

Feb. 21, 1939.

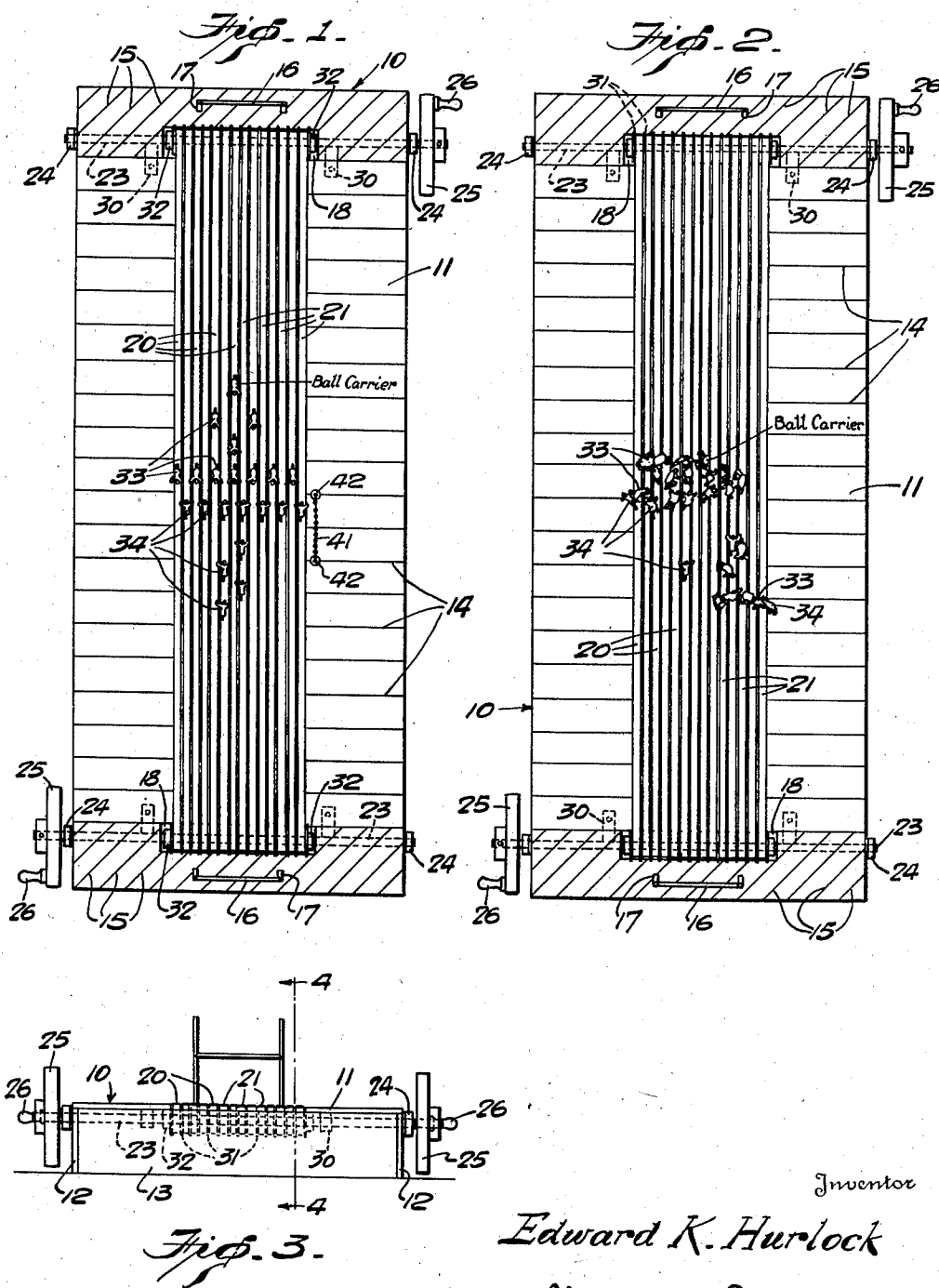
E. K. HURLOCK

2,148,354

FOOTBALL GAME APPARATUS

Filed April 28, 1937

2 Sheets-Sheet 1



Inventor

Edward K. Hurlock

By *Norris + Patterson*

Attorneys

Feb. 21, 1939.

