

Oct. 31, 1944.

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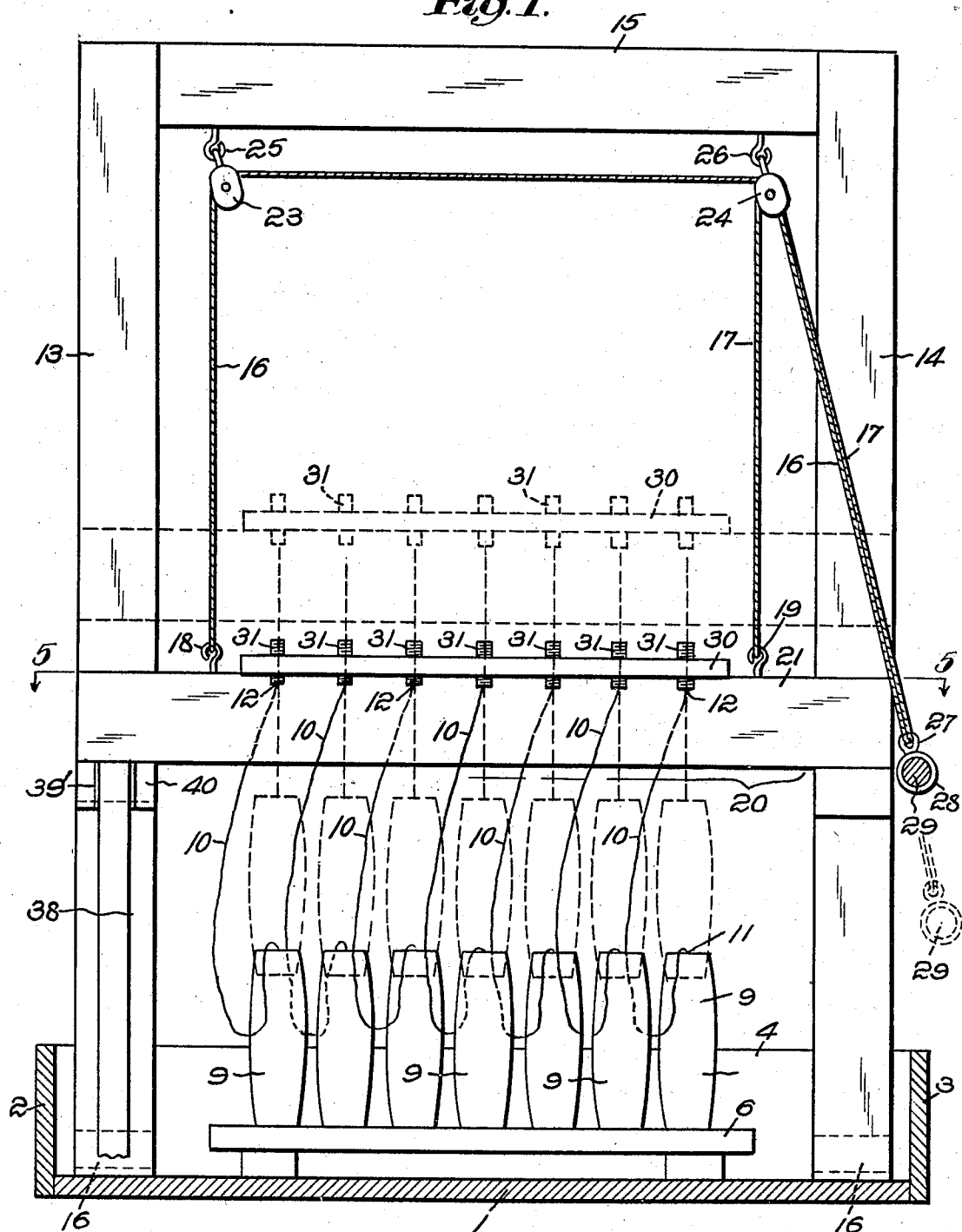
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GAME APPARATUS HAVING PIECES SETTING-UP MEANS

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4 Sheets-Sheet 1

Fig. 1.



