May 14, 1929. J. YOUNG 1,713,247

MECHANICAL BALL GAME

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Fig. 1

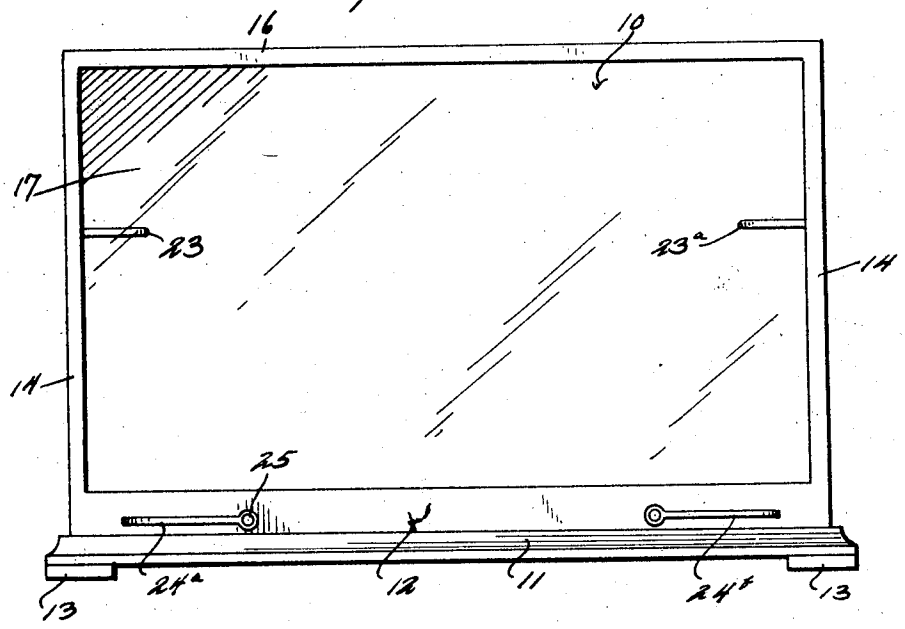


Fig. 5

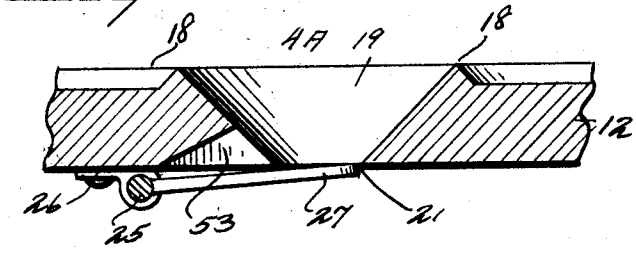
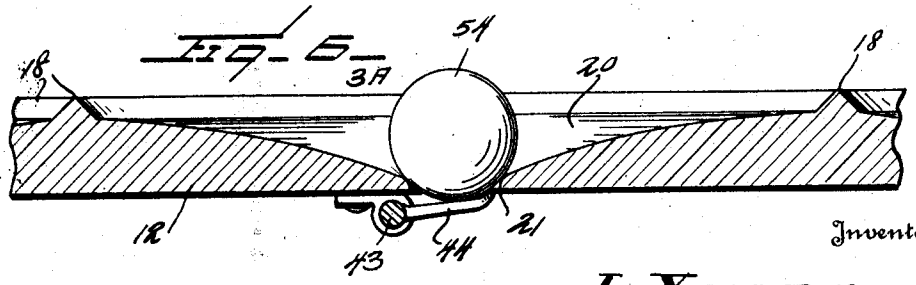


