Nov. 14, 1939. B. F. SMITH 2,180,123

MECHANICAL GAME

Filed April 11, 1938 2 Sheets-Sheet 1

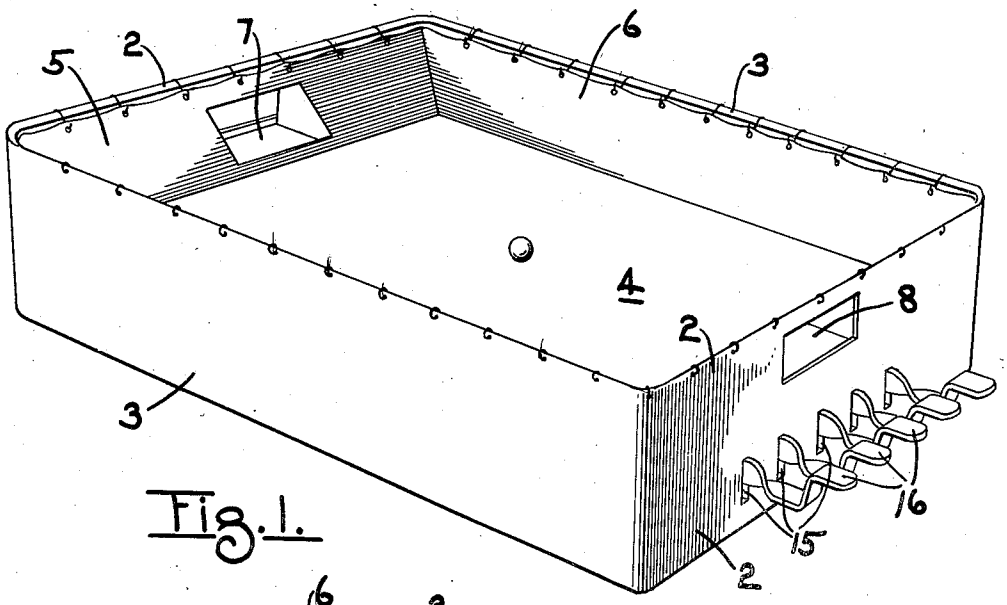


Fig. 1.

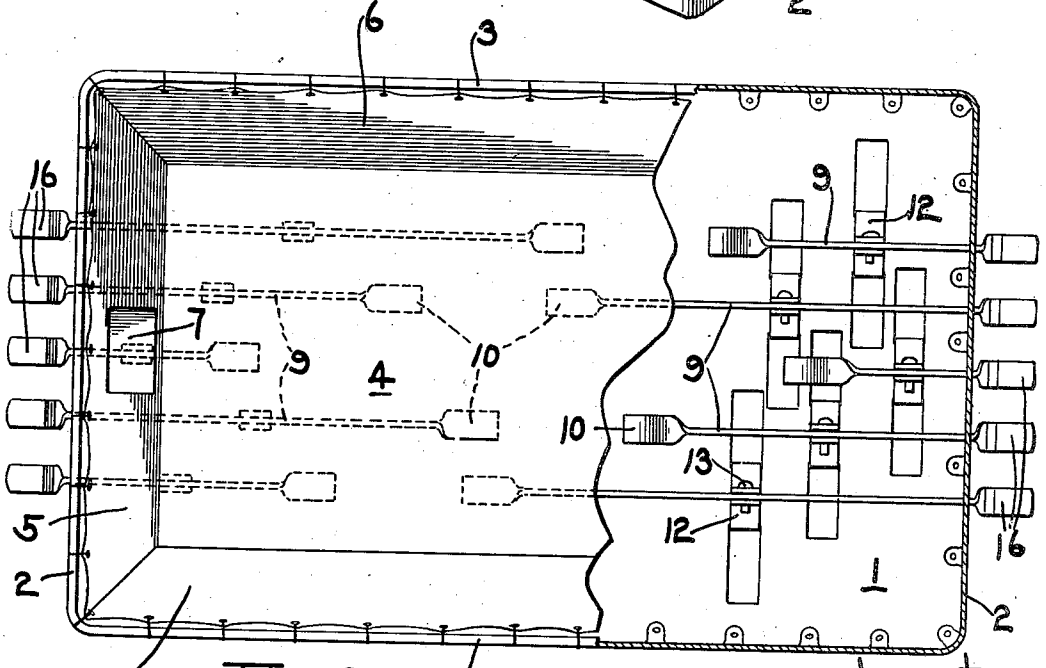


Fig. 2.