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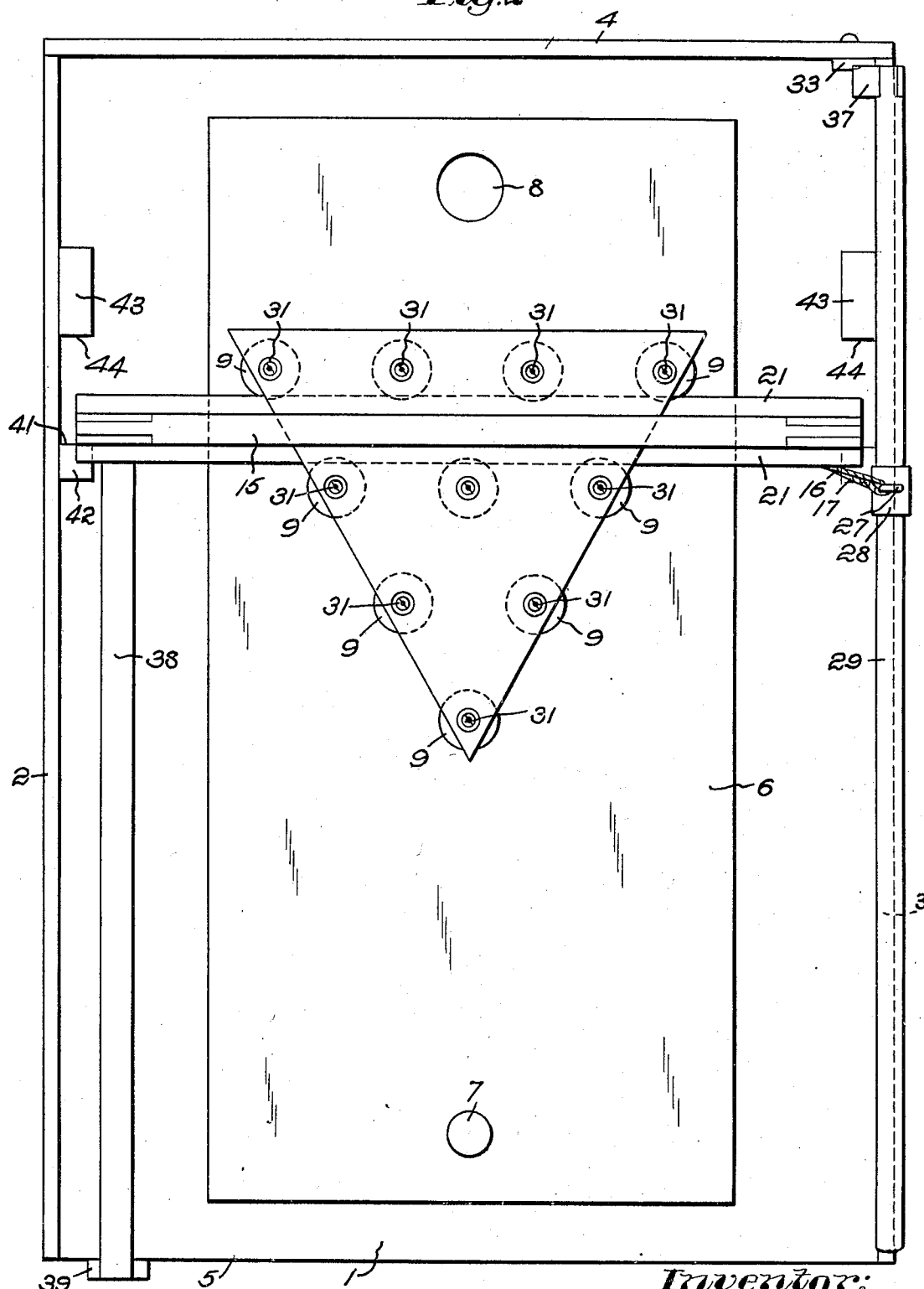
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Fig.2