Fig. 6



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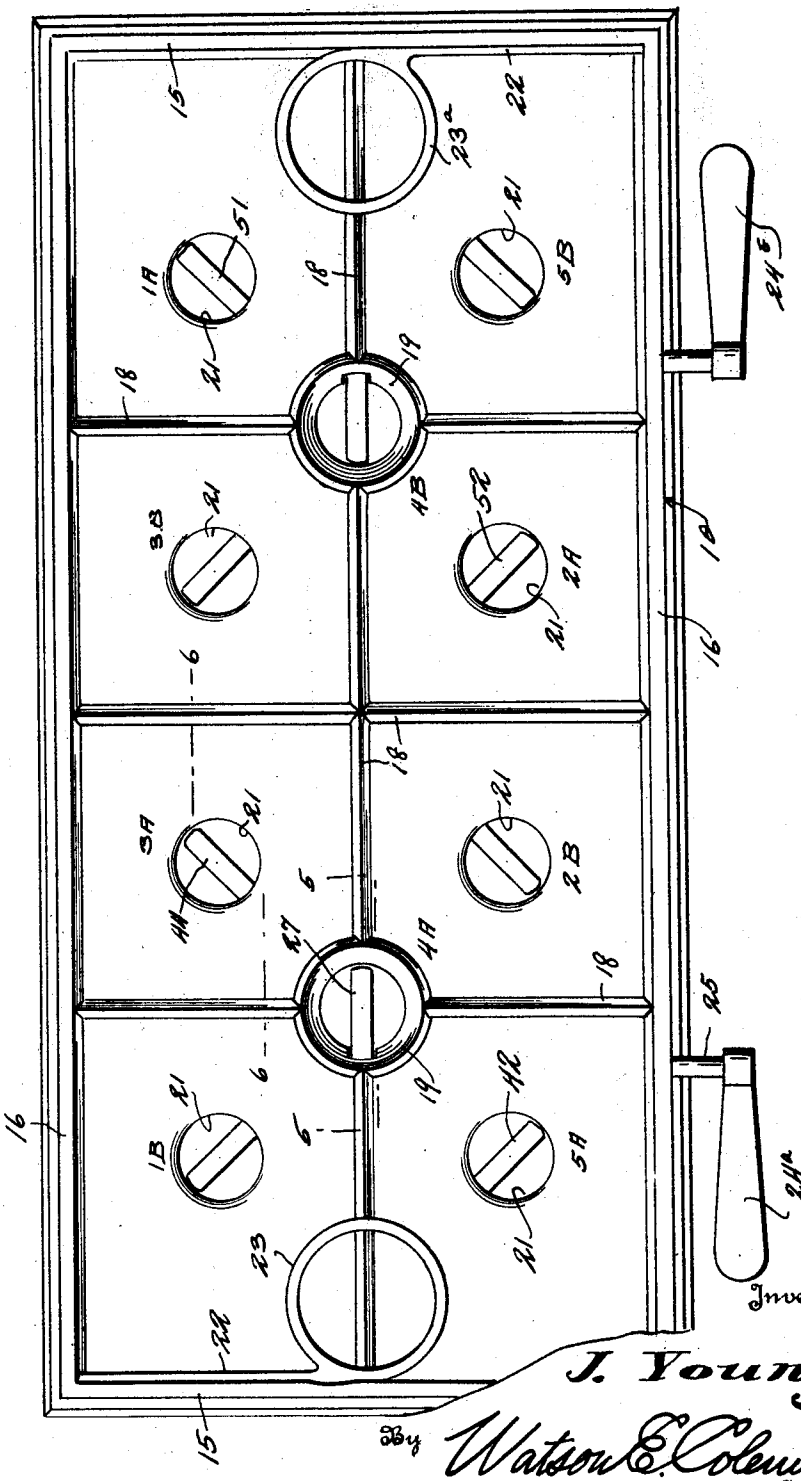