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MECHANICAL GAME

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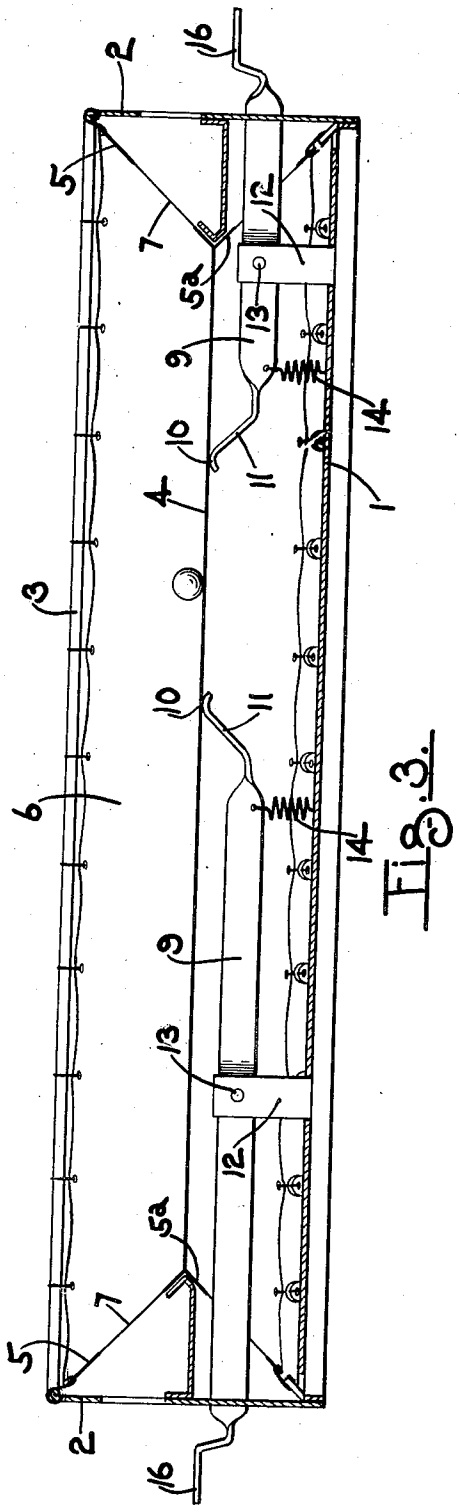


Fig. 3.

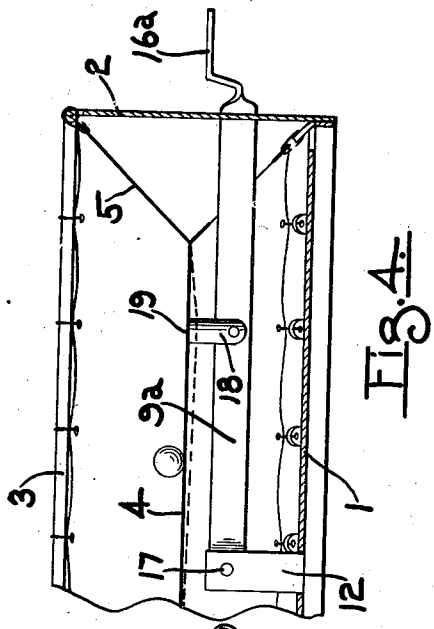


Fig. 4.