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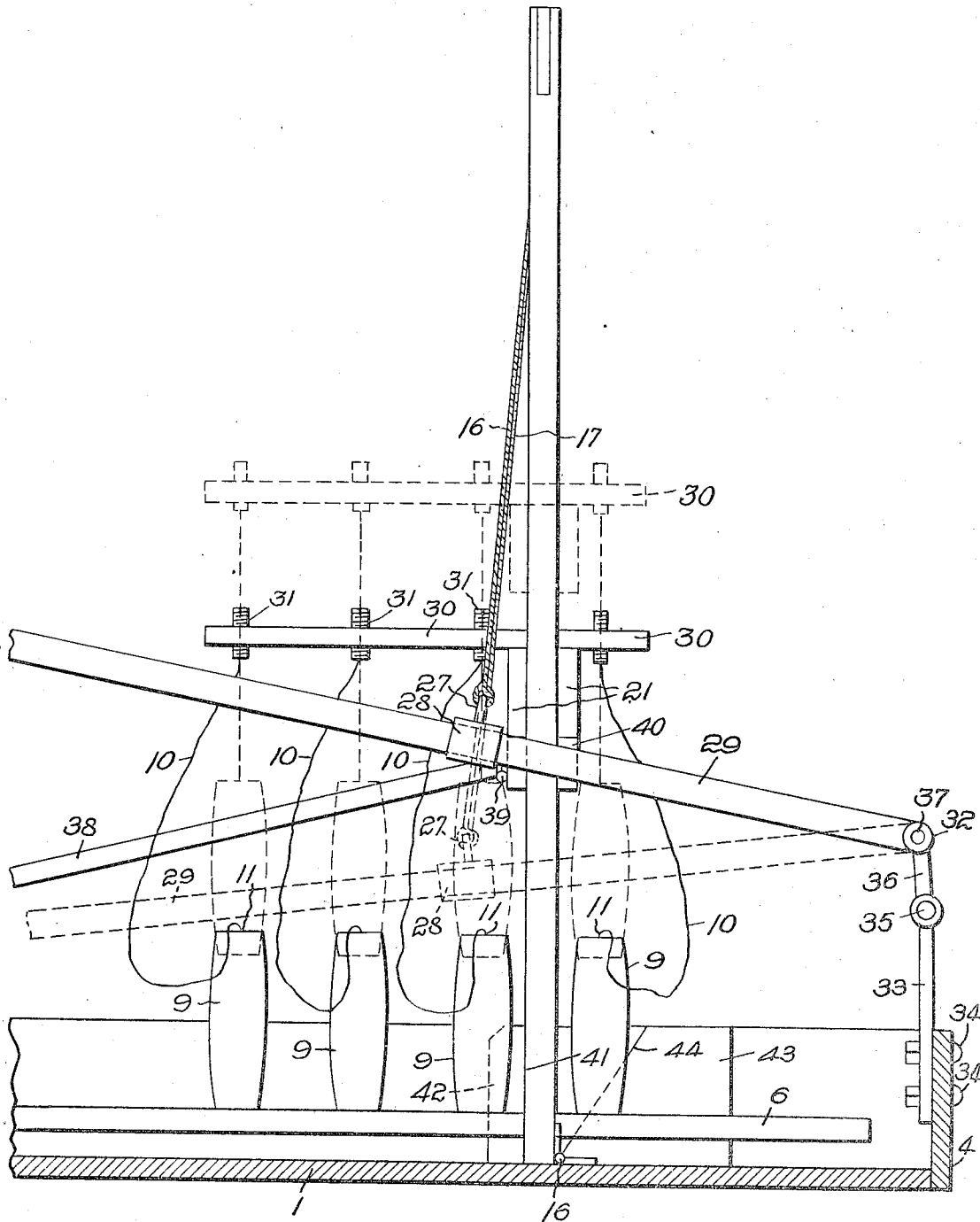
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Fig. 3.



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GAME APPARATUS HAVING PIECES
SETTING-UP MEANS

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7 Claims. (Cl. 273-44)

This invention relates to ball-and-pin game apparatus having pin setting-up means.

In order that the principle of the invention may be readily understood, I have disclosed the selective embodiment thereof in the accompanying drawings, wherein

Fig. 1 is a front elevation with parts in transverse section of a ball-and-pin game apparatus embodying my invention showing, in full lines, the pins set up and, in dotted lines, the pins in suspended condition during the act of mechanically setting up the pins;

Fig. 2 is a plan view of the game apparatus shown in Fig. 1;

Fig. 3 is a side elevation, partly in longitudinal section, looking from the right in Fig. 2 and showing, as in Fig. 1, the pins in solid lines in set-up condition, and in dotted lines in suspended condition during the act of being set up mechanically;

Fig. 4 is a detail view, partly in side elevation and partly in longitudinal section looking from the right in Fig. 2, showing the pin setting-up means tilted back to provide for greater possible movement of the pins when knocked down; and

Fig. 5 is a detail in transverse section looking downward from the line 5-5 of Fig. 1.