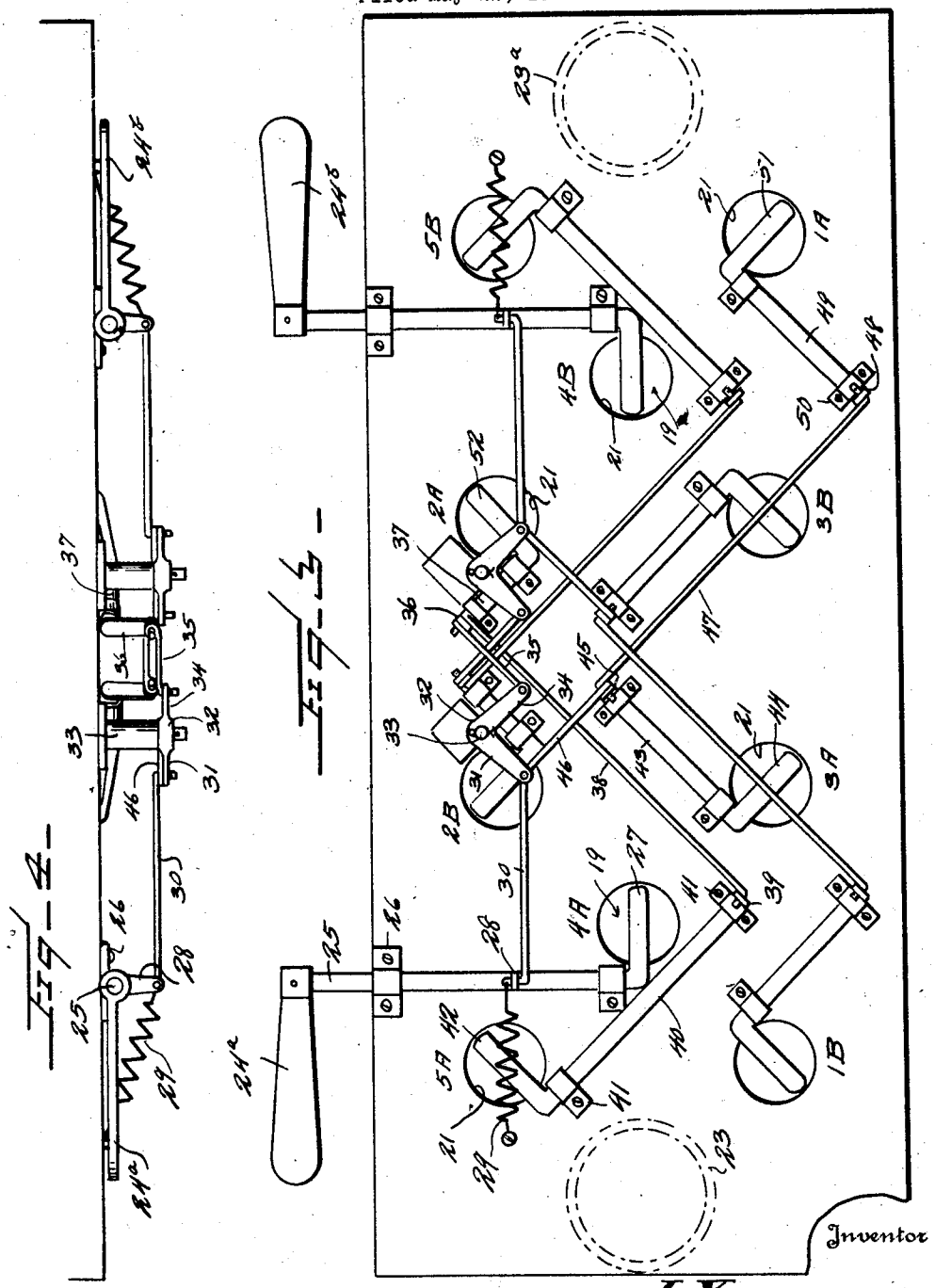
Fig. 2.

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MECHANICAL BALL GAME

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UNITED STATES PATENT OFFICE.

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MECHANICAL BALL GAME.

Application filed May 22, 1928. Serial No. 279,697.

This invention relates to mechanical ball games, and particularly to a mechanical basketball game.