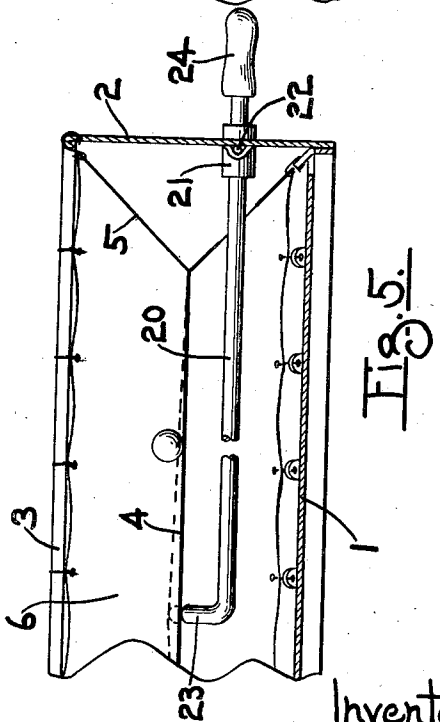


Fig. 5.

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UNITED STATES PATENT OFFICE

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MECHANICAL GAME

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Application April 11, 1938, Serial No. 201,313

13 Claims. (Cl. 273—85)

This invention relates generally to a game apparatus and is directed more specifically to a ball game having a resilient field whereby manually operated means for controlling the movements of the ball are provided.

The principle underlying the operation of the game is the fact that a ball is caused to move over a surface formed of a resilient material such as cloth, fabric, rubber or any other material which is adapted to be stretched between supports. Various means may be provided for controlling the movements of the ball such as lever arms or fingers extending inwardly from each end of the structure which supports the resilient field, and which may extend under the field whereby a manipulation of the lever arms or fingers will effect a rise or a depression in the resilient field, causing the ball to move in the direction of a depression, or away from a rise in said field.

By causing a movement of the ball in this manner, little or no element of chance is involved. On the contrary, the outcome of the game depends almost entirely on the skill of the operator or player, thus making it a game of skill rather than chance, and enhancing the interest therein.

The principle of the invention may be adapted to such games as football, basketball, baseball, hockey, socker, golf or any other game which is to be played by one player or between two opposing sides or teams with the use of one or more balls.

There are a number of different ways in which the lever arms may be constructed in order to control the movements of the ball, but it is to be understood that regardless of the manner in which the lever arms may be constructed or mounted, the underlying principle by which the ball is caused to move will remain the same.

The principal object of the invention is to provide a resilient surface stretched between supporting structures over which a ball may be caused to move by operation of manual means.

Another object of my invention is to provide suitable means whereby the movements of the ball may be controlled due to the skill of the player, leaving little or no element of chance in the game.

Other objects of the invention will appear as the description proceeds.

To the accomplishment of the foregoing and related ends said invention, then consists of the means hereinafter fully described and particularly pointed out in the claims.

The annexed drawings and following description set forth in detail certain means of applying the principle of my invention, said means constituting however but a few of the various ways in which the principle of my invention may be used.

In said annexed drawings, wherein like reference numerals refer to like parts in the various figures:

Fig. 1 is a perspective view of one form of my invention.

Fig. 2 is a top plan view of Fig. 1 with a portion broken away to more clearly show the manner in which one form of controlling means may be mounted.

Fig. 3 is a longitudinal section through the apparatus of Fig. 1.

Fig. 4 is a fragmentary sectional view showing a modification of the manually operable means for controlling movements of the ball.

Fig. 5 is a fragmentary sectional view showing still another modification of the manually operable means.

Referring now more particularly to the drawings and more especially to Figs. 1, 2 and 3, the apparatus consists of a base member 1 which has secured thereto upwardly extending end members 2 and upwardly extending side members 3. The field 4 is formed of a resilient material capable of withstanding the rather severe usage to which it is subjected by continual contact therewith of the manually operable means.

This field portion 4 is preferably constructed of two sheets of the material used, which are secured together over a substantial area and allowed to separate at the ends and sides thereof so that a part of the upper portion 5 at the ends may be secured to the upper edge of the end portions 2 and the side portions 6 may be secured to the upper edge of the sides 3. The lower portions 5a of the field will then be secured to the lower edge of the end portions 2, as more clearly shown in Fig. 3, and the side portions of the field which extend downwardly will be secured in a like manner to the lower edge of the side members 3, or to the edges of the base portion 1.