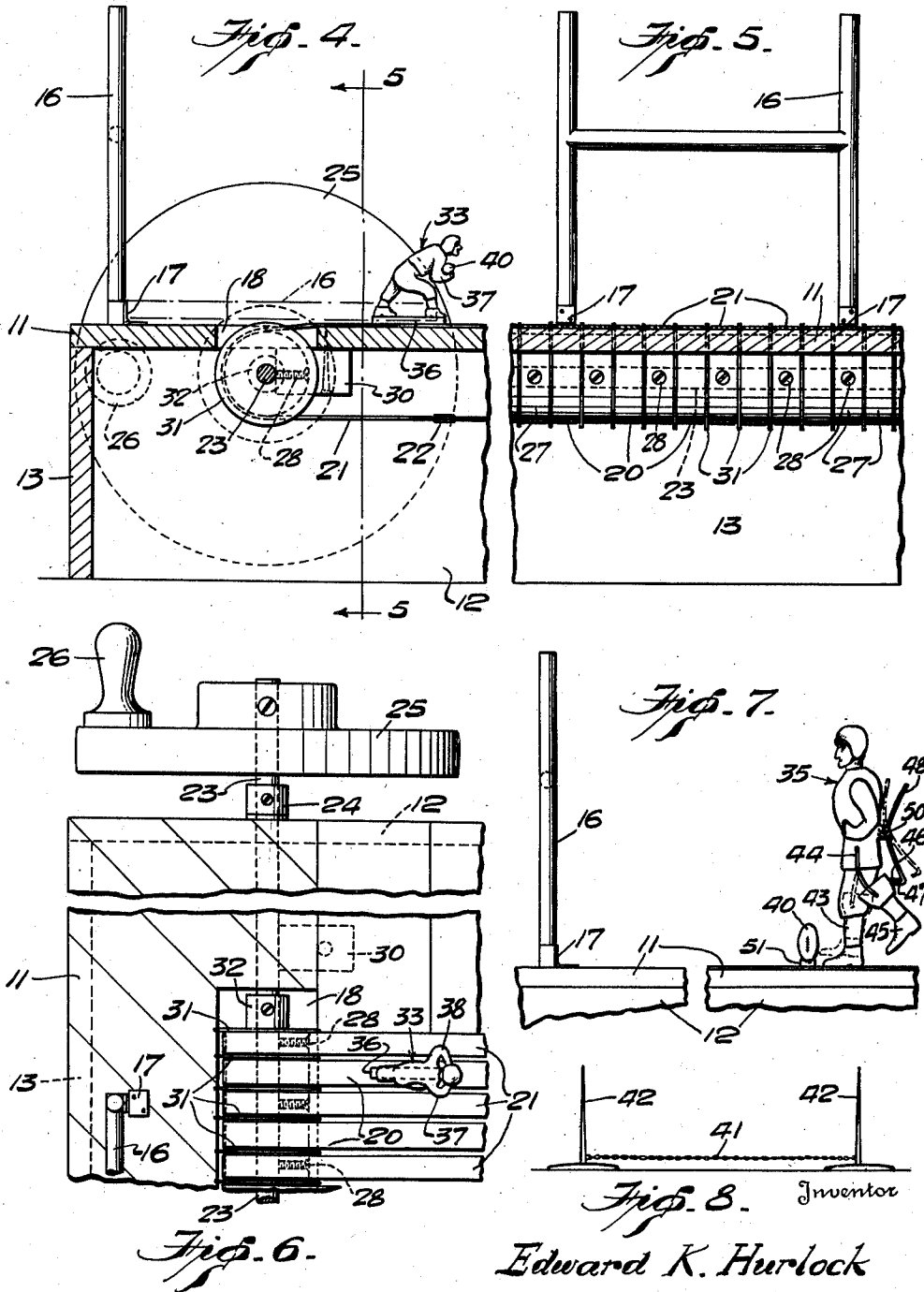
E. K. HURLOCK

2,148,354

FOOTBALL GAME APPARATUS

Filed April 28, 1937

2 Sheets-Sheet 2



Edward K. Hurlock

By Norris & Denton
Attorneys

UNITED STATES PATENT OFFICE

2,148,354

FOOTBALL GAME APPARATUS

Edward K. Hurlock, Baltimore, Md.

