

Bill!Chess

(Patent Pending)

ABSTRACT

A billiard-type game played on a chess-like board by two players or by one player against a computer as the opponent. Each player has a complete set of chess pieces and an imaginary billiard ball. Since seeing the movements and the trajectories of the two billiard balls is essential for playing the game, the balls are replaced by laser beams in this game. Game pieces influence the path of the laser beams. This invention consists of two games – chess and an altered version of billiard – that are simultaneously played. The billiard game is heavily influenced by the movement/interaction of the chess pieces. The chess pieces (and therefore the chess game) are not influenced by the two laser beams. The game pieces are placed in a predetermined "starting" configuration and a laser source/emitter is placed in a predetermined position, in front of each player.

FIELD OF THE INVENTION

The present application relates to video games and in particular relates to video games which are easily understood, require an element of skill and are competitive.

BACKGROUND OF THE INVENTION

Games involving strategic movement and/or positioning of playing elements along a grid-based board are well known in the art. These games include (but are not limited to) chess, checkers, backgammon, go, etc. However, board game enthusiasts are continually looking for new challenges and modern games of strategy, and the features and advantages of the present invention are described in greater detail within this description.

INVENTION SUMMARY

We use the following notations:

- Laser Beam = LB;
- Red Laser Beam = RLB. Blue Laser Beam = BLB;
- Red Laser Beam Emitter = RLBE – placed at the northwest corner of the a7 square;
- Blue Laser Beam Emitter = BLBE – placed at the southeast corner of the I2 square;
- Red Achilles Heel = RAH – placed at the northwest corner of the a8 square;
- Blue Achilles Heel= BAH -- placed at the southeast corner of the I1 square;

All the graphics and the elements for which we used the above mentioned notations are in both the [Tutorial](#) and the Demo game.

The present invention combines the strategy of traditional games billiard and chess* with modern technology, for an engaging experience. **Billiard + Chess = BilliChess.**

*** NOTE that any board game where its pieces move/interact according to certain rules (well-established or newly invented) may be used.**

The game of the present invention has the universal and enduring appeal of classic games, in an embodiment which incorporates lasers.

The players have to make the best out of two strategies: The chess strategy and the Billi strategy (where “Billi” stands for the altered version of the billiard game presented here). The Billi strategy has to be rethought over and over again since the laser beams’ trajectories will be altered many times throughout the game by the movement and capturing of the chess pieces.

The game can be played with one person against another person or against a computer as the opponent. **This Demo is created as a two-player game board.**

For a more enjoyable visual experience, we define the two players as the blue player and the red player. The blue player has the blue game pieces and the Blue Laser Beam (BLB); the red player has the red game pieces and the Red Laser Beam (RLB).

Compared to the basic version described here, in future, more advanced versions of this game new features and rules will be added, including:

- a game clock. (A game clock can also be part of the basic version of the game);
- a more sophisticated score system;
- Lifelines for Knights (described in BR7);
- choice of a different (i.e. other than chess) board game;

- different board size.

As for how the chess pieces move, interact and how to checkmate the opponent's king, the chess game itself is played by the well-known established rules known by hundreds of millions of people. That is the game of chess is played on the 8X8 standard chessboard in the center of the game board: 8 columns (c to j) and 8 rows (1 to 8). The chess pieces can never reach any square in the a, b, k and l columns.

(The game of the present invention can be played on a standard 8X8 chessboard with the BLBE placed in the southeast corner of the h3 square, and RLBE placed in the northwest corner of the a6 square. Other game board sizes can be used).

The Laser Beams (BLB and RLB) are parallel to the playing surface and reflect off the frame of the board (like a billiard ball would bounce off the cushion) and interact with the chess pieces according to the following:

Basic Rules:

BR1. The pawns do not reflect any LB, that is any LB hitting a pawn will stop there;

BR2. The rooks and bishops reflect any LB;

BR3. Knights N-Reflect the laser beams.

NOTE: By Negative-Reflection (noted N-Reflection) we mean diverting the incident laser beam in the opposite direction (180 degrees) of the standard reflections defined here.

BR4. The queen will let her own color LB go through but it will block (like a pawn) the adverse LB;

BR5. The king reflects its own color LB but will let the adverse LB go through (i.e., when hit by an adverse color LB the king will let it pass like there's nothing there);

BR6. When a LB hits a reflective chess piece it acts like hitting a mirror (which mirror is parallel to the columns) precisely in the center of the square where that chess piece is.

So there are: (i) Non-reflective game pieces: eight pawns and a queen for each player; (ii) Reflective pieces (that act like two mirrors oriented back-to-back to produce separate surfaces reflecting in opposite directions): two rooks and two bishops for each player; (iii) N-Reflective pieces (see the NOTE of BR3): two knights for each player; (iv) Selectively reflecting pieces (see BR5. in Basic Rules above): one king for each player.

NOTE: All reflections are specular: The angle of incidence just before the collision is equal to the angle of reflection just after the collision. Therefore since the initial angle of the Laser Beams (BLB and RLB) is 45 degrees and all the action happens inside a rectangle-shaped game board, for all reflections the angle of incidence = angle of reflection = 45° . Thus all LB's trajectories will cross an empty square from one corner to the (diagonally) opposite corner. Also: A reflective game piece acts like two mirrors (oriented back-to-back to produce separate surfaces reflecting in opposite directions) parallel to the rows of the game board and placed on the centerline of the square it occupies.