It will be seen in this construction that the field 4 may be stretched tightly to form a horizontal field, and when a ball is placed thereon, the movements of the ball may be controlled by a rise or a depression adjacent the ball in the field.

In the form of the invention shown I have provided goals 7 and 8 in each end of the apparatus and it is the object, in this form of the game, for the player at each end to so move the ball that it will enter the goal opposite said player.

Since the player at the opposite end has similar means for controlling movements of the ball, he may attempt to prevent the ball from entering his own goal as well as attempt to force the ball in his opponent's goal while using similar controlling means.

If the apparatus is to be adapted for a different type of game, suitable goals may be provided or even a plurality of holes placed in the field would be possible in order to adapt the apparatus to any particular type of game. Since the upwardly sloping end and side portions 5 and 6 are also resilient, the ball may be prevented from being forced over the edge of the supporting structure due to the fact that when the ball approaches or rolls upon one of these upwardly extending and sloping members, the tendency will be for the ball to roll back and return to the field or surface.

One of the means which I have conceived for controlling the movements of the ball is a plurality of pivotally mounted lever arms 9 of varying lengths. The innermost ends 10 of each of these lever arms are curved upwardly as at 11 in Fig. 3 so that in their normal position the upper extremity of the arm will be in contact with the resilient field.

The base 1 is provided with a plurality of upstruck portions 12 to which the lever arms may be pivoted as at 13. In this type of controlling means springs 14 are provided near the inner ends of the lever arms and secured to the base 1 so that after an upward movement of the inner end the spring will return the arm to its normal position.

Each of the end members 2 is provided with a plurality of slots 15 through which extend the outer ends of the lever arms and which may be formed in such a manner as to provide horizontal portions 16 so that a player may press downwardly on the lever arms with his fingers to impart an upward motion to the inner end of the arm.

Since each of the lever arms 9 is of a different length, the player wil be enabled to control the ball at any point in the field. It is to be understood that the arrangement shown in Fig. 2 of these lever arms may be modified, their lengths varied and the number changed, without departing in any way from the spirit of the invention.

Since each end is provided with the same number of levers having a corresponding arrangement, neither player has any advantage over the other by playing at a particular end.

Referring now more particularly to Fig. 4, this modification of the manually operable means includes the same upstruck portion 12, the lever arm 9*a*, however, terminates at the point 17 where it is pivotally mounted to the upstruck portion 12. At any suitable point along the lever arm is secured an upwardly extending portion 18 which is secured at 19 to the resilient field. It will thus be seen that a downward movement of the outer end 18*a* of the arm 9*a* will then produce a downward movement of the field 4 causing a depression therein as indicated in the dotted line of Fig. 4. When such a depression occurs adjacent the ball it will be obvious that the ball will have a tendency to roll toward such depression. No spring will be necessary in this modification since the lever arm is indirectly secured to the field and when the field portion returns to its normal position the lever arm will do likewise.

In this particular modification a plurality of the arms 9*a* will be provided similarly as in the first modification shown in Fig. 1, the arms being of various lengths and the upwardly extending portions 18 being secured at various points to the underside of the resilient field 4. Thus it will be seen that in this modification that instead of controlling the ball by an upward movement of the field the ball will be controlled by causing a depression therein. The object of the game in either case may be the same.

Referring now to Fig. 5, this particular modification embodies the use of only a single lever arm 20. This arm may be secured to the end member 2 in such a manner as to allow a longitudinal and lateral movement with respect to the field as well as an up and down motion. A short tubular member 21 may be pivotally secured as at 22 to the end member and may also be provided with a ball and socket or any other suitable construction to provide for a universal movement of the lever arm 20.

The inner end 23 of the lever arm 20 extends upwardly and is adapted to contact the resilient field 4. The player, by grasping the outer end 24 of the lever arm 20 will have full control of the ball at any point in the field due to the construction in the end portion 2 which allows a universal movement as well as a longitudinal movement thereof. The field here will be raised by the arm 20 as shown in its dotted line position.