The general object of the invention is to provide a miniature basketball court enclosed in glass and having the similitudes of baskets at the opposite ends of the glass case, and provide manually controllable means whereby the ball may be shifted from one end of the court toward the other by one player or in a reverse direction by the other player and whereby the ball may be discharged upward, if possible, to make a goal from the field.

A further object is to provide a device of this character having the floor of the case formed to provide a plurality of depressed portions, each depressed portion having a cup-shaped center in which the ball will lodge, each cup-shaped depression having a kicker or finger disposed therein, half of the cups having their kickers connected to one operating means for one player and the other half of the cups having their kickers operatively engaged with another operating means operated by the other player, the kickers or fingers being so disposed that when it is operated it will tend to throw the ball from one cup to another cup of the same players and so on until the ball is in position for a try for goal.

A still further object is to provide a construction of a relatively simple character for this purpose wherein one single handle operates all of the kickers of one series or belonging to one player, to provide means whereby the ball will be found to roll into one of the sets of cups so that the ball is always in position to be kicked or thrown by the kicker, and to provide goals or "baskets" consisting of annular members through which the ball may pass so that the ball after passing into the "basket" will descend onto the floor for re-operation.

My invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a side elevation of a mechanical ball game constructed in accordance with my invention;

Figure 2 is a top plan view of the board;

Figure 3 is an under side plan view of the board;

Figure 4 is a fragmentary elevation showing the devices for actuating the ball kickers;

Figure 5 is a sectional view on the line 5—5 of Figure 2;

Figure 6 is a sectional view on the line 6—6 of Figure 2.

Referring to these drawings, and particularly to Figure 2, it will be seen that the field or court upon which the game is played is disposed within a glass case, designated 10, this being mounted upon a base 11, which base supports the game board or court 12. The base in turn is preferably supported by feet 13.

Extending upward from the corners of the base are the corner irons or posts 14, the opposite posts being connected by transverse members 15 and longitudinal members 16, and panes of glass 17 are disposed to extend across the ends, the sides and the top of the case so that the board may be readily seen. The board or floor 12 is divided by division ridges 18 into a plurality of squares, shown as eight in number. The division ridges run transversely and one division ridge 18 runs longitudinally, intersecting the transverse ridges. At the intersections of the longitudinal and transverse ridges there are formed conical-shaped depressions 19 in which the ball may come to rest. The square spaces defined by the intersecting ridges 18 are downwardly inclined or rounded toward the center of the space, as at 20, so that a ball landing in one of these spaces will inevitably roll to the center thereof and come to rest over a central opening 21. The conical seats 19 heretofore described also extend entirely through the board 12 and are concentric to the central opening 21.

Mounted upon one of the vertical supporting members 14 at each end of the case is an arm 22 supporting a ring 23 which constitutes the "basket" or goal, it being the purpose of the game to toss a small ball from any one of the pockets or seats 19 or 21 upward so that it may pass downward through one or the other of the rings 23 or 23ª.

Disposed beneath the board or floor 12 and associated with each of the openings 21 is a kicker. These kickers, as shown in Figure 2, are extended in different directions, as will hereafter more fully appear, and one-half the kickers are operated by one actuating means, while the other half are actuated by the other actuating means.

Referring now to Figure 3, it will be seen

that the actuating means for one set of kickers comprises an arm 24 mounted upon a shaft 25 supported in suitable bearings 26 beneath the floor. This shaft extends at right angles to the length of the board and is disposed adjacent one end and slightly to one side of the corresponding ball seat 19. This shaft is provided with an angularly extending arm constituting a kicker 27 which extends diametrically across the corresponding opening 21 of the cup or depression 19 and this arm 27, when it is lifted, will swing upward and toward the adjacent ring 23. In order to prevent confusion, all those cups or ball seats 19 belonging to one player are differentiated by the exponent A, while all those ball seats 19 and 20 which belong to the other player are differentiated by the exponent B. The shaft 25 just described and the kicker 27 are intended to be operated by the player A.