Application April 28, 1937, Serial No. 139,573

5 Claims. (Cl. 273-94)

The present invention relates to apparatus for simulating a game of football, and particularly to game apparatus of the type in which two persons exercise manipulative skill in operating the parts of the apparatus to determine the outcome of the game.

In prior game apparatus of this general type the results of play have been determined almost or entirely by chance, with the positions of the player-pieces—that is, the miniature elements employed to represent the opposing teams in the game—changed individually during play. In such games the player-pieces have been either attached to and shiftable over the game board, or have been loosely mounted for individual selected movements as aforesaid, but I am aware of no game of this type where the player-pieces are moved en masse or in groups in such manner as to simulate the game as it is played as an actual physical contest between two teams of men. This is especially true of football games where interest and excitement follow from mass movements and bodily conflict as well as from skillful disposition of players and skillfully executed movements.

Accordingly, it is the primary object of my invention to devise an apparatus for simulating football and like games, with player-pieces designed and arranged for pre-selected disposition and for mass movements in groups.

It is a closely related major object of the present invention to provide a game apparatus of this type, comprising player-pieces adapted for arrangement in opposing groups and designed to tilt and tumble when moved into engagement with one another.

More specifically, it is an important object of this invention to devise a foot ball game or like apparatus embodying a playing field or portion thereof comprising a plurality of parallel conveyors disposed in two sets movable in opposite directions in intermingled relationship, and two sets of player-pieces adapted to be supported by the conveyors and brought into conflict through movement of the latter.

In the preferred form of my invention the conveyors are so spaced, and the player-pieces so designed that the opposing pieces cannot pass each other without bodily conflicting and yet so that it is possible for one or more pieces to be conveyed in upright position partially or wholly through the group of opposing pieces. The player-pieces preferably are alike and designed with considerable instability, and yet with sufficient tumbling action when "brought down" that they

may often be pushed out of the way by an on-coming upright player-piece.

The oppositely movable conveyors preferably are alternated and made of endless bands the upper surfaces of which are stretched taut to form the playing field or gridiron; and each of the two sets of conveyors preferably is movable as a unit by one of the persons participating in the game, although some of the conveyors may be made to operate individually or in smaller groups, if desired.

It is also an object of the present invention to devise an improved "kicker" which may be skillfully employed to kick a miniature football with great accuracy.

The foregoing and further important objects of my invention will become clearly apparent from a study of the following detailed description when taken in conjunction with the accompanying drawings and the appended claims.

In the drawings:

Fig. 1 is a plan view of a preferred form of the game apparatus of the present invention, with the movable parts shown in position for play;

Fig. 2 is a similar view in which the player-pieces are shown advanced into conflict by manipulation of the conveyors;

Fig. 3 is an end elevational view of the apparatus of Figs. 1 and 2, with the player-pieces omitted;

Fig. 4 is an enlarged view of one end of the apparatus, in fragmentary section, as seen on the plane of line 4-4, Fig. 3, when looking in the direction of the arrows;

Fig. 5 is a similar view taken transversely of the apparatus, substantially on line 5-5, Fig. 4, in the direction of the arrows;

Fig. 6 is an enlarged fragmentary plan view showing one of those corners of the apparatus which carries a hand-wheel for manipulating the conveyors;

Fig. 7 is a side elevational view of a portion of the apparatus, with a "kicker" player-piece and a miniature football arranged in position for attempting a field goal; and

Fig. 8 portrays a side elevational view of means representing linesmen and marking chain.

With continued reference to the drawings, wherein like numerals are employed to designate like parts, the supporting and mounting structure of the apparatus consists principally of an inverted box-like member indicated generally at 10, having a flat top 11, sidewalls 12 and endwalls 13. The bottom may be open or closed and

the box may rest upon a table or be supported by legs in any suitable manner, the only requirement being that room is provided at two of the diagonally opposite corners to permit two persons to take positions where they can conveniently manipulate the player-pieces and the conveyors.

The top 11 preferably is transversely marked with a series of five-yard lines 14 to produce a miniature gridiron surface, to scale, terminating at its ends in a pair of end-zones distinguished by diagonal stripes 15. Each end zone is provided with a conventional goal post and cross bar structure 16, set back from the goal line; and these structures preferably are secured to the "box" 10 by hinges 17 so that they may be folded downwardly against the top when the apparatus is packed or otherwise not in use.

