to rugby league and rugby union where tries are scored behind a goal line or American football where touchdowns are scored behind a goal line, the area behind the goal line may be divided into a grid which is superimposed as a grid image on an image of the football field with the grid having a number of grid cells each representing a respective numeral and/or symbol. Thus scoring of a try behind an opponent's goal line positions the ball in or primarily in grid cell and thereby determines a numeral and/or symbol of the winning combination. Similarly the place behind a goal line at which a touchdown occurs comprises a place in a grid cell of a grid and can also represent a numeral and/or symbol.

In another aspect, the present invention provides a game of chance for playing in conjunction with a game in which a ball is struck into a scoring area characterized in that the results of the game of chance are determined by the position or movement of the ball into said scoring area. The present invention in this aspect may thus be applied to the game of cricket or the game of baseball. In the former game, regions in the cricket ground where a "six" or "four" may occur can be divided on a video screen into a computer generated grid with grid cells of the grid each of which represents a different numeral and/or symbol. Thus if a ball is hit to score a six, the particular region in which the ball lands represents a numeral and/or symbol as determined by the grid cell corresponding to that particular region. The winning combination of numerals and/or

symbols comprises a plurality of numerals and/or symbols determined in this manner. In relation to the game of baseball, a baseball field may be divided into a grid and the position in a grid cell in which the ball lands, is caught or is stopped by a fielder provides a numeral and/or symbol of the winning combination.

5 The present invention whilst suitable for use in the above ball games may be applied to any other ball game.

In another aspect, the present invention provides apparatus for use in a game of chance for playing in conjunction with a sporting contest in which a ball is used, said apparatus including means for capturing images of said ball during said sporting contest
10 and means for determining the position of said ball relative to, or movement of said ball into, a prescribed area to determine the results of said game of chance.

Preferably the prescribed area comprises an area into which the ball is positioned or moved into in scoring in said sporting contest, the apparatus suitably including means for monitoring the area whereby to determine the position of a ball in, or movement of a
15 ball into, said prescribed area. The apparatus suitably comprises means for dividing the area into zones which represent respective numerals and/or symbols.

The apparatus suitably also includes means for dividing the area into a grid comprising a plurality of grid cells comprising respective zones, each grid cell representing or being associated with a numeral and/or symbol. Means are also suitably
20 provided for capturing an image of the prescribed scoring area. Means suitably are provided for superimposing an image of the grid on the image of said scoring area.

Brief Description of the Drawings

In order that the invention may be more readily understood and put into practical effect, reference will now be made to the accompanying drawings which illustrate a
25 preferred embodiment of the invention and wherein :-

Fig. 1 illustrates schematically a football field for playing a game of rugby league or rugby union provided with a scoring grid for use in the game of chance of the invention;

Fig. 2 illustrates schematically the manner in which a numeral or symbol in a
30 winning combination is established in the game;

Fig. 3 illustrates in block diagram form typical apparatus for use in establishing the winning combination in the game of chance as to the game of rugby league or rugby union; and

Fig. 4 illustrates schematically a cricket field with a scoring grid for use in a game of chance according to another embodiment of the invention.

Detailed Description of the Preferred Embodiment

Referring to the drawings and firstly to Figs. 1, there is illustrated a conventional
5 football field 10 for use in playing a game of rugby union or rugby league. The field 10 includes a rectangular playing area 11 having transverse goal lines 12 at each end and goal posts 13 positioned intermediate opposite ends of each goal line 12, the goal posts 13 being of H-shaped configuration and including a pair of spaced uprights 14 and a cross bar 15 extending between the uprights 14. Scoring is achieved by placing the
10 football on or into the region beyond the goal line 12 known as the in-goal area to score a try and scoring is also achieved by kicking a football over the cross bar 15 and between the uprights 14. Points by kicking are either scored by means of penalty goals, field goals or a conversion after a try score.

For use in the game of chance of the invention, the area between the uprights 14
15 and above the cross bar 15 is divided into a virtual rectangular grid 16, the grid 16 being capable of being displayed on a video display screen which may be in the sports ground, on a television or any other remote video screen or monitor, the grid 16 being superimposed onto an image of goal posts 13 as captured for example by a television camera. Typically the grid 16 would only be displayed during an attempt to kick a goal
20 of on a video replay of the attempt to kick a goal.

The grid 16 has a plurality of grid cells 17 defined by intersecting rows and columns and each grid cell 17 is identified by a numeral also appearing as a superimposed image on a display screen with the numerals being located within the boundaries of the respective cells 17. In the illustrated embodiment, the grid 16 is
25 formed into thirty-six cells comprising an array of six columns and six rows with each cell 17 being identified by different numerals and being respectively numbered 1 to 36. The grid 16 illustrated comprises a rectangular grid comprising thirty-six cells but may be a non-rectangular grid and comprise any number of cells.

Spectators of the rugby or rugby union game who participate in the game of
30 chance may be provided on their ground entry ticket with a series of numbers. Thus a ground entry ticket may include six numbers randomly selected from the numbers 1 to 36, for example 7,15,23,28,30,36. Alternatively spectators wishing to participate in the game of chance may purchase a ticket with a randomly pre-selected or randomly derived

set of numbers. This therefore is similar to purchasing a lotto ticket having randomly selected numbers. In yet an alternative arrangement, persons who wish to participate in the game may themselves select the series of numbers with which to play again similar to the manner of filling out an entry in lotto, that ticket carrying the selected numbers then being recorded against the player in a central computer system.

Persons who are not present at the sports game may also participate in the game of chance of the invention by purchasing a ticket remotely from the game or filling out a ticket with their own numbers and then paying for that ticket again in a similar manner to lotto.

The winning combination of numbers is determined during playing of the game of rugby or rugby league as described below. As shown in Fig. 2, in addition to scoring tries for achieving points in the game by placement of balls on or beyond the goal line 12 into the in-goal area, points are also scored by kicking balls in place kicks between the uprights 14 and above the cross bar 15 of the goal posts 13. Thus assuming the ball 18 is kicked along the trajectory 19 shown in dotted outline, the point at which the ball 18 passes through the goal posts 13 and the superimposed virtual grid 16 which appears on a video screen or monitor determines a number which forms part of the winning combination. In this case if the ball 18 is the first ball which scores points through kicking of a goal, the first number of the winning combination of numbers is the number "22", being the number associated with the cell 17 through which the ball 18 passes at the goal posts 13. Similarly the next kick of the ball 18 along the trajectory 20 through the goal posts 13 determines the second number of the winning combination. In this case the ball 18 passes through the cell identified by the number "9" which is the second number of the winning combination. Thus each goal kick in turn determines respective numbers in the winning combination. If the ball 18 does not pass exactly through a cell 17, the number in the winning combination is determined by the cell 17 through which a major portion of the ball 18 passes for example greater than 50% of the ball 18 passes.