The shaft 25 is provided with an upwardly projecting arm 28, to which a contractile spring 29 is connected so as to urge the shaft in position to draw the arm 24 in a horizontal position and the arm 28 in a vertical position. Pivotally connected to the arm 28 is a link 30. This link is connected to one arm 31 of a bell crank lever 32 mounted upon a supporting post 33. The other arm 34 of this bell crank lever is pivotally connected to a link 35, which in turn is pivotally connected to an arm 36 which is mounted upon a shaft 37, this shaft being supported in suitable bearings. The arm 36 is connected by a connecting rod 38 which extends diagonally across the board to an arm 39 mounted upon a shaft 40, this shaft 40 extending at right angles to the link or connecting rod 38 and on an angle of 45° to the shaft 25.

The shaft 40 is mounted in bearings 41 of any suitable character and carries at its ends the kicker 42 which extends across the opening 21 of a seat 20. This finger or kicker 42 is radially disposed with relation to the corresponding ring 23 so that a ball struck by either of the kickers 27 or 42 will be projected upward and toward the "basket" or ring 23 at that end. Disposed parallel to the connecting rod 38 is a shaft 43 having at one end the kicker 44 which extends across one of the seats 20 and specifically across seat 3^A. The other end of this shaft carries an upwardly projecting arm 45. This arm is connected by a link 46 to the bell crank lever 31 and thus when the bell crank lever 31 is actuated by the handle 24, the shaft 43 will be actuated to actuate the kicker 44.

Also connected to the arm 45 is a connecting rod 47 which extends at right angles to the shaft 43 and extends toward the other end of the board and is there connected to an upwardly projecting arm 48 on a shaft 49 supported in bearings 50, this shaft carrying the kicker 51 which extends across the pocket, depression or cup 1^A. Also mounted upon the shaft 37 is a kicker 52 extending across the opening of the seat or depression 2^A.

It will be seen that I have referred to five cups, depressions or pockets 1^A, 2^A, 3^A, 4^A and 5^A and that the connections which I have described are such that when the handle 24 is drawn upward all of the kickers belonging to these various cups will be lowered and that when the handle is released the spring 29 will cause all of the kickers to be operated so that a ball resting in one of these cups or depressions or seats will be struck by the corresponding kicker and thrown in the general direction in which the kicker is disposed.

The kicker 51 for the seat 1^A or pocket is disposed so as to throw a ball diagonally over and toward the pocket 2^A. The kicker 52 in the pocket 2^A is so disposed as to throw the ball in a right angle to its previous direction and toward the pocket 3^A. The kicker in this pocket is disposed to again throw the ball at right angles and toward the pockets 4^A or 5^A and these kickers are so disposed as to throw the ball toward or into the corresponding or adjacent ring 23. A like arrangement is provided for the pockets or cups 1^B, 2^B, 3^B, 4^B and 5^B, and inasmuch as the mechanism is duplicated for the B pockets it is not believed it is necessary to describe this mechanism.

The kickers for the B pockets are operated all by the handle 24^b, while the handle 24^a operates the kickers for the A pockets. As will be seen from Figure 5, the pockets 19, that is, the pockets located at the intersection of the longitudinal ridges 18 with the transverse ridges, has a relatively longer kicker than the pockets 20 and the side wall of the pocket is cut away, as at 53, to permit this finger to have a slightly greater travel than the fingers 42, 44, 51 and 52. The fingers for the pockets 1^A, 2^A, 3^A and 5^A are relatively short and slightly curved, as shown in Figure 6.

The ball 54 is, of course, always disposed in some one of the pockets when the game is to be started and is played from this pocket. The object of the player A is to cause the ball to move away from his side of the field or board and to pass through the goal or basket of the other player, and the object of the other player is exactly reverse to that of the first player. The kickers are so arranged that by careful manipulation a ball which is at one end of the field may be caused to travel from pocket to pocket toward the other end of the field diagonally across the board until eventually the ball will lodge, for instance, in the pocket 5^A or 4^A, the finger or kicker for the hole 5^A and for the hole 4^A being arranged to propel the

ball toward the scoring basket, and a skillful operator can readily score by kicking the ball into or through the basket from these points.

