United States Patent [19]

Appel et al.

[11] **3,910,583**

[45] **Oct. 7, 1975**

[54] **GOLF GAME APPARATUS**

[76] Inventors: **Peter W. Appel,** 84 Elizabeth Way, San Rafael, Calif. 94901; **Walter K. Appel,** 3514 Concord, Cheyenne, Wyo. 82001

[22] Filed: **Sept. 12, 1974**

[21] Appl. No.: **505,264**

[52] **U.S. Cl.**... **273/176 F;** 273/176 FC; 273/182 A; 273/179 B

[51] **Int. Cl.**[2]..... **A63B 69/36**

[58] **Field of Search**..... 273/182, 181 A, 176 F, 273/176 FA, 185 R, 179

[56] **References Cited**

UNITED STATES PATENTS

1,012,820	12/1911	Cory	273/176 F
1,043,308	11/1912	Everson	273/182 A
1,923,152	8/1933	Kohn	273/181 A
1,965,838	7/1934	Hofflund	273/182 A
3,328,033	6/1967	Hendry	273/182 R

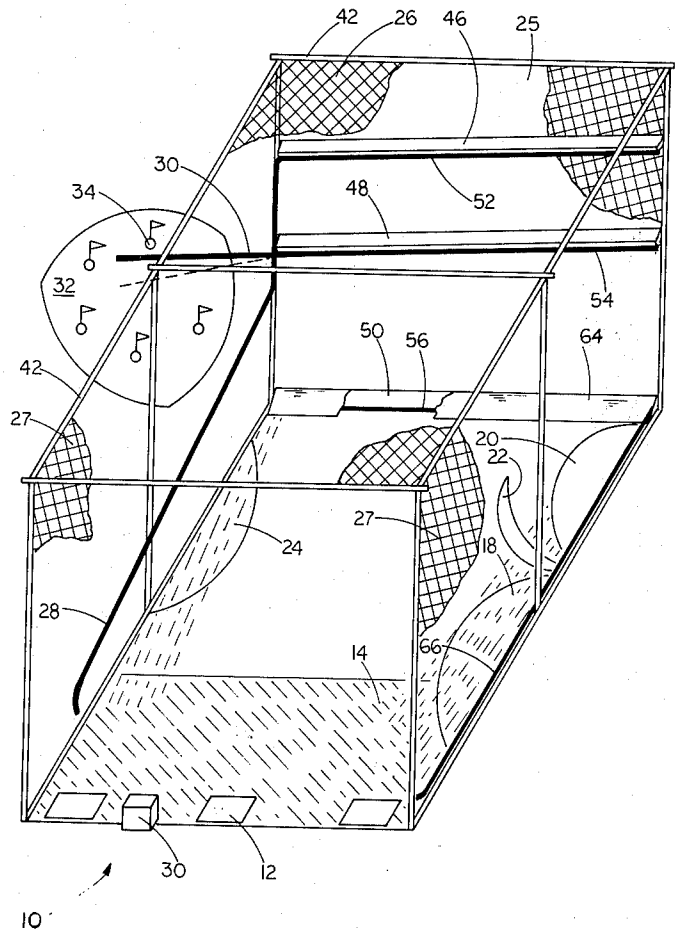
Primary Examiner—George J. Marlo

Attorney, Agent, or Firm—Melvin R. Stidham, Esq.

[57] **ABSTRACT**

The disclosure is of a simulated golf game including a vertical flexible sheet or netting into which the golf ball may be driven to drop into one or more pouches. Conveyer tubes from the pouches to a simulated fairway area or a putting green have several exit openings along their lengths in various angular positions, whereby the precise location of a ball dropping therefrom cannot be predetermined. The point of delivery is governed by the velocity of the ball and its alignment with a delivery opening, and means are provided to direct it along a spiral path and to retard the velocity thereof to varying degrees.