Owing to war conditions and for other reasons, it is difficult at the present time to obtain the services of pin boys for bowling alleys, and this has required the closing down or the handicapping of a great many such places of amusement. An important purpose of my invention is to provide mechanical means for setting up the pins of bowling alleys, which means preferably can be operated by the player or players and desirably from the playing position. A further object of the invention is to provide a ball-and-pin game having certain novel features and which can be played in several different ways.

The size and proportion of the parts may be widely varied within the scope of my invention, and the pins may be of any desired size and shape. Referring to the selected embodiment only of the invention, the pins indicated are about $7\frac{1}{2}$ inches long and $2\frac{1}{2}$ inches in diameter, and the ball or balls may be of any suitable corresponding size. The invention is in no wise limited to any particular size or proportion of parts, and any suitable material or materials may be employed for the various parts, such as wood, metal, etc.

Referring more particularly to the drawings, where a single embodiment only of the invention is shown, there is provided a bottomed en-

closure of a general shallow box-like form, which, as best shown in Figs. 1 and 2, is provided with a flat bottom 1, two upstanding sides 2 and 3, and an upstanding back 4 of any suitable height.

The bottom 1 may be of any desired length, as, for example, seven or eight feet or larger, but obviously the proportions may be widely varied within the scope of my invention. The front edge of the bottom 1, as indicated at 5, is entirely open, and suitably supported on the bottom 1 is a horizontal playing base 6 of any suitable length, along the surface of which the ball or balls are rolled. One of the balls is indicated at 7, and any suitable number may be provided.

There is indicated at 8 in Fig. 2 a hole in the playing base 6, which may be a pocket similar to those provided on a pool or billiard table. The manner of playing the game when using the hole or pocket 8 will be subsequently explained.

An important purpose of my invention is the provision of means for mechanically setting up the pins in a predetermined formation which is desirably, but not necessarily, that employed in bowling, that is to say, in a triangular formation, indicated in Fig. 2, where ten pins are represented as arranged in the customary manner for bowling, with four pins in the rear row, three in the row next in front thereof directly in front of the three spaces between the pins of the rear row, two pins in the next row directly in front of the two spaces between the pins of the three-pin row, and one pin directly at the apex of the triangular formation. Of course, any other suitable number of pins may be provided, and they may be set up in any different predetermined formation. If the number of pins employed or the setting-up formation be different from that indicated in Fig. 2, the shape and size of the supporting board or member next to be referred to, will be such as to accord with the desired number of pins and their setting-up formation.

An essential feature of the invention is that each of the pins 9 has attached centrally or axially to the upper end thereof, either in a detachable manner or permanently, a stout, desirably non-stretchable, cord or strand-like element 10 preferably of some suitable textile material. While such material might be a cord, it might be a narrow strip cut from a sheet of suitable material, such as leather or leather substitute. It is necessary that the cord or the like should be very flexible, but not elastic, as the cords are not intended to cause the pins to rebound, but, on the contrary, to permit them to be knocked down and roll freely, as in bowling. Each cord

should be of relatively great tensile strength, so that the cord will not be broken when the pin is knocked over with force or be pulled away from the pin or from the point of attachment to the setting-up means. Each cord 10 should be of sufficient length to permit the pin attached thereto, when knocked down, to be rolled a substantial distance, as in bowling.

The cord-like elements 10, each of which is connected to its pin 9 at 11, preferably in line with the longitudinal axis of the pin, is connected at its other end 12 to the setting-up means, which will be now described, and the form of which may be varied in accordance with the number of pins employed and the predetermined setting-up formation resorted to.