BR7. The first knight to be moved by each player will become the Joker Knight. The Joker Knight has three lifelines: on the top of the fact that it (always, except for when using a lifeline) N-Reflects the incoming laser beams, it can let through the beams, reflect them or stop them. (By "let through" I mean the LB continues its journey unaffected, like no game piece was on that square). Each lifeline can be used only once per game and using it is at the complete discretion of the player owning the Joker. If a Joker Knight captures the adverse Joker Knight, the remaining (on the board) Joker acquires a fourth lifeline. The fourth lifeline can be one of the three mentioned ones and can be used only after the three original lifelines were consumed. Whether a lifeline is used for its own color laser beam or for the adverse beam, once it is used it's gone. The Joker can affect a laser beam only when it is hit by that beam, and the option to use a lifeline has to be made by the owner of the Joker immediately following the move (whether the move was his or not) that directed the beam to hit the Joker. The decisions to use lifelines, the blue Joker and the red Joker have no influence on the chess game, but are very important (really life savers or/and game winners) in the billiard game. This will make the Joker the most powerful game piece from the billiard game perspective.

NOTE that the lifelines described in BR7 are not used in the Demo; they will be introduced in a higher Level of the game.

The sequence (trajectories) of reflections is permanently visible in blue (for BLB) and red (for RLB).

The game board has four corners:

- The southwest corner of the a01 square;
- The southeast corner of the l01 square = BAH;
- The northeast corner of the l08 square;
- The northwest corner of the a08 square = RAH

When BLB hits any corner other than RAH, the Blue Laser will stop there and will get out of that corner due to the following movement(s)/interacting of the chess pieces.

When RLB hits any corner other than BAH, the Red Laser will stop there and will get out of that corner due to the following movement(s)/interacting of the chess pieces.

A laser beam keeps going straight down its path until it hits a game piece or the frame. The game piece or the frame will alter/divert the beam's path as described. If there is no game piece in its path, the laser beam just continues to interact with the frame eventually ending up in a loop until a game piece will end/break the loop. A laser beam can end up in a loop while interacting with one or more game pieces and/or the frame until a game piece will end/break the loop.

The objective of this game is to LaserMate -- see (B) -- the opponent. The winner of the game is the player with the highest score. The scores in this BilliChess Demo are achieved by:

(A) Checkmate (or "ACCEPT DEFEAT") = 277 points. The game continues, each player trying to LaserMate the opponent. Since the chess game is concluded there will be no other possible check or checkmate, therefore the blue and red Kings will be replaced by a blue and red Rook respectively. (We chose the Rook because it is the most mobile piece that reflects both lasers). It's Billi time! The game will continue until (B) happens, or until it is determined that (B) cannot happen.

(B) LaserMate (when BLB hits RAH – blue wins, or when RLB hits BAH – red wins) = 500 points. A LaserMate ends the game.

NOTE that a lasermate can occur before a checkmate.

The invention is intended to embrace all alterations, modifications and variations that fall within the spirit and scope of the above description. For example, it is not necessary that the game be played on a computer: The game can be played as a board game, in a less convenient manner than that facilitated by a computer and a computer network.

ABOUT THE DEMO

BilliChess has the remarkable distinction of being more sophisticated and challenging than Chess. [Deep Blue](#) was the first machine to [beat](#) a reigning World Chess Champion when it defeated Garry Kasparov in 1997. BilliChess is the 21st century challenge for a Deeper Blue.

(By "Billi" as a verb we mean playing the altered version of the billiard game presented here)

There are [over 600,000,000 chess fans, of which 285,000,000 play it online](#). All of them know the chess rules and how to checkmate, but none of them, as of now, know how to “Billi” or how to lasermate. One can only be a good BilliChess player by improving his/her Billi skills to a desired level of at least his/her chess skills (remember that a lasermate is rewarded with more points than a checkmate).

In order to give players the opportunity to better their Billi skills we offer a special option in the Demo version: At any time during the game the players can choose to give up the chess game by clicking on the “LET’S BILLI” button. From this moment on the players will only Billi. Since the game of Chess is concluded, checks and checkmates don’t make sense at this point in the game, so when a player clicks the “LET’S BILLI” button the red King and the blue King will be replaced by a red Rook and a blue Rook respectively.

NOTE that “LET’S BILLI” makes perfect sense in several situations, including [draw by agreement](#), [stalemate](#), [threefold repetition](#) of a position, the [fifty-move rule](#), or a draw by impossibility of checkmate (usually because of insufficient material to checkmate).

The “ACCEPT DEFEAT” button is used when a player is checkmated, in imminent checkmate, or in a hopeless position. The button is clicked to accept defeat in the chess game only. The difference between “ACCEPT DEFEAT” and “LET’S BILLI” is ... 277 points

In BilliChess only legal chess moves can be made.

A player may not make any move which would put or leave his king under attack. If the player to move has no legal moves, the chess game is over; it is either a [checkmate](#) - if the king is under attack - or a [stalemate](#) - if the king is not.

[\(see the Tutorial\)](#)