In playing the game, obviously as long as the ball falls into cups or pockets whose kickers are operated from the handle 24^a, for instance, the player who is operating the handle 24^a continues to play, but if the ball should fall into one of the B pockets or cups then the player who is operating the handle 24^b will gain control of the ball and will try, by proper manipulation of the handle, to drive the ball down the field and eventually kick a goal. Obviously, the game may be played either by trying to send the ball into the enemy's basket or trying to get the ball through the player's own basket. It will be seen that with this mechanism, a skillful player, by proper manipulation of the corresponding lever 24^a or 24^b, can so operate the kickers as to control the movement of the ball to a considerable degree and send it down the field in the direction and to the position he desires, thus making the game one of skill rather than of pure chance.

Preferably the cups or depressions will be differentiated by different colors so that each player can distinguish his own holes from those controlled by the lever of opposing player. In the actual playing of the game a scole is made by the throwing of the ball into the basket, this is, through one or the other of the rings. Field goal counts two points and free goal one point. If a ball is thrown from a #1 hole through the ring or basket it counts one point, and if a ball is thrown from hole #2 it counts two points.

While I have illustrated certain details of construction and arrangement of parts, I do not wish to be limited thereto as these may be changed without departing from the spirit of the invention as defined in the appended claims. Neither do I wish to be limited to the use of this device as a means for playing a mechanical "basketball" game as this mechanism might be used for other games and other goals might be used in place of the rings or baskets 23.

I claim:—

1. A mechanical ball game of the character described comprising a board constituting a field and an enclosing casing, the board being formed to provide a plurality of series of spaces, one series for each player, each of said spaces inclining downward toward its center to provide a cup within which a ball may rest, the cup opening through the bottom of the board, a ball within the casing adapted to come to rest within any one of said cups, the cups of one series being arranged in staggered relation to each other and alternating with the cups of the other series, a controlling handle for each player, and kickers disposed beneath the openings in each set of spaces and operatively connected to the corresponding handle and operated thereby, said kickers being so arranged as to project the ball in the general direction of the next succeeding cup of a series.

2. A mechanical ball game comprising a board and an enclosing transparent casing, goals disposed at opposite ends of the casing above the board, the board being divided by transverse and longitudinally extending ridges into a plurality of spaces, each of said spaces being downwardly inclined toward its center to form a cup within which a ball may rest, the cup opening through the bottom of the board, certain of the intersecting longitudinal and transverse ridges being formed at their intersections to provide a cup or depression, the several cups or depressions being arranged in two series, the cups or depressions of one series being in staggered relation to the cups or depressions of the other series, kickers disposed beneath the several cups, the kickers of one series being operatively connected to each other for simultaneous operation and the kickers of the other series being operatively connected to each other for simultaneous operation, handles exterior to the casing and connected each to one series of kickers, and a spring urging all of the kickers of a series to a projected position, the handle acting to depress the kickers of that series, the kickers of one series being arranged to discharge the ball from a cup of one series to an adjacent cup of the same series and into the corresponding goal.

3. A mechanical ball game comprising a board and an enclosing transparent casing, goals disposed at opposite ends of the casing above the board, the board being divided by transverse and longitudinally extending ridges into a plurality of spaces, each of said spaces being downwardly inclined toward its center to form a cup within which a ball may rest, the cup opening through the bottom of the board, certain of the intersecting longitudinal and transverse ridges being formed at their intersections to provide a cup or depression, the several cups or depressions being arranged in two series, the cups or depressions of one series being in staggered relation to the cups or depressions of the other series, kickers disposed beneath the several cups, the kickers of one series being operatively connected to each other for simultaneous operation and the kickers of the other series being operatively connected to each other for simultaneous operation, handles exterior to the casing and connected each to one series of kickers, and a spring urging all of the kickers of a series to a projected position, the handle acting to

depress the kickers of that series, the kickers of one series being arranged to discharge the ball from a cup of one series to an adjacent cup of the same series and into the corresponding goal, each kicker comprising a finger disposed below the hole of a cup and mounted upon a shaft.