So as to provide a degree of randomness, the cells 17 may be renumbered after each successful goal kick, for example the identifying numbers of the respective cells 17 may be randomly re-arranged after each successful goal kick. Thus if the ball 18 passes through the grid 16 at the same position in the next kick, a number of the winning combination which will be different from the previous number will be determined. Alternatively respective numbers of the winning combination which are determined by

each goal kick as above may be removed from the grid 16 so that the same number cannot appear more than once in the winning combination.

Assuming the winning combination of numbers contains six numbers, each goal kick in turn at each end of the field by either team determines each number in the combination. Alternatively, goal kicks at only one end of the field may establish the numbers in the winning combination. In yet an alternative arrangement, goal kicks by only one team may determine the numbers of the winning combination.

The game of chance may also be structured such that players in the game can select goal kicks of one or the other team or both teams to determine the numerals of the winning combinations. If there are insufficient goal kicks to determine all numerals in a winning combination, the missing number or numbers can be determined by a random selection or draw. Alternatively the winning prize can be jackpotted for the next sporting event.

The game of chance of the invention thus taps into the sports economy, incorporating itself virtually into the sporting television telecast without disrupting the game or the view of the spectator while tapping into field of play advertising opportunities and revenue generation. Once the spectators' ticket is validated they receive a complimentary game entry ticket or scratch card ticket (as referred to below) for use in the game of chance with a combination of numerals and/ or symbols/ logos out of the following possibilities using the above six from thirty-six example.

Typical tickets may comprise a single line of six randomly generated numbers from a matrix of thirty-six for entry into the game. Tickets may alternatively comprise a single line of thirty-six symbols/ logos in the associated game. Tickets alternatively may comprise a multiple line variant of the above. Tickets alternatively may comprise a scratch card with a pictured goal matrix of thirty-six cells which is scratched to reveal an associated instant prize. Tickets in yet an alternative embodiment may comprise a scratch card with a pictured goal matrix of thirty six cells which is scratched to reveal six numbers and or symbols/ logos for entry into the associated game.

In the case that there is insufficient scoring in the game to produce all necessary numerals and/or symbols in the winning combination, one or more numerals and/or symbols may be selected or generated randomly via one or more of the following possibilities. In one option, the remaining or outstanding numbers and/or symbols/logos are randomly and securely computer generated at the games completion.

For example, a 2-1 score line leaves 3 outstanding picks required in the winning combination. The outstanding numbers and/or symbols/logos may be displayed virtually at the ground and/or delivered to consumers interactively over the internet, designated broadcasting or data-casting, content services and mobile phones. In another option, six pre-selected public figures (political, sporting or entertainment identities) at the half or full time breaks in the game, each kick one ball in turn from the penalty square into the goals and in turn to determined the required remaining or outstanding numbers for the winning combination. Alternatively, six pre-selected charities/ good causes or sporting grass roots programs and their representatives have the same opportunity as above public figures, this time with a resultant associated windfall in exposure and donation opportunity to their cause. In a further alternative, six lucky gate ticket entry or seat number ticket holders are selected before the kick off and each given the opportunity at the half or full time breaks in the game to kick one ball from the penalty square into the goals and in turn select the required remaining or outstanding numbers. The lucky ticket holders not only get an experience of a lifetime to be centre field and centre stage but could also receive a supporter's pack of their team (cap, jersey, season ticket etc.). They could also win the corresponding sponsors/ logo prize for themselves and the designated charity/ good cause. Lucky gate spectator goal kicks passing through grid cells 17 which say correspond with sponsor Vodafone logo can be awarded with associated mobile phone and network connection prizes. Six pre-selected beneficiaries from a predetermined charity/ good cause or sporting grass roots program have the same opportunities as above lucky gate and or seat ticket holders. The remaining or outstanding number may be determined by a combination of one or more of the above options.

Game winners may not only receive their allocated cash prize but may experience other services and prizes such as an official club supporters prize pack of their chosen team, a sports holiday package for them and their partner/ friend including first class air tickets, five star accommodation and meals. Winners packages also may include box stadium seats to the next associated game, anywhere in the world. Depending on the sports governing body or club directive the winner may also receive signed club memorabilia, a chance to meet the team, or captains and possibly toss the coin. Depending on winners consent they may take part in a sports travel Blog logging their travel diaries and special sports event photos of their prize winning journey.

The game may also include a second chance lottery draw system based on entry being dependant on spectators collecting their lottery tickets over a season and mailing them back for recycling or a combination of one or more of the above.

It will be appreciated that the game of chance described above may be varied in a number of different ways by varying the manner in which numerals in a numeral combination are determined without departing from the principals of the invention in which numerals are determined by the position of a ball as it moves through goal posts. Determination of the numbers in the winning combination can be accurately ascertained by tracking software which from the image of the ball 18 can track its movement through the goal posts 13 and its position in the grid 16 superimposed as an image seen on a display screen or monitor.

The cells 17 in the grid 16 may, instead of being identified by numerals, be identified by symbols/logos. For example, respective cells 17 of the grid 16 may carry identifying logos associated with each team playing. In this case, the winning combination comprises a set of symbols/logos arranged in an order determined by goal kicks passing through grid cells 17 of the grid 16. After each goal kick, the symbols/logos may be randomly rearranged on the grid 16 so that respective grid cells 17 may be identified either by the same symbol/logo or a different symbol/logo.

Assuming the teams playing are represented by a tiger logo and a rabbit logo respectively, the grid cells of each grid will either be identified by a tiger logo or a rabbit logo with an equal number of each logo, in the embodiment illustrated, eighteen of each logo, being displayed. The logos are arranged randomly in respective grid cells 17 of the grid 16. After a first kick through the goal posts 13, the first logo in the winning combination is determined. The logos are then randomly rearranged in the grid 16 so that the cells 17 carry the same or different logos and the second goal kick then determines the second logo of the winning combination which may or may not be the same as the first logo. Thus a typical winning combination may comprise two tiger logos, one rabbit logo, one tiger logo and two rabbit logos arranged in order.