A rectangular, transversely disposed slot 18 is cut or formed in each end zone adjacent the middle portion of the corresponding goal line, and a multiplicity of endless bands 20 and 21 are arranged longitudinally of the field and passed through said slots 18, so that the visible portions of the bands lie upon the field surface and in fact form a large part of the same. Each band comprises a narrow thin strip of flexible material such as rubber, joined at its ends by a fastener 22 (see Fig. 4). These bands form conveyors for the player-pieces when actuated in a manner yet to be described. The bands 20 and 21 are identical, except that they may be colored differently to make it readily apparent that each serves as a conveyor for a particular team. The bands are arranged, closely spaced, in parallelism; and preferably the bands 20 are alternated with the bands 21, as illustrated. It is intended that the bands 20 travel in one direction, and the bands 21 in the opposite direction, to bring the opposing teams into conflict. The mechanism for doing this is as follows.

A shaft 23 is arranged at each end of the box 10, with its ends journaled in the box side walls at points directly below the longitudinal axis of the corresponding slot 18. Collars 24 on the exposed shaft ends prevent axial movement thereof. One end of each shaft also has secured thereto a hand-wheel 25 provided with a manipulating crank pin 26, these wheels preferably being mounted at diagonally opposite corners of the field for maximum convenience to the two persons playing the game. These wheels may be colored to correspond with the set of conveyors that they are designed to actuate.

The intermediate portion of each shaft 23 carries a plurality of closely spaced rollers 27, sufficient to fill the slot 18 and corresponding in number with the bands 20 and 21, which pass over the rollers. One half of the rollers are non-rotatably secured to the shaft, as by set screws 28 (see Figs. 4-6); and the other rollers, which are alternated with the first half, are free to rotate independently of the shaft. The arrangement is such that each secured roller at one end of the field is aligned with a non-secured roller at the opposite end of the field, and therefore the actuation of each hand-wheel 25 can cause movement of only that set of conveyors (20 or 21) which passes over the rollers that are secured to said shaft. By rotating the shafts properly in opposite directions, then, the visible portions of the conveyors 20 can be made to travel toward one goal line while the visible portions of the conveyors 21 can be made to approach the other goal line. Since the shafts are independently

operable, the speed of travel may be varied at will, and if desired the direction may be reversed momentarily while playing the game.

The shafts 23 are so located and the rollers 27 so dimensioned that the conveyors, which are sufficiently taut to maintain a good drive, hug the upper surface of the field to make them, in effect, a part of the latter. Also, they extend the surface of the field into the end zones to substantially close the slots 18 and prevent the player-pieces from dropping through the latter, while at the same time forming a sufficient trap to prevent the pieces from being thrown or pushed over the ends of the box.

Each shaft is of small diameter, and reinforced against bending between its ends by a pair of contact blocks 30 which are secured to the lower side of the top 11. The rollers on each shaft are freely separated and spaced by a set of thin washers 31, these washers being of sufficient diameter to extend beyond the rollers and thus keep the conveyors from interfering with one another. Collars 32 are secured to the shafts 23 at the ends of the sets of rolls to keep the loosely mounted end rollers and end washers in position axially.

The player-pieces in constant use comprise two teams of eleven "men" each of which are indicated generally by the numerals 33 and 34 respectively. In addition there is a mechanical piece 35 known as the "kicker" (Fig. 7), which is placed in use only when it is desired to attempt a field goal or a point-after-touchdown. The pieces 33 and 34 are identical, except for distinguishing color coatings, and each takes the form of a miniature man in full uniform supported on an integral base or block 36 (Figs. 4 and 6). The base is of such narrow width as to make the piece relatively unstable; and preferably is of considerably less width than the band 20 or 21 on which it is to be supported for movement, so that the base can be arranged angularly with respect to the axis of the band (to skillfully adjust the player-piece) without bringing the base into overlapt contact with an adjacent band.