At a suitable point along the lengthwise extent of the bottom 1 of the playing enclosure, there is provided an upright supporting frame, here shown as consisting of the two parallel upright members 13, 14 of wood, metal or other material, and the connecting cross piece 15 secured thereto. This upright supporting frame is preferably hinged at its lower end, as indicated at 16 in Fig. 3, to the bottom 1 for a purpose to be explained. If desired, however, and within the scope of my invention, the said upright supporting frame may be mounted so as to be in vertical position at all times. The said upright supporting frame composed of the members 13, 14, 15 is of any suitable height for the purpose served thereby, which is to provide means for the up-and-down or sliding movement of a slidable frame having means to which the ends 12 of the several cords or strand-like elements 10 are attached. While for this purpose any suitable means may be provided, I have herein represented two very stout cords or ropes 16, 17, which at their lower ends are connected to hooks or other securing means 18, 19, suitably attached to and extending upwardly from the said sliding frame, indicated at 20, which sliding frame, as best shown in Fig. 5, is made up of two transversely extending, parallel strips 21, 21, and an intermediate, slightly shorter, filling-in piece 22, to which latter the hooks 18, 19 are preferably connected. The said cords or ropes 16, 17 extend upward over small pulleys or guides 23, 24, themselves supported by hooks 25, 26 on the under side of the top cross piece 15 of the upright supporting frame. The cords or ropes 16, 17 extend downward together, as shown in Fig. 1, and are attached at 27 to a collar or sleeve 28 fast upon a long rod or operating arm or member 29, or in any other suitable manner.

The several cords or strand-like elements 10 that are attached to the pins 9 are at their ends 12 connected to a flat board or plate 30 which is itself secured in a flatwise position to the upper face of the slidable frame 20, herein shown as made up of the strips 21, 21 and 22. The said flat board or plate 30 is here shown as triangular but, as previously stated, this form may be changed or varied within the scope of my invention if desired. Each of the cords or strand-like members 10 is secured at 12 to the said board or frame 30 by adjustable screw means, indicated at 31, by which the exact desired length of each cord 10 may be provided for. That is to say, the screw-like adjusting means 31 for the respective cords 10 may be moved up and down, so that as the suspended pins are lowered into their setting-up position, they may all reach their position at substantially the same instant. This,

however, is not essential in the practice of my invention.

In order to slide the frame 20 up and down, there is, in this embodiment of my invention, provided the operating rod or member 29, previously referred to, which, as best shown in Figs. 2 and 3, is pivoted at 32 at the rear of the bottomed enclosure. Preferably for this purpose there is provided a bracket 33 secured by bolts 34 to the upstanding rear edge 4 of said enclosure. At the upper end of the bracket 33 there is pivoted at 35 a link 36 to which the said rod or member 29 is directly pivoted at 37. The purpose of the link 36 will be subsequently stated.

As shown in Fig. 2, the rod or member 29 is arranged at one side of the enclosure structure so as to extend lengthwise to the front of the entire apparatus into convenient position to be grasped and operated by the player when standing in playing position. It is obvious that by downward movement of the rod or member 29 into the dotted line position shown in Fig. 3, the slidable frame 20 is elevated with its triangular board or plate 30 into the dotted line position indicated in Figs. 1 and 3, so that, as shown in dotted lines in Figs. 1 and 3, the pins 9 are suspended in vertical position directly over their setting-up positions respectively. It is necessary to swing downwardly the rod or member 29 only sufficiently to get the lower ends of the pins 9 clear of the playing base 6, and then the rod or member 29 is moved upwardly sufficiently to lower the pins 9 carefully into their setting-up or playing positions, where each pin stands in proper place, as indicated in Figs. 1 and 3, with sufficient slack of the cords or strand-like elements 10 to allow the player to propel the ball 7 and knock down the pins which then, according to the amount of slack provided by the cords 10, roll about as in bowling.

As stated, the upright supporting frame consisting of the parts 13, 14, 15 may be fixedly mounted in upright position. Preferably, however, the said frame is hinged as at 16 at its lower end to the bottom 1 of the enclosure, and means are provided for tilting back the said upright supporting frame, so as to move further back the board or plate 30 to which the cords or strand-like elements 10 are attached, as indicated in Fig. 4, the rod or member 29 serving to swing the link 36 about its pivot 35. As there indicated, this permits the pins 9 to be knocked further by the ball or balls 7 when struck and adds further interest to the game.