Again as with numerals, players may be given entry tickets into the game which bear particular combinations of logos or may purchase tickets or scratch cards which carry random combinations of logos. Players of the game of chance who wish to participate may themselves select particular combinations of logs and purchase tickets for participation in the game either at the game or at a remote location. Alternatively

entry into the game of chance may be done remotely such as by mobile phone or other mobile communication means or over the internet.

In a first option for playing the game of chance according to a practical embodiment of the invention, the teams playing are represented by their team's major sponsor branding. For example in a football game involving the teams Arsenal and Manchester United, their respective sponsors O2 and Vodafone or their club emblems/logos i.e. a Cannon and a Lion logo respectively are used in the grid cells. Thus the grid cells of each grid will either be identified by an O2/ Cannon logo or a Vodafone/ Lion logo with an equal number of each logo, in the embodiment illustrated in Fig. 3, eighteen of each logo, being displayed. The logos are arranged randomly in respective grid cells 17 of the grid 16. After a first kick through the goal posts 13, the first logo in the winning combination is determined. The logos are then randomly rearranged in the grid 16 so that the cells 17 carry the same or different logos and the second goal kick then determines the second logo of the winning combination which may or may not be the same as the first logo. Thus a typical winning combination may comprise two O2/ Cannon logos, one Vodafone/ Lion logo, one O2/ Cannon logo and two Vodafone/ lion logos arranged in order. The use of the commercial logos as above thus provides a means for advertising goods or services. It will be appreciated therefore that a large range of sponsors or other commercial entities may promote their goods and services by use of their logos in the grid cells of the game.

In a second option for playing the game, the teams playing are represented by their Federations, codes, teams major sponsor branding and/ or corporate advertisers or club emblem/ logo as in the first option above. After however a first kick through the goal posts 13 (generic football in Figs. 1 and 2), the first logo in the winning lottery combination virtually appears and transforms to reveal the corresponding cell numbers with respective numbers determined in this manner selecting the winning lottery combination. The grid 16 of cells 17 is superimposed onto a real image of the sports arena as seen for example by a television camera and displayed on a screen such as a video replay screen which may be in the sports ground, on a television or any other remote video screen/ mobile screen. The number combinations and symbol/ logos are displayed virtually for the duration of the sporting fixture over the above display options and delivered to consumers interactively over the internet, designated broadcasting or data casting, content services and mobile phones. This combination display can be

equated to and sold as an advertising dollar value depending on fixture broadcasting ratings, crowd attendance and quality and quantity of sponsor branding/ logo exposure.

In this option, the combination display allows the consumer has the traditional choice of using number picks and receive the lottery winning division and associated cash prize. Alternatively or additionally, the combination display allows the consumer the choice to use the corresponding sponsors branding/ logos to select the associated sponsor's prize package/ packages.

In a further option, the grid 16 has a plurality of grid cells 17 represented by the game provider's branding/ logo and/ or the good cause charity or charities associated with and depending on the particular sport, the particular team fixture, the period of time in history i.e. which week or month or driven by public forum, current affair needs or as directed by the game provider directed. As with the previous option, each grid cell 17 has within its boundary a numeral and associated good cause and or charities symbol/ logo. The winning number combination sequence is taken, in the illustrated embodiment of Fig. 2, from the thirty-six cell grid creating a draw specific number of corresponding good cause beneficiaries; ranging from 2 to in this case a possible 6 out of a possible 2 to 36. In yet a further option, any of the above symbol/ logo options can be used in the form of a scratch card in preference to above described lottery/ lotto formats. For example, a combination symbolled scratch card say comprising all Premier Football League Club emblems in combination with or separate from all Super Rugby League and National Rugby Union emblems. In this case scratching of the scratch card would reveal a combination partner corporate logo and associated sponsor prize giveaway, a standard cash matrix prize or a combination of above.

Of course the grid cells 17 may be identified by numerals and symbols/logos to vary the probability of a players obtaining a winning combination. Similarly the number of numerals and/or symbols/logos in the winning combination will vary the probability of winning. Various prize levels may be provided for varying degrees of concordance between the winning combination and combinations held by players for example which may only contain some of the winning combination.

Referring now to Fig. 3 there is illustrated in block diagram form typical apparatus 21 for use in the game described with reference to Figs. 1 and 2. For the purposes of creating a scoring grid 16 bounded by the opposite uprights 13 of the goal posts 13 and the cross bar 15, the apparatus 21 includes a computerised boundary

13

recognition module 22 which is designed to recognize the boundaries of the area through which or into which a game ball passes. Thus in the case of a football game of the type described with reference to Fig. 1, the boundary recognition module 22 is designed to recognise the uprights 14 and cross bar 15 of the goal posts 13. The
5 boundary recognition module 22 includes one or more cameras or other image capturing means 23 which as illustrated in Fig. 2 is/are positioned at or beyond the end of the playing area 11 so that it or they are directed towards the goal posts 13 and it or they have a field of view which captures the goal posts 13. The most preferred position for the camera or cameras 23 is a position centrally of the area of the goal posts 13 bounded
10 by the uprights 14 and cross bar 15 however the camera or cameras 23 may be positioned in other locations provided that the goal posts 13 are within the field of view of the camera or cameras 23. The boundary recognition module 22 is configured to recognize the uprights 14 and cross bar 15. This is achieved by a software programmed image recognition unit 24 which can recognize the substantially straight lines of the
15 uprights 14 and cross bar 15 by analysis of the images captured by the camera/s or image capturing means 23. A signal processing unit 25 is connected to the image recognition unit 24 and a display unit or monitor 26 so that the captured images of the uprights 14 and cross bar 15 are displayed as lines on the display unit or monitor 26 for display to an operator 27. As the camera or image capturing means 23 will recognize
20 the full length of the uprights 14 and cross bar 15, the operator 27 if desired can edit the displayed image by selecting the lines that correspond to and define the boundaries of the area to be monitored, namely the area between the uprights 14 and cross bar 15 and between the cross bar 15 and upper ends of the uprights 14. The operator 27 can edit the image by use of a computer mouse or other input device such as a stylus which may
25 be applied to the screen of the monitor 26.