9 Claims, 10 Drawing Figures



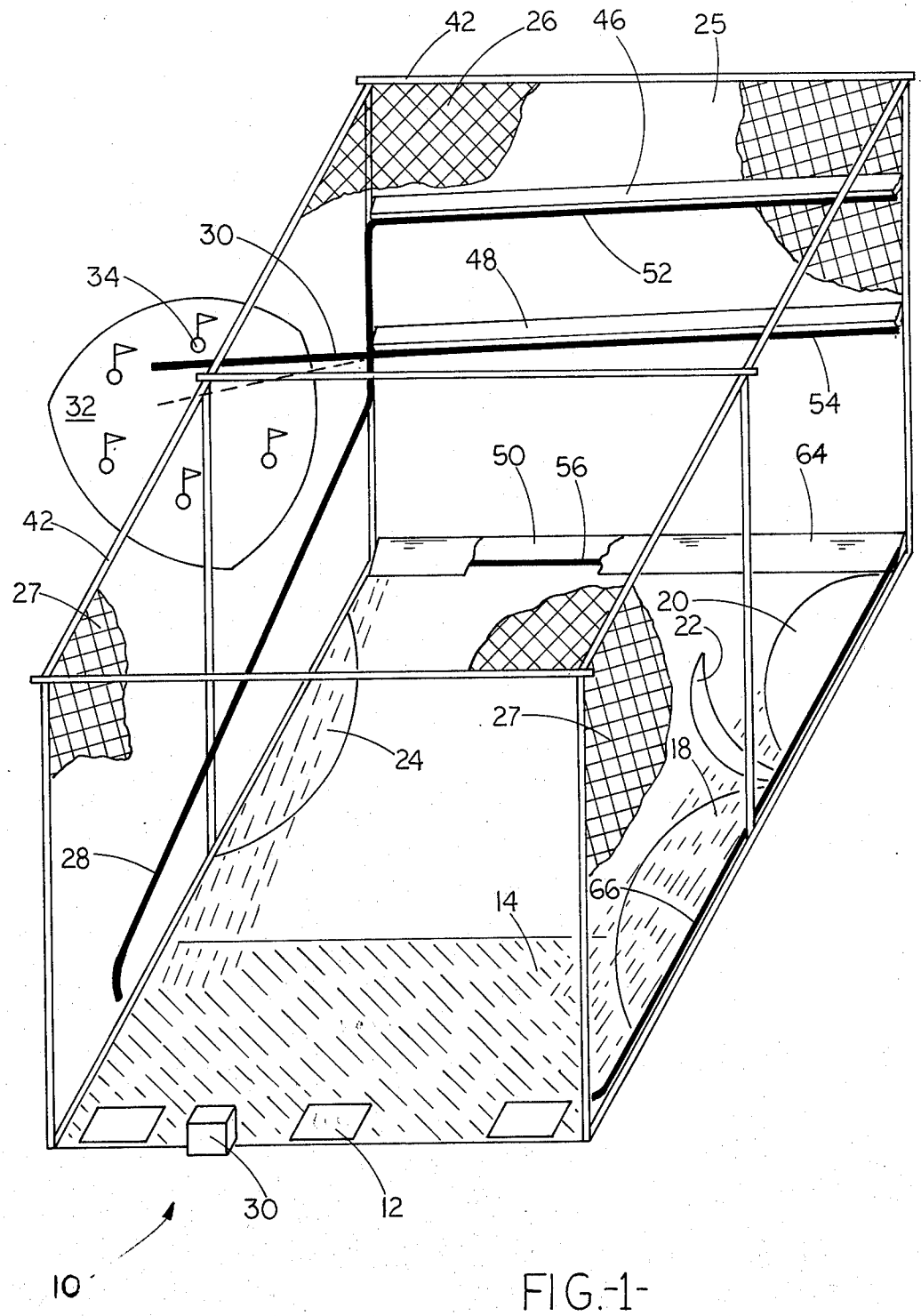

42
26
46
25
30
48
52
34
32
54
50
56
64
42
27
20
22
27
18
24
28
66
14
30
12
10

FIG.-1-

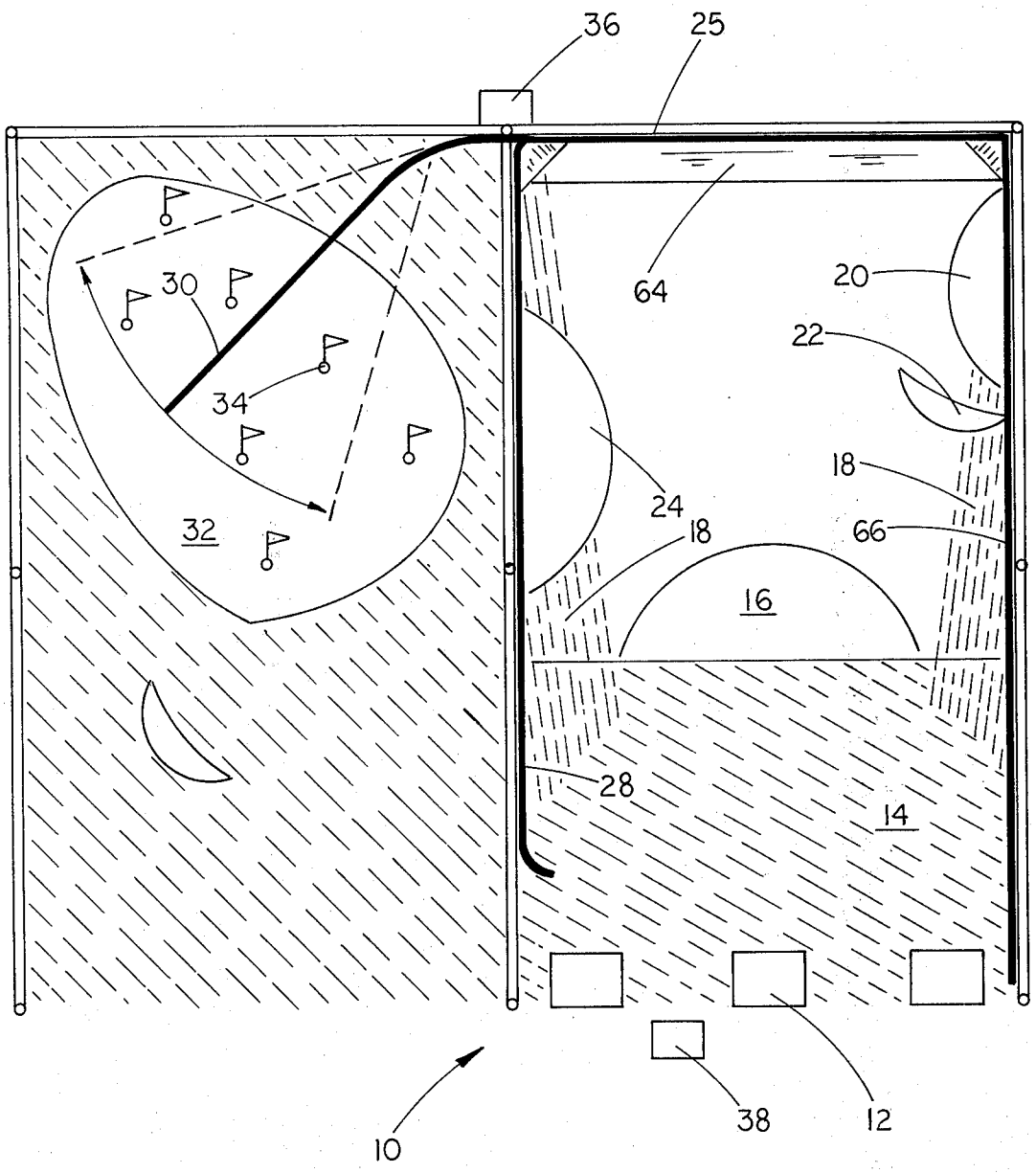


FIG.-2-

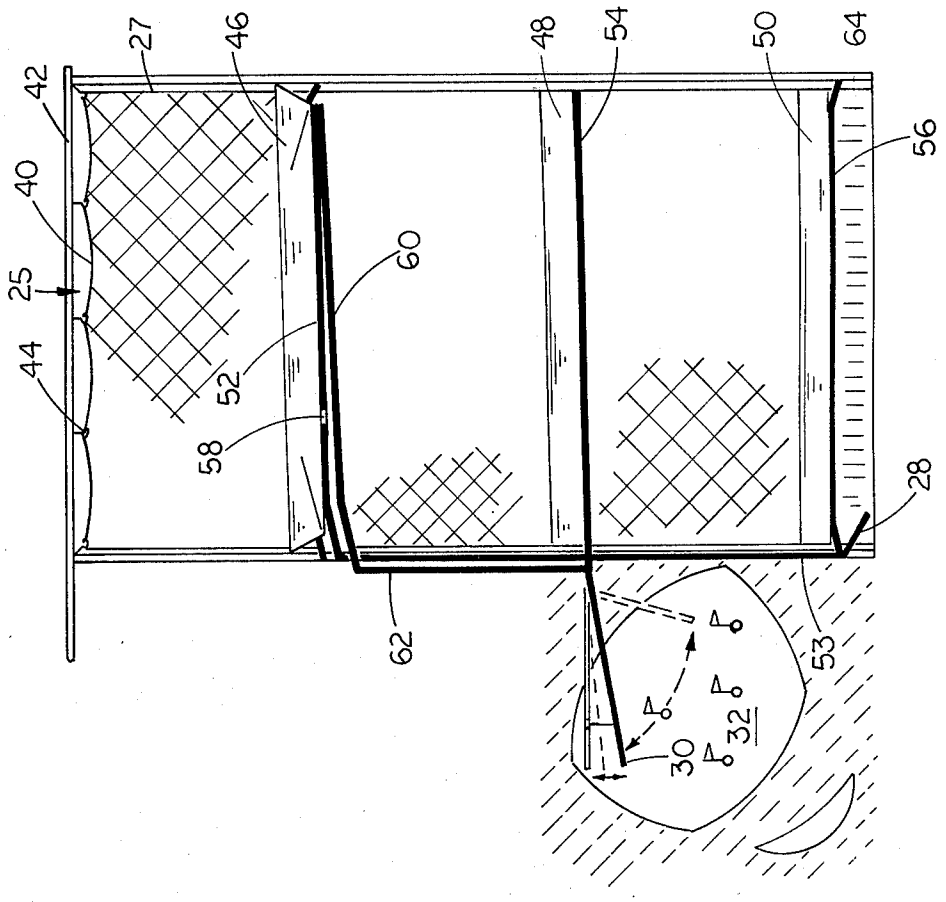

27
46
48
54
50
64
42
40
56
25
60
44
52
58
28
62
53
32
30

FIG.-3-

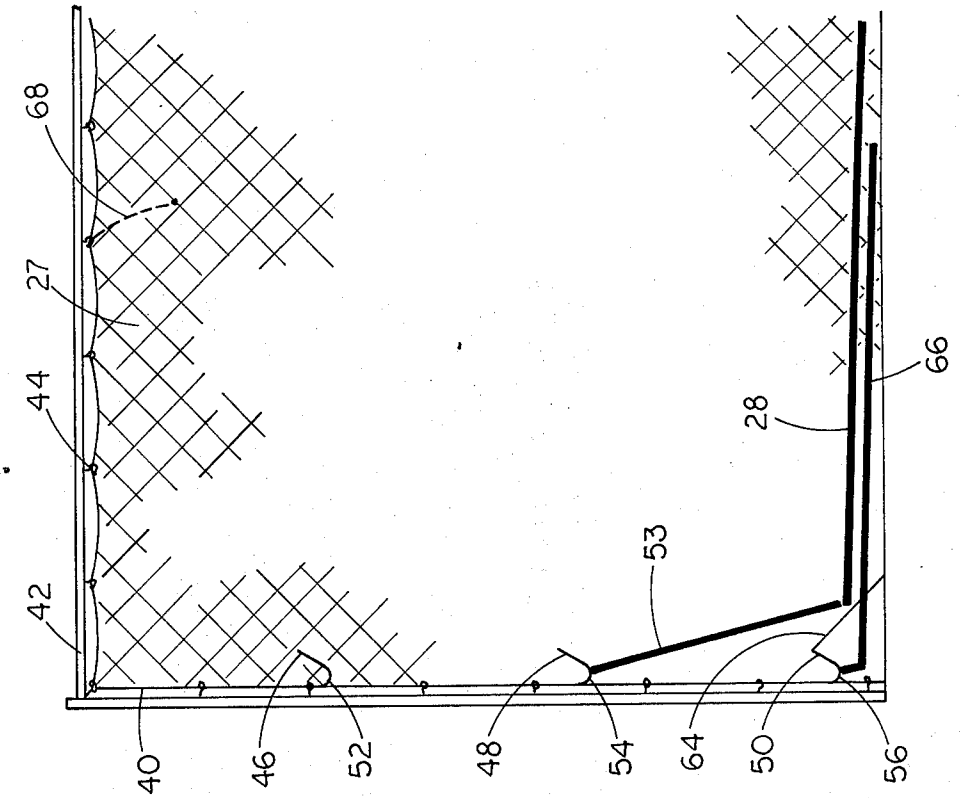

68
27
44
42
66
28
53
40
46
52
48
54
64
50
56

FIG.-4-

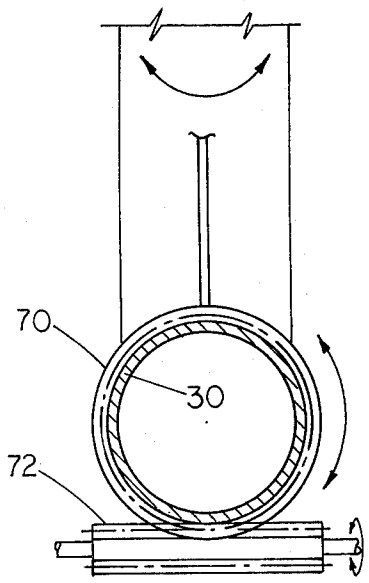


FIG.-6-

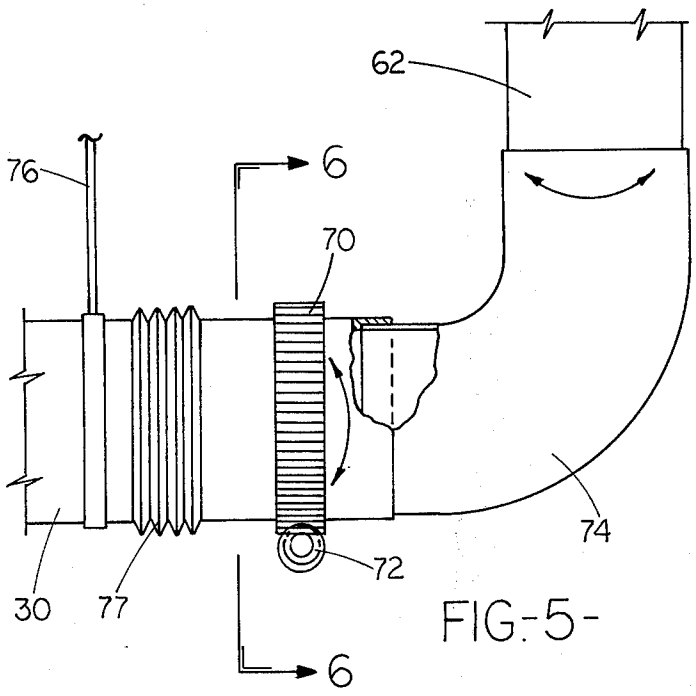


FIG.-5-

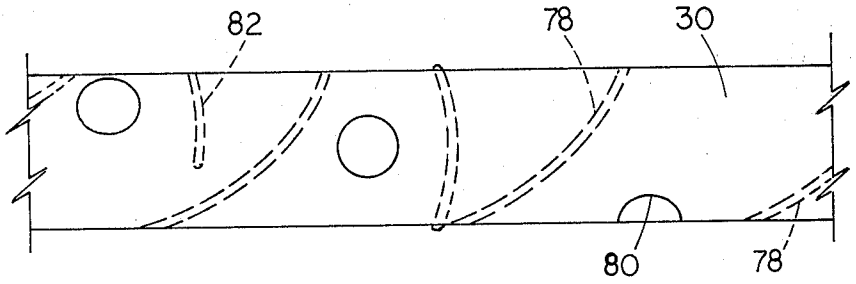


FIG.-7-

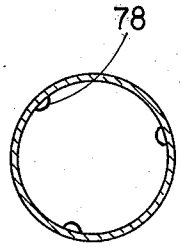


FIG.-8-

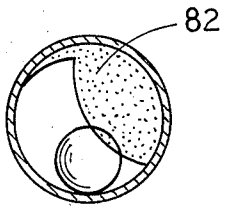


FIG.-9-

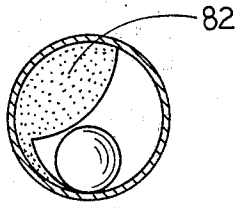


FIG.-10-

GOLF GAME APPARATUS

BACKGROUND OF THE INVENTION

Gold driving ranges provide means for practicing shots with various clubs but require a relatively large land area, and they are generally located in urban areas where land values are high. Consequently, some driving ranges have been established on relatively