Any suitable means may be provided to tilt the said upright supporting frame 13, 14, 15 back and forth. For the purpose I have herein represented an operating rod or member 38 hinged as at 39 to a collar 40 fixed on the left-hand upright 13 of the said upright supporting frame below the slidable frame 20, and extending along the left-hand side of the apparatus, as best indicated in Fig. 2, to a point near the playing position. Desirably the front end of the rod or member 38 is provided with a bracket or the like 39' that may be engaged with the front edge 5 of the bottom 1 of the enclosure so as to maintain the said upright supporting frame 13, 14, 15 in firm vertical position, and preferably against the vertical edge 41 of a stop 42, shown in Fig. 4 as extending upward from the bottom 1 of the enclosure, and against which the front vertical edge of the tiltable upright supporting frame engages when said frame is in upright position. Also I desirably provide a fixed

stop 43 with an inclined edge 44 at its front face, against which the said upright supporting frame 13, 14, 15 contacts when tilted backward as shown in Fig. 4.

The game apparatus may be used for bowling in the usual manner. As an additional feature of the game, I desirably provide one or more holes or pockets 8, one being shown in Fig. 2, the purpose thereof being to receive the ball 7 propelled by the player in any suitable manner as by being rolled by hand, as in bowling, or by the use of a cue as in pool or billiards, or by the use of a putter as in golf. Obviously the ball 7 cannot be propelled into the hole or pocket 8 while all of the pins 9 are standing, but with one or more of the pins knocked down, the ball 7 can be rolled or propelled from some carefully selected position on the base 6 toward the hole or pocket 8 and one or more of the pins 9, whether upright or fallen, might be utilized as a surface to be struck by the ball 7 and deflected off against another pin and eventually to roll into the hole or pocket 8 if the attempt is successful, whether on the initial rolling of the ball or on a subsequent rolling with some of the pins down.

Any number of players may participate in the game, and after all the pins are knocked down, the rod or member 29 is manipulated by an up-and-down or pumping-like motion as described, so as to set up the pins again. It would be possible also to play a variation of the game with the pins slightly elevated off the playing base 6 sufficiently so that the ball 7 might be rolled either straight into the hole 8 or in such a way as to be deflected by the lower ends of the pins, if very close to the playing base. For this purpose the pins may, if desired, be given a special shape, though in Figs. 1 and 4 they are shown as of the customary shape.

Throughout the specification, I have referred to "pins," and in the drawings I have represented pins 9 of substantially usual shape, but it is to be understood that within the scope and purpose of the invention the so-called "pins" may be pieces of many different shapes and sizes. It is, however, of the essence of my invention that the so-called "pins" (whatever their shape and size and number) be pieces attached by cord-like elements 10 to a frame, board or member, so that after the so-called "pins" have been knocked down, they may be set up by moving such frame, board or member in any desired way, and by means differing widely from the means herein shown.

I have herein disclosed the preferred means for mechanically moving such frame, board or member, but it is to be understood that the frame, board or member (whatever its shape or form, or however many "pins" be attached thereto by flexible, non-elastic cord-like members 10) may be manipulated wholly by hand, so as to set up the "pins" after they have been knocked down. If the frame, board or member be supported upon or carried by some part of the game apparatus, it may be moved up and down mechanically in any suitable way, desirably by an element or part that can be readily manipulated by the player when at his playing position, or from some other point, as, for example, at one side or the other of the apparatus, so as to be manipulated by a person seated in a chair at the side of the apparatus.

The entire apparatus may be placed upon a table or supported above the floor in any suitable

manner and at any desired height, or it may rest directly upon the floor or ground, particularly if a putter or other golf club is to be used to get the ball in the hole or pocket 8.

Having thus described one illustrative embodiment of the invention, it is to be understood that although specific terms are employed, they are used in a generic and descriptive sense, and not for purposes of limitation, the scope of the invention being set forth in the following claims.

I claim:

1. A game apparatus employing a ball or balls and a set of pins to be knocked over thereby, a bottomed enclosure constituting the basal portion of the apparatus, a playing base on said basal portion, and whereon the pins are to be set up, an upright supporting frame rising from said basal portion, means mounted for up-and-down sliding movement on said upright supporting frame, a series of cords respectively attached at one end to the pins and at the other end to the said slidable means at points bearing the same relation to each other as the points do to each other at which the pins are to be set up on the playing base, means for moving said slidable means up and down on said upright supporting frame, and means for tilting said upright supporting frame backward, the said means for moving the slidable frame up and down and the said means for tilting the upright supporting frame backward extending into position to be conveniently manipulated by the player when in playing position, the said upright supporting frame being pivoted at its lower end to the said basal portion, so that it can be tilted backward to provide for greater rolling movement of the pins when knocked down.