After the scoring area in the goal posts 13 is defined as above, a grid input unit 28 may be used to insert an image of a grid 16 between the lines which define the uprights 14 and cross bar as displayed on the monitor 26. The operator 27 can select through a keypad 29 on the unit 28 and by pressing a "row" button 30 or "column"
30 button 31, the number of rows and columns of cells 17 required in the grid 16 which will determine the number of cells 17 which are created in the rectangular array of cells defined by the intersecting rows and columns in the grid 16. For example, the operator in the case of the grid 16 of Fig. 2 selects a grid 16 comprising six rows and six

columns. An enter button or switch 32 on the unit 28 is then actuated to insert the selected grid 16 onto the image of the goal posts 13 as previously captured and displayed on the monitor 26. The grid input unit 28 can also mark and identify the cells 17 in the grid 16 by a number or symbol with these identifiers being capable of being varied for example randomly at regular intervals or after a score as referred to above. Alternatively this may be done in the processing unit 25. The monitor 26 can also display a real time image of the goal posts 13 derived from a television camera or cameras 33 with the real time image after insertion of the virtual grid 16 being overlain by the grid 16. Alternatively the image displayed by the monitor 26 may comprise a virtual image of the goal posts 13 and the applied grid 16.

For tracking the trajectory of the ball used in the game or the position of the ball relative to the grid 16 as it passes through the goal posts 13, the apparatus 21 further includes a ball sensing module 34 which includes at least one high speed image capturing means typically a camera. The image capturing means may comprise the camera 23 used for establishing the grid 16 or alternatively may comprise a separate image capturing means. In this case the apparatus is described to include a second camera or image capturing means 35 which is positioned adjacent the camera 23 and which has a field of view which encompasses the goal posts 13 however it will be appreciated that the camera 23 may perform the function required of the camera or image capturing means 35 for both grid recognition and real time ball detection.

The camera 35, by having in a field of view which encompasses the goal posts 13, is able to capture movement of a ball into or through the grid 16. A ball recognition unit 36 is connected to the camera 35 to recognize the image of a ball used in the game to ensure that an object passing into the field of view of the camera 35 can be recognized to ensure that spurious objects passing into the field of view of the camera 35 are not identified as a game ball. The ball recognition unit 36 is set up by positioning a ball as used in the game in the field of view of the camera 35 with the output being recorded and stored in the unit 36 with the input of the operator 27 if necessary to distinguish the ball so that the subsequent passage of ball into field of view of the camera 35 can be recognized. It will thus be appreciated that the apparatus 21 can be set up to recognize any ball.

The module 31 may also include a sensor 38 to sense the passage of a ball between the uprights 13 and thus through the grid 16. The sensor 38 may include a

further image capturing means such as a camera positioned at one side of and in alignment with the uprights 13. Alternatively the sensor 38 may be any form of sensor such as a simple light sensor which will detect the passage of a ball between the uprights 14. It will of course be appreciated that many different forms of sensor may be used for detecting the passage of a ball through the goal posts 13. Thus in another form, the ball may carry a sensor or tag such as a RFID tag which can be detected as it passes through the goal posts 13. The output of the ball recognition unit 36 and the output of the sensor 38 are connected to an image processing unit 39 which will provide a computer readable output signal which defines the position of a ball as it passes between the uprights 13, the output signal being determined by the input from the camera 35 capturing images of a ball coming into its field of view and a triggering signal from the sensor 38 which indicates when the ball passes between the uprights 13.

The processing unit 39 which provides an output indicating the position of the ball is connected to an input to the processing unit 25 of the boundary recognition module 22 which positions the ball within the grid 16 and therefore determine the cell 17 in grid 16 through which the ball has passed. This appears as an image on the monitor 26. The image can also be displayed on a display screen at the ground where the sporting contest is being undertaken and/or on other local or remote monitors or display screens and typically may be broadcast over a television network through which the sporting contest is being televised. The processing unit 25 has a set of rules to determine whether a ball is within one cell or an adjacent cell of the grid for example where a ball is overlapping a boundary line of a grid 16. Thus the processing unit can determine whether the majority for example over 50 percent of a ball is within a grid cell 17 in which case the ball is taken to represent the number or symbol of that cell 17.

Thus each passage of a ball through the grid 16 can be sensed and recognized so that a set of symbols or numbers are created for that particular game which determines a winning combination of numbers and/or symbols. Each number or symbol of the winning combination is stored in the processing unit 25 until the winning combination is established. Winners in the game of chance can then be determined by presentation of winning tickets or from compute records of tickets which are purchased by players of the game.

It will be appreciated that the respective processing units 25 and 39 of the apparatus may be embodied in a single unit to provide the processing and storage

functions required. Furthermore other means may be provided to establish the position of a ball in the grid 16. For example one or more high speed cameras or image capturing means may be provided to capture the trajectory of the ball with a processing unit in this case determining by the use of tracking software and suitable algorithms the position of the ball as it passes through the grid 16. The software may in addition incorporate obstruction handling algorithms so as to compensate for players in the sporting contest potentially obstructing the view of the ball. Thus the software may recognize the ball then constantly calculate where the ball should be based on its recorded path. Once it recognizes the ball again, it calculates the path it missed because it was obstructed. The camera or image recognition unit however is preferably positioned to minimise the view of the ball being obstructed. The software may also indicate such as by an audible and/or visual signal the scoring event such as scoring of a goal and provide for animated replay of the scoring event which can be used by broadcasters and/or displayed on the video display at the ground at which the sporting contest is occurring.

In a further aspect which may be used separately or in combination with the game of chance described above, the in-goal areas 40 behind the goal lines 12 as shown in Fig. 2 may also be divided into a grid 41 with different cells 42 of the grid 41 representing different numerals and/or symbols in a similar manner to the cells 17 of the grid 16 between the goal posts 13. In this case, placement of a ball in a grid cell 42 by a player scoring a try determines a number and/or symbol of the winning combination. For monitoring of the in-goal area 42, one or more cameras or image capturing means 43 may be provided at a central position at the rear of the field as shown in dotted outline in Fig. 2, the camera or image capturing means 43 having a field of view which encompasses the in-goal area 40 and being used to establish the grid 41 and also to capture the image of a ball entering the grid 41.

The embodiment of Figs. 1 to 2 has been described with reference to the games of rugby league and rugby union however it may equally be applied to the game of American football with goal kicks determining numerals and/or symbols of a winning combination. Touchdowns behind the goal line 12 into the grid 42 may also determine numerals and/or symbols of a winning combination. The winning combination can also be determined by a combination of goal kicks and touchdowns.