It is also to be understood that the sloping portions 5 and 6 need not be made of the same material as the resilient field. That is to say, that it is within the scope of my invention to provide a field which may be secured to the surrounding supporting structure by means of any resilient or flexible material. Also other forms of controlling the movements of the ball may be utilized other than the ones here disclosed, provided, however, that the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:

1. A mechanical ball game comprising a resilient field portion, a surrounding structure to enclose said field, said field portion having upwardly and downwardly sloping portions around the edge thereof secured to said surrounding structure, a ball, and manually operable means extending inwardly from either end of said structure to control the movements of said ball.

2. A mechanical ball game comprising a supporting structure, a field within said structure, upwardly and downwardly sloping means to resiliently secure said field to the upper and lower edges of said structure, a ball, and means extending inwardly from each end of said structure and beneath said field to control the movements of said ball.

3. A game of the character described comprising a resilient field portion, means for enclosing said field, resilient means sloping upwardly and downwardly for suspending said field portion from the upper and lower edges respectively of said enclosing means, a ball, and a plurality of pivotally mounted fingers extending inwardly from each end of said enclosing means and beneath said field portion, said fingers adapted to be manipulated to cause a rise and fall of portions of the resilient field to thereby control the movements of said ball.

4. A mechanical ball game comprising a base having upwardly extending side and end portions, a two ply resilient field portion having its upper

side secured to the upper edges of said side and end portions and its lower side secured to the lower edges of said side and end portions, a ball, manually operable means extending inwardly from either end portion to control the movements of said ball, and upstruck portions in said base to which said means are pivotally secured for operation.

5. A mechanical ball game comprising a supporting structure, a field formed of fabric stretched taut in a horizontal plane within said supporting structure, side and end members extending angularly from said field also formed of fabric securing said field to the upper and lower edges of said supporting structure, a ball, and means extending inwardly from either end of said structure to control the movements of said ball.

6. The combination of elements defined in claim 5, said last named means including a plurality of pivotally mounted levers extending inwardly from each end of the supporting structure and having portions extending through and beyond said structure whereby a downward movement thereof will produce a rise in the field to move the ball.

7. The combination of elements defined in claim 5, said last named means including a lever arm slidably mounted in each end of said structure below said field and adapted to be moved longitudinally and laterally of said field.

8. The combination of elements defined in claim 5, said last named means including a plurality of pivotally mounted levers extending inwardly from each end of the supporting structure having portions extending through and beyond said structure and members extending upwardly from each of said levers secured to said fabric field whereby a downward movement thereof will produce a depression in said field to move said ball.

9. A mechanical ball game comprising a supporting structure, a two ply field formed of rubber stretched taut in a horizontal plane within said structure and substantially midway between the upper and lower edges of said structure, side and end members also formed of rubber securing the upper surface of said field to the upper edge of said structure and the lower surface of the field to the lower edge of said structure, a ball, and means extending beneath said field to control the movements of said ball.

10. The combination of elements defined in claim 9, said last named means including a plurality of pivotally mounted levers extending inwardly from each end of the supporting structure and having portions extending through and beyond said structure whereby a downward movement thereof will produce a rise in the field to move the ball.

11. The combination of elements defined in claim 9, said last named means including a lever arm slidably mounted in each end of said structure extending below said field and adapted to be moved longitudinally and laterally of said field.

12. The combination of elements defined in claim 9, said last named means including a plurality of pivotally mounted levers extending inwardly from each end of the supporting structure having portions extending through and beyond said structure and members extending upwardly from each of said levers secured to said rubber field whereby a downward movement thereof will produce a depression in said field to move said ball.

13. In a mechanical ball game having a base with upwardly extending side and end portions, a field including a double thickness of material, said thicknesses being separated for a distance about the edges thereof, the upper thickness being secured to the upper edges of said side and end portions, and the lower thickness secured to the lower edges of said side and end portions, whereby said field is suspended substantially midway between said upper and lower edges.

BENJAMIN F. SMITH.