Preferably, the "men" 33 and 34, and especially those forming the "line" in play, are formed to simulate men in a crouching, striding position, with one elbow, 37, slightly extended laterally and the other elbow, 38, extended considerably in a lateral direction. The arms of the piece will thus receive and hold a miniature football 40 (Figs. 4 and 7) made of a resilient material such as soft rubber; and if any piece is toppled by impact in conflict it not only will fall but also may tilt and roll about to make free passage for the opposing oncoming player. For example, if the piece falls to the left, it will contact the field with only the base edge and the left elbow, with the center of gravity so located that a further push against the front of the piece will cause it to roll onto its "back" and sometimes all the way over to its other side; and if the piece falls to the right it will rest then upon the right hip and the base edge so that it can slide about with a minimum of friction.

The base area is such that occasionally the player-piece, when shoved in conflict, will slide about or "pivot" without falling or leaving its conveyor and thus will continue to make progress toward the opponent's goal line.

The player-pieces are of such width with respect to the conveyor spacing that it is impossible, or substantially so, for the piece on a conveyor 20 to pass a piece on an adjacent conveyor 21

21 without impact, and the arrangement and construction is otherwise such that unless a piece is placed in position with great skill it cannot remain upright after the impact. Any single play of course terminates when the man who carries the ball is brought down.

With the apparatus thus far described the play is generally as follows. The two persons playing the game arrange their respective set of player-pieces 33 and 34 on the conveyors 20 and 21 respectively, or vice versa, in any desired manner while of course endeavoring to simulate "formations" that are employed in the conventional game of football. The line of scrimmage may first be located on one of the twenty yard stripes, or the starting point determined after an assumed "kick-off" by chance with special dice or a spinner. The kicker 35 may be brought into action if desired in some predetermined manner. Starting from this first line of scrimmage the offensive team is entitled to the usual four "downs" in which to gain ten or more yards—the ball otherwise going to the other side. Each "down" of course is represented by simultaneous manipulation of the handwheels 25 by the two persons playing the game to advance the teams toward each other and into conflict. Failing to make ten yards in the first three downs, a system may be devised for punting the ball, or if desired, the kicker 35 may again be used.

A miniature "ten yard" measuring chain 41 (Figs. 1 and 8) preferably is provided, stretched between two stands 42, to be positioned and shifted along one of the side lines of the field to indicate yardage to be gained in four downs by the side in possession of the ball.

The person handling the offensive team may place the ball 40 in the arms of any one of his player-pieces. The gain is registered at the point where this piece is toppled. For example, in Fig. 1 the "fullback" is indicated as carrying the ball, and in Fig. 2 his progress (in reality a loss in this instance) is indicated with many of the other pieces also in toppled position. As the game progresses, a "ball carrier" may eventually be successful in crossing the opponent's goal line to register a touchdown. It is also possible for a "safety" to occur. After each touchdown, the "kicker" 35 (normally off the field) may be brought into action, and likewise this kicker may be used to attempt a field goal at any time that success of such a venture would seem possible. The construction and operation of this kicker is as follows.

The kicker 35 (see Fig. 7) comprises a miniature player having one rigid leg 43, and another leg, comprising a flat spring 44 and a kicking foot or appendage 45. The upper end of the spring is attached to the body and the lower end is anchored in the appendage 45. Normally the spring is substantially straight but it may be bent backward and latched in bent position by a lug 46 on the appendage and a hook 47 which forms one terminus of a lever 48 that is pivotally attached between its ends to the body of the kicker. The energy-storing position of the movable parts as illustrated with full lines in Fig. 7, and the normal or released position in broken lines.

The ball 40 is used in conjunction with the kicker and is placed upon a tee 51 at the proper point in accordance with the preceding play. Then the person handling the kicking team takes the "kicker" in his hand, latches the kicking leg in backward position, places two fingers against the front sides of the shoulders and his thumb

against the upper end of the lever 48, sets the rigid leg 43 down against the playing field at what he guesses to be an appropriate point to deliver the requisite "kick" to the ball to loft the same over the cross bar of the goal post structure, and then presses with his thumb to cause release of the kicking leg.

With this kicking apparatus, a participant in the game may become very skilled, as he actually takes "aim" with the piece 35 by virtue of the thumb and finger disposition. Moreover, he can skillfully select a proper loft in the trajectory of the ball by carefully locating the rigid leg 43 upon the board and by properly selecting a position of inclination for the ball upon its supporting tee.