The game of chance of the invention may also be applied to the game of cricket or other field game. In this case of cricket and as shown in Fig. 4, a cricket ground 44 may be divided into a series of grid cells 45 in the seating area or area 46 beyond boundary lines of the ground 44 which may be determined by walkways or aisles 47
5 between adjacent seating areas. In this case the total seating area is divided into twelve cells numbered 1 to 12. The grid cells as in the above embodiments may be viewed as an image superimposed on a real time image of the ground as displayed on any form of monitor or display screen.

In this case, numerals of a winning combination are determined by hitting of
10 sixes into the area 46. For example, a ball 48 hit with the trajectory 49 lands in the area 46 in a grid cell 45 designated numeral 12 and this establishes the number 12 as a number in the winning combination of the cells. The numbering of the cells 45 is then randomly changed. For example the cell 45 previously numbered 12 may be renumbered as 9 and similarly for the other cells 24. The winning combination of
15 numbers is then established by hitting of sixes into the same or different cells 45 in the seating area 46.

For establishing the grid cells 45 and monitoring the position or trajectory of cricket balls 48 into the area 46, one or more cameras or image capturing means 50 may be provided centrally above the ground 44. This camera location is particularly suited to
20 situations where ground is a covered ground where the one or more cameras may be mounted on the covering roof of the ground. The camera or cameras however may also be supported by balloons or a structure or structures which project over the ground 44 provided it does not interfere with playing of the game. Alternatively a series of overhead image capturing means or cameras 51 may be positioned at spaced positions
25 around the perimeter of the ground to scan a predetermined area of the ground, the image capturing cameras 51 being positioned such that the fields of view of respective cameras cover the full perimeter seating area of the ground 44. The grid cells 45 can thus be set up as previously by the use of the image capturing means 51 and similarly the passage of a ball into the grid cells 45 can be monitored or sensed by the same
30 image capturing means 51 so that its grid cell position can be determined to define a numbers or symbol of the winning combination.

As with the previous embodiments, persons entering the ground may be provided with a combination of numbers and/or symbols with their entry ticket or

alternatively purchase tickets bearing random numbers or select numbers in a ticket which they purchase. Persons remote from the ground can also participate in the game by purchasing an entry ticket in a similar manner to the purchase of a lotto ticket.

5 The numerals of course could be replaced with symbols as in the football games referred to above and the game of chance as applied to cricket may also be varied to include the scoring of "fours". For example where a four is scored, the fence area of a ground struck by a ball determines the numeral or symbol in the winning combination, the total fence area being divided into a plurality of cells bearing different numerals or symbols in a similar manner to that shown in Fig. 4.

10 The embodiment of Fig. 4 may also be applied to other field games such as baseball with the spectator area divided into cells or zones 45 such that baseballs hit into respective cells or zones determine different numbers or symbols/logos of a winning combination. Alternatively the baseball field may be divided into cells or zones such that a ball landing or stopping in a zone or cell determines a number or symbol/logo of
15 the winning combination.

It will be appreciated that the embodiments referred to above only describe some games with which the game of chance of the invention may be employed. The game of chance may be applied to any game involving a ball or other similar playing piece.

20 The terms "comprising" or "comprises" as used throughout the specification and claims are taken to specify the presence of the stated features, integers and components referred to but not preclude the presence or addition of one or more other feature/s, integer/s, component/s or group thereof.

25 Whilst the above has been given by way of illustrative embodiment of the invention, all such variations and modifications thereto as would be apparent to persons skilled in the art are deemed to fall within the broad scope and ambit of the invention as herein defined in the appended claims.

Claims

1. A game of chance for playing in conjunction with a sporting contest in which a ball is used characterized in that the results of the game of chance are determined by the position or positions of the ball or a movement or movements of the ball during the sporting contest.
2. A game as claimed in claim 1 wherein the position or positions of the ball or the movement or movements of the ball are positions or movements in the registering of a score in the sporting contest.
3. A game as claimed in claim 2 wherein a score in the sporting contest is registered by movement of the ball into or the positioning of the ball in a scoring area.
4. A game as claimed in claim 3 wherein particular positions of the ball or movements of the ball correspond to a particular numeral or symbol which determine winners of the game of chance.
5. A game as claimed in claim 3 or claim 4 wherein the scoring area is divided up into zones which represent respective numerals and/or symbols such that the position of the ball in a zone or movement of a ball through a zone represents a corresponding numeral or symbol relating to that zone.
6. A game as claimed in claim 5 wherein the scoring area is divided into a grid comprising a plurality of grid cells comprising respective zones, each said grid cell representing or being associated with a numeral and/or symbol whereby movement of the ball into a particular grid cell or movement of the ball through a particular grid cell represents a particular numeral or symbol.
7. A game as claimed in claim 5 or claim 6 wherein the numeral and/or symbol associated with a particular grid cell is changed after a ball passes through or is positioned in, that cell.

8. A game as claimed in claim 6 or claim 7 wherein said grid comprises a grid which is not visible on the sporting field.
9. A game as claimed in claim 8 wherein said grid comprises a grid image which is superimposed upon a visual image of the sporting field.
10. A game as claimed in claim 9 wherein said the grid image can be displayed on a video display screen on a video screen at a sporting arena and/or on a video screen of a television or other monitor.
11. A game as claimed in claim 9 or claim 10 wherein said grid comprise a computer generated grid, said grid including a plurality of grid cells each of which bears a number or symbol/logo such that the movement of or position of the ball in scoring is apparent on the grid and thus corresponds to a particular grid cell and to the numeral or symbol/logo marked or appearing on or within the cell.
12. A game as claimed in claim 11 wherein a winning combination of numbers or symbols/logos in the game comprise a combination of a series of numerals and/or a combination of a series of symbols/logos which are representative of a corresponding number of movements or positions of the ball through or in a grid cell in a corresponding number of scores.
13. A game as claimed in claim 12 wherein when sufficient numbers of numbers or symbols/logos of the winning combination are not determined by movements or positions of the ball in the sporting contest, outstanding numbers or symbols/logos in the winning combination are determined randomly.
14. A game as claimed in claim 12 wherein when sufficient numbers of numbers or symbols/logos of the winning combination are not determined by movements or positions of the ball in the sporting contest, outstanding numbers or symbols/logos in the winning combination are determined by input of a spectator or any other person.
15. A game as claimed in claim 12 wherein a person wishing to participate in the

game may select a series of numerals and/or symbols/logos for entry into the game or a series of numerals and/or symbols/logos may be selected randomly and issued to the participant.