small areas by use of golf driving nets into which golf shots may be directed. However, both the conventional golf driving ranges and the driving nets merely provide means for practicing golf shots with various clubs, and neither provides satisfactory means for simulating play on an actual golf course.

OBJECTS OF THE INVENTION

It is an object of this invention to provide a means for playing a simulated game of golf in a relatively small area.

It is a further object of this invention to provide a simulated golf course wherein, after a shot is made, the ball is delivered to another area for subsequent golf shot.

It is a further object of this invention to provide a means for receiving a golf shot and delivering it to another area for a subsequent golf shot, including a rough area in the case of a poorly made shot.

It is a further object of this invention to provide a means for intercepting a golf shot and delivering it to any one of various unpredictable locations in or around a putting green.

Other objects and advantages of this invention will become apparent from the description to follow when read in conjunction with the accompanying drawings.

SUMMARY OF THE INVENTION

In carrying out this invention, there is provided an enclosure, including a tee area at one end with suspended flexible sheets of netting or the like along the sides and at the opposite end. Pouches, which extend horizontally across the netting at the opposite end, catch balls driven into the net and means including conveyer tubes deliver them either to a fairway area for a subsequent shot or to a location on or around a putting green. Particularly in the case of the conveyer tube to the putting green, there may be several delivery openings along the length of the tube and at various angular locations. Means may be provided to impart spiral paths to the balls passing through the tube, whereby a ball dropped through a delivery opening with which it may become aligned while traveling at a velocity slow enough to drop. Means may also be provided to retard the velocity