4. In a mechanical ball game of the character described, a board having a cup formed in its face, the cup opening through the bottom of the board, a shaft disposed below the bottom of the board and having a depressible finger extending across the hole in the cup adjacent the bottom thereof, a spring operatively connected to the shaft to urge it upward against the ball in the cup, and a handle operative to retract the shaft against the action of the spring.

5. In a mechanical ball game, a board having thereon two cup-shaped depressions adapted each to receive a ball, a shaft associated with each depression and having an angularly disposed depressible finger extending diametrically across the depression and acting as a kicker, an operating shaft having a handle, a spring urging the shaft in a direction to raise the finger, and operative connections from the last named shaft to the first named shafts to cause the simultaneous depression of all of said fingers upon a movement of the handle in one direction and a simultaneous projection upon a release of the handle.

6. A mechanical ball game of the character described including a board and a transparent casing extending over the board, the board being divided by ridges into an even number of spaces, of cup-shaped depressions opening through the bottom of the board and each of said spaces being downwardly and centrally inclined to form a cup-shaped depression opening through the bottom of the board, a ball within the casing, goal rings disposed at opposite ends of the casing, the spaces being divided into two series, pivotally mounted kickers disposed beneath one series of spaces and operatively connected to each other, an operating handle connected to the kickers of one series, a spring operatively connected to the kickers of one series of spaces whereby the kickers of one series of spaces may be simultaneously operated upon an operation of the handle or a release thereof, a second operating handle to which the kickers of the other spaces are all operatively connected, a spring operatively engaging the kickers of the last named spaces and urging them to a normal position, the kickers of one space and the cup at the intersection of the ridges adjacent one end of the casing operating in a plane radial to the adjacent goal ring and the kickers of one space at the opposite end of the casing and of the cup at the intersection of the ridges adjacent this end operating in a plane radial to the ring at this end, the kickers of one series of cups being arranged to direct the ball from one cup of a series to the next adjacent cup of the series in a direction toward one end of the casing while the kickers of the other series are reversely arranged to direct the ball in a reverse direction and successively from one cup to the other of the series.

7. A mechanical ball game including a board constituting a field and having thereon two sets of upwardly flaring cups, goals disposed at opposite ends of the field, the cups of one series being arranged in staggered relation to each other and alternating with the cups of the other series, a ball adapted to be played upon the field and to come to rest in any one of said cups, and two series of kickers disposed beneath the two series of cups, the kickers of each series being simultaneously manually operable but independently of the kickers of the other series, a kicker of either series being arranged to project the ball from its cup in the general direction of a goal and in a diagonal direction toward the next successive cup of the same series.

8. A mechanical ball game including a board constituting a field and having therein two sets of upwardly flaring cups and goals at opposite ends of the field, the two series of cups disposed one series adjacent each side of the board, the cups of one series being arranged in staggered relation to each other and alternating with the cups of the other series and including cups disposed on a median line adjacent a goal, a ball adapted to be played upon the field and to come to rest in any one of said cups, two series of kickers disposed beneath the two series of cups, the kickers of each series being operatively connected to each other for simultaneous movement, a kicker of either series being arranged to project the ball from the corresponding cup in the general direction of the goal and in the direction of the next adjacent cup of the same series, the kicker of each medial cup being disposed to project towards the adjacent goal and two handles each operatively connected to one series of kickers whereby the two series of kickers may be operated by opposed players.

In testimony whereof I hereunto affix my signature.

JACOB YOUNG.