- 5 16. A game as claimed in claim 15 wherein said numerals and/or symbols/logos are provided on a card or ticket and supplied to the user.
17. A game as claimed in claim 16 wherein said card or ticket comprises an entry card or ticket into said sporting contest or a card or ticket associated with said entry card
10 or ticket.
18. A game as claimed in claim 13 wherein participants in said game are supplied with number and/or symbols/logos interactively over the internet, by mobile phone MMS and SMS or by other remote communication means.
15
19. A game of chance for playing in conjunction with a football game in which points or scores in the game are scored by kicking a ball through goal or scoring posts characterized in that the results of the game of chance are determined by the position or movement of the ball through said goal posts during said football game.
20
20. A game as claimed in claim 19 wherein the region between the goal posts is divided into a grid comprising a plurality of grid cells, each representing a respective numeral or symbol whereby when a ball is kicked through the goal posts, the position of the ball as it moves between the goal posts comprises a position of the ball in a grid cell
25 in the grid.
21. A game as claimed in claim 20 wherein a winning combination in said game comprises a combination of numerals and/or symbols determined by the passage of respective balls through the grid defined between the goal posts.
30
22. A game as claimed in claim 20 to 21 wherein one or more of the numerals and/or symbols in the winning combination are selected or generated randomly.

23. A game of chance for playing in conjunction with a football game in which a ball is required to be placed or positioned in a scoring area behind a goal or scoring line to score points or scores in the football game characterized in that the results of the game of chance are determined by the position or movement of the ball into said scoring
5 area.

24. A game of chance as claimed in claim 23 wherein said scoring area is divided into a grid comprising a plurality of grid cells each representing a respective numeral and/or symbol and wherein positioning of a ball in or primarily in a grid cell and
10 thereby determines a numeral and/or symbol of a winning combination of numerals and/or symbols in said game of chance.

25. A game of chance for playing in conjunction with a game in which a ball is struck into a scoring area characterized in that the results of the game of chance are
15 determined by the position of or movement of the ball into said scoring area.

26. A game of chance as claimed in claim 25 wherein said scoring area comprises a grid comprising a plurality of grid cells, each representing a different numeral and/or symbol whereby a numeral or symbol of a grid cell into which a ball is struck defines a
20 numeral and/or symbol of a winning combination of numerals and/or cells in said game of chance.

27. Apparatus for use in a game of chance for playing in conjunction with a sporting contest in which a ball is used said apparatus including means for capturing images of
25 said ball during said sporting contest and means for determining the position of said ball relative to, or movement of said ball into, a prescribed area to determine the results of said game of chance.

28. Apparatus as claimed in claim 27 wherein said prescribed area comprises an area
30 into which said ball is positioned or moved into in scoring in said sporting contest, said apparatus including means for monitoring said area whereby to determine the position of said ball in, or movement of said ball into, said prescribed area.

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29. Apparatus as claimed in claim 28 and including means for dividing said area into zones which represent respective numerals and/or symbols.

30. Apparatus as claimed in claim 29 and including means for dividing said area into
5 a grid comprising a plurality of grid cells comprising respective zones, each said grid cell representing or being associated with a numeral and/or symbol.

31. Apparatus as claimed in claim 30 and including means for capturing an image of
said prescribed scoring area and means for superimposing an image of said grid on said
10 image of said scoring area.

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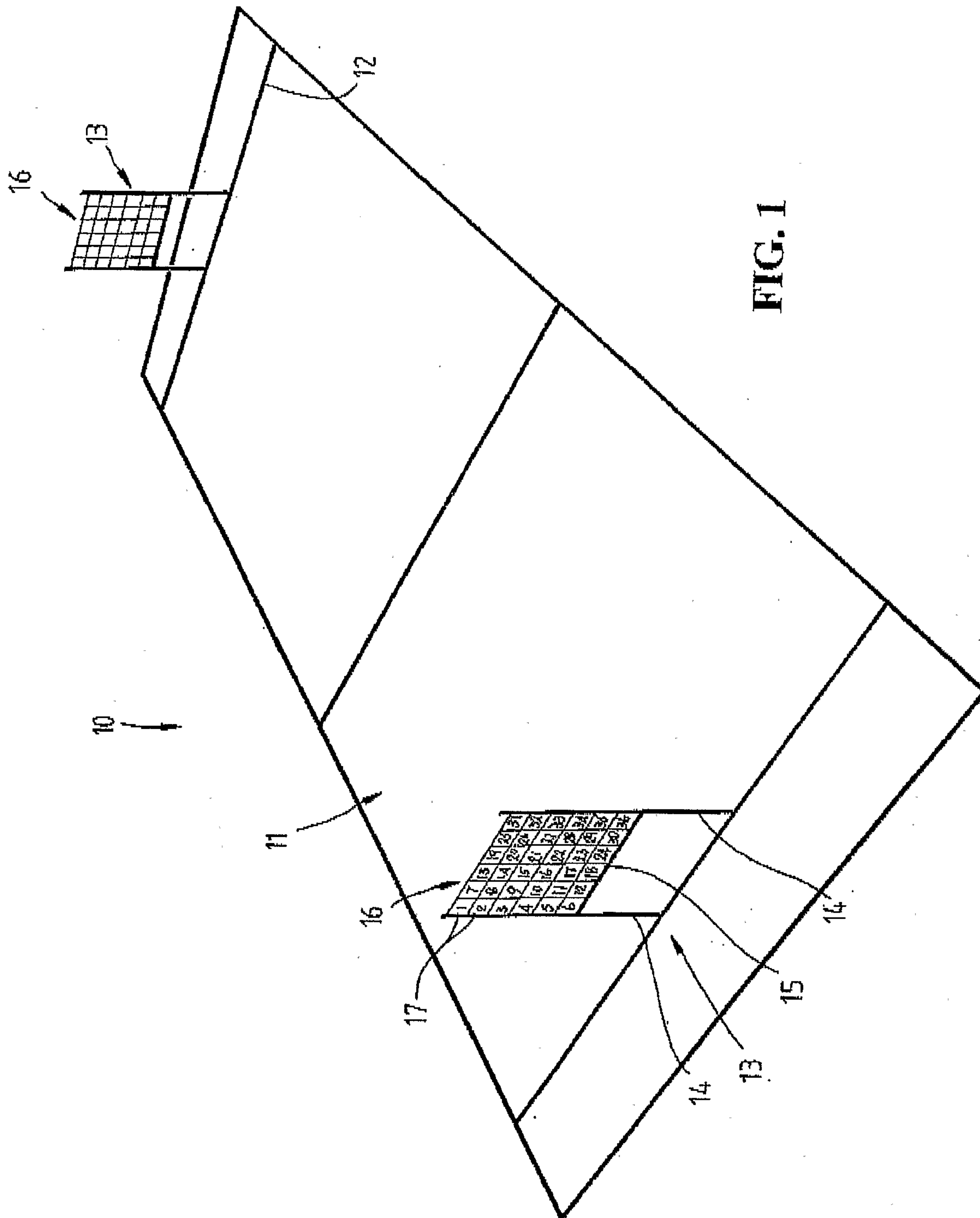