2. A game apparatus employing a ball or balls and a set of pins to be knocked over thereby, a bottomed enclosure constituting the basal portion of the apparatus, a playing base on said basal portion, and whereon the pins are to be set up, an upright supporting frame rising from said basal portion, means mounted for up-and-down sliding movement on said upright supporting frame, a series of cords respectively attached at one end to the pins and at the other end to the said slidable means at points bearing the same relation to each other as the points do to each other at which the pins are to be set up on the playing base, means for moving said slidable means up and down on said upright supporting frame, and means for tilting said upright supporting frame backward, the said means for moving the slidable frame up and down and the said means for tilting the upright supporting frame backward extending into position to be conveniently manipulated by the player when in playing position, the said upright supporting frame being pivoted at its lower end to the said basal portion of the apparatus, the means for tilting the upright supporting frame being a rod connected to and extending from said pivoted tiltable frame forward for easy access by the player so as to tilt the frame.

3. A game apparatus employing a ball or balls and a set of pins to be knocked over thereby, a bottomed enclosure constituting the basal portion of the apparatus, a playing base on said basal portion, and whereon the pins are to be set up, an upright supporting frame rising from said basal portion, means mounted for up-and-down sliding movement on said upright supporting frame, a series of cords respectively attached at one end to the pins and at the other end to the

said slidable means at points bearing the same relation to each other as the points do to each other at which the pins are to be set up on the playing base, means for moving said slidable means up and down on said upright supporting frame, and means for tilting said upright supporting frame backward, the said means for moving the slidable frame up and down and the said means for tilting the upright supporting frame backward extending into position to be conveniently manipulated by the player when in playing position, the said upright supporting frame being pivoted at its lower end to the said basal portion of the apparatus, the means for tilting the upright supporting frame being a rod connected to and extending from said pivoted, tiltable frame forward for easy access by the player so as to tilt the frame, the said rod having means for engaging it with the front edge of the basal portion so as to maintain the frame firmly in upright position.

4. A game apparatus employing a ball or balls and a set of pins to be knocked over thereby, a bottomed enclosure constituting the basal portion of the apparatus, a playing base on said basal portion, and whereon the pins are to be set up, an upright supporting frame rising from said basal portion, means mounted for up-and-down sliding movement on said upright supporting frame, a series of cords respectively attached at one end to the pins and at the other end to the said slidable means at points bearing the same relation to each other as the points do to each other at which the pins are to be set up on the playing base, means for moving said slidable means up and down on said upright supporting frame, and means for tilting said upright supporting frame backward, the said means for moving the slidable frame up and down and the said means for tilting the upright supporting frame backward extending respectively lengthwise along

the two sides of the apparatus to the front thereof in position to be conveniently manipulated by the player when in playing position.

5. A game apparatus employing a ball or balls and a set of pins to be knocked over thereby, a bottomed enclosure constituting the basal portion of the apparatus, a playing base on said basal portion, and whereon the pins are to be set up, an upright supporting frame rising from said basal portion, means mounted for up-and-down sliding movement on said upright supporting frame, a series of cords respectively attached at one end to the pins and at the other end to the said slidable means at points bearing the same relation to each other as the points do to each other at which the pins are to be set up on the playing base, means for moving said slidable means up and down on said upright supporting frame, and means for tilting said upright supporting frame backward, the said means for moving the slidable frame up and down and the said means for tilting the upright supporting frame backward extending into position to be conveniently manipulated by the player when in playing position.

6. A game apparatus in accordance with claim 5, but wherein for operating said slidable means there is provided a rod-like member 38 hinged to the said slidable means and extending to the front of the apparatus.

7. A game apparatus in accordance with claim 5, but wherein the said slidable means has attached thereto upwardly extending cords 16, 17, and wherein there are provided guides 23, 24 about which said cords extend and thence downwardly, and wherein there is an operating rod to which said cords are attached, said rod being pivoted to the apparatus and extending forward into position to be manipulated by the player.

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