As previously indicated, considerable skill can also be exercised in arranging the team of pieces and in setting up each individual piece in its selected location. The tumbling and rolling action of the individual pieces when upset also adds thrills as it gives the ball carrier an opportunity to occasionally make long gains through most or all of the opposing player-pieces.

It will readily be seen that the apparatus described and the method of play set forth closely simulate an actual game of football, with the zest of close conflict and the skillful production of gains and losses; and that many variations can be made in form and method within the scope of the present invention. It will also be appreciated that many features of the disclosed game lend themselves to use in other similar games. For example, the conveyors and adjustable pieces may be employed in infantry or cavalry war games, with actual conflict taking place between the participants.

What I claim as my invention is:

1. Apparatus for playing games of the type embodying a field and goals adjacent the ends of the field, said apparatus comprising a field structure including a plurality of longitudinally movable carrier strips arranged in two sets with the strips of one set alternating with the strips of the other set, means connecting the strips of each set and operative to move the strips of each set simultaneously toward and from the ends of the field structure, and separate pieces representing players designed for loose disposition upon the surfaces of said carrier strips for mass movement by the respective sets of strips, said pieces being of sufficient lateral dimensions to cause collision of the pieces on adjacent strips when the respective sets of strips are relatively moved longitudinally.

2. Game apparatus of the character embodying a field and goals adjacent to the ends of the field, comprising a field structure including a plurality of flat parallel adjacently located longitudinally movable conveyors arranged in two sets with the conveyors of one set alternating with those of the other set, means connecting the conveyors of each set and operative to longitudinally move the conveyors of each set simultaneously toward and from the ends of the field structure, and two sets of separate pieces having distinctive characteristics representing two teams of players and having bases designed to rest on said conveyors in free surface contact therewith and support the respective pieces in readily shiftable and unstable condition for mass movement by the respective sets of conveyors, said pieces being of sufficient lateral dimensions to cause collision of the pieces on adjacent conveyors when the conveyors of the

respective sets are relatively moved longitudinally.

3. Game apparatus of the character embodying a field and goals adjacent to the ends of the field, comprising a field structure including a plurality of parallel adjacently located longitudinally movably conveyors arranged in two sets with the conveyors of one set alternating with those of the other set, two sets of separate pieces representing two teams of players having distinctive characteristics for distinguishing those of one set from those of the other set, said pieces having relatively narrow flat bases to rest loosely on the respective conveyors and thereby support them unstably thereon, said pieces being of sufficient width to cause those on one set of conveyors to collide with and upset those on the other set of conveyors by relative movement of said sets of conveyors longitudinally, and operating means for each set of conveyors for moving the conveyors of each set simultaneously and thereby cause mass movement of the sets of pieces on the respective sets of conveyors.

4. In a football game apparatus, the combination of a horizontal platform marked off to represent a miniature football field, a roller structure mounted rotatably at each end of the field and each having means for rotating it, two sets of endless conveyors passed in parallelism over the roller structures so that said conveyors are disposed partly above and partly below the platform, the conveyors of one set alternating with those of the other set, the roller structures including idle roll elements permitting the sets of conveyors to be separately actuated by the respective roller

structures, and the roller structure dimensions being such that the conveyor portions above the platform lie substantially flush with the top surface thereof.

5. In a football game apparatus, the combination of a horizontal platform marked off to represent a miniature football field, a roller structure mounted rotatably at each end of the field and each having means for rotating it, two sets of flat endless conveyors passed in parallelism over the roller structures so that said conveyors are disposed partly above and partly below the platform, the conveyors of one set alternating with those of the other set, the roller structures including idle roll elements permitting the sets of conveyors to be separately actuated by the respective roller structures, and the roller structure dimensions being such that the conveyor portions above the platform lie substantially flush with the top surface thereof, said roller structures having means for spacing the conveyors laterally in close proximity to one another, and a plurality of player-pieces separate from said conveyors and having bases adapted to rest thereon in free surface contact therewith and to be adjustably shifted about upon the flat surfaces of said conveyors, the player-pieces being supported for mass movement by the respective sets of conveyors and being of sufficient width in relation to the lateral spacing of the conveyors to cause the player pieces on the conveyors of one set to collide with the player pieces on the conveyors of the other set when the conveyors of said sets are relatively moved longitudinally.

EDWARD K. HURLOCK. 35