FIG. 1

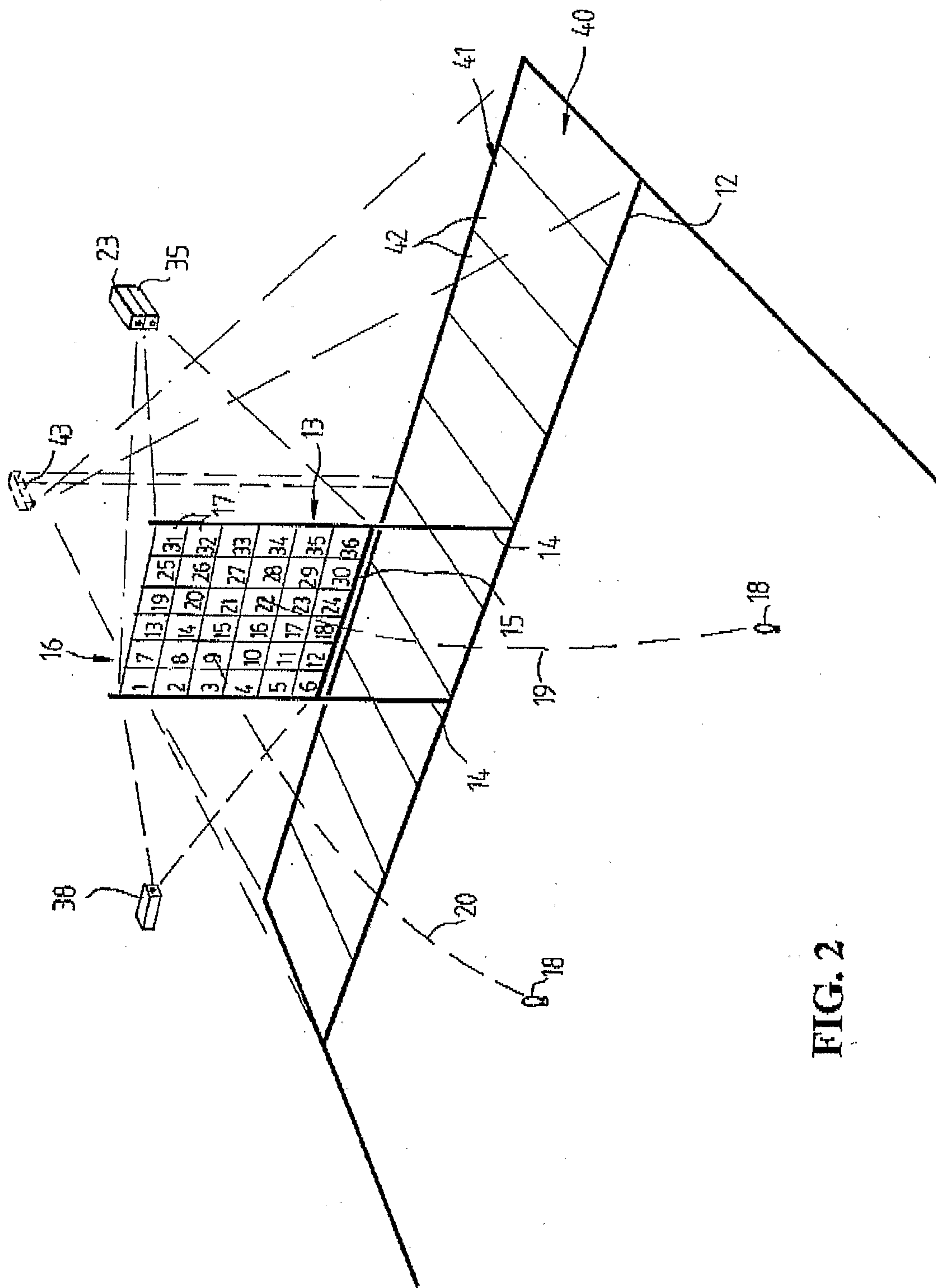


FIG. 2

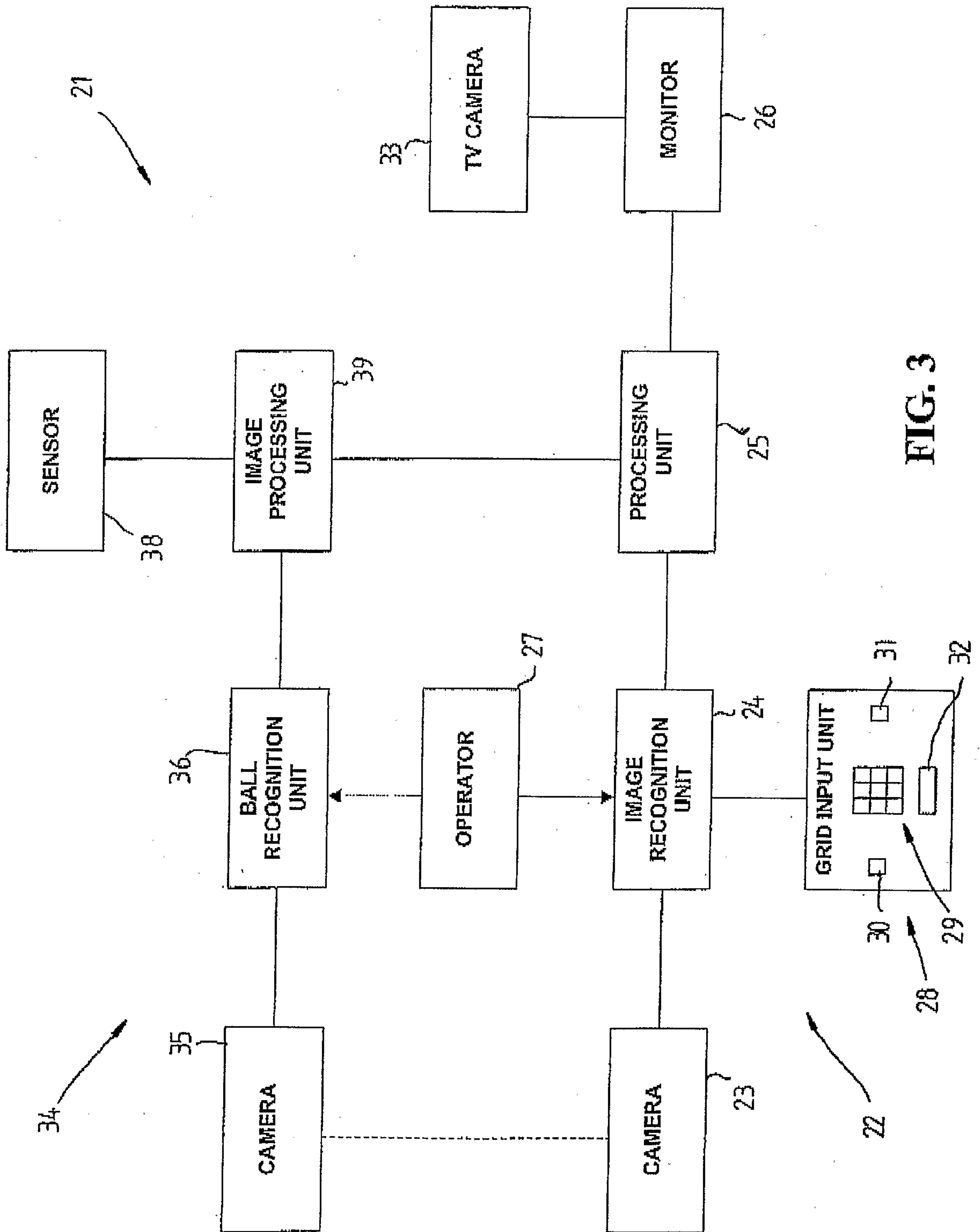


FIG. 3

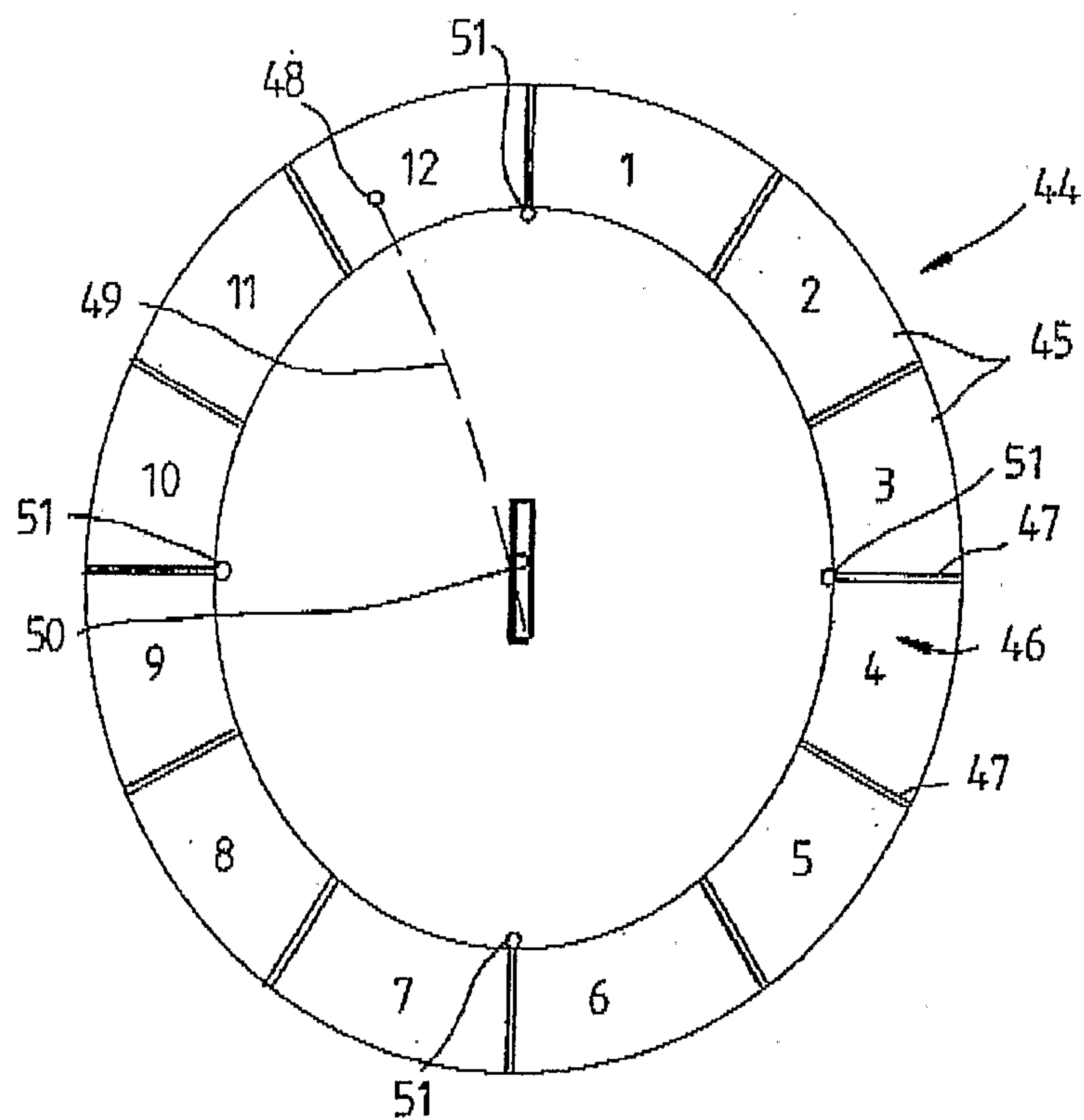


FIG. 4