of the ball to varying degrees, dependent upon the angular position of the ball at the location of the retarders, further adding to the uncertainty of the location of the ball delivery. The putting green delivery tube may be moved to various positions above the putting green, and its elevation may also be varied to vary the roll of the ball after delivery.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1 is a view in perspective of a simulated golf game embodying features of this invention;

FIG. 2 is a top view of the simulated golf game;

FIG. 3 is an end view of the simulated golf game looking from the tee area;

FIG. 4 is a partial side view of the simulated golf course;

FIG. 5 is a partial side view of a ball conveyer tube;

FIG. 6 is a section view taking along line 6—6 of FIG. 5;

FIG. 7 is a partial side view of a ball delivery tube; and

FIGS. 8, 9 and 10 are section views of the delivery tube.

DESCRIPTION OF A PREFERRED EMBODIMENT

Referring now to FIGS. 1 and 2, the simulated golf game 10 of this invention includes a tee area 12, a first grassy area 14 for playing long irons and fairway woods and a second grassy area way 16 for playing short irons. There may also be provided rough areas 18 with long grass, water hazards 20, sand traps 22, and even an area 24 deemed to be out of bounds.

From a back screen 25 into which drives and fairway shots are directed, is a ball return conveyer tube 28 designed to return the golf ball to the long range fairway area 14 and a second conveyer tube 30 directed to an adjacent putting green 32 with marked holes 34. As indicated by the dotted lines in FIG. 2, the putting green delivery conveyer 30 may be pivoted to several positions to vary the location on the green 32 where a ball may be dropped. A suitable drive mechanism 36, a preferred embodiment of which will be described in greater detail, is operative to pivot the conveyer tube and this may be operated at the tee area by a suitable control box 38.

Referring now to FIGS. 1 to 4, the back screen 25, top screen 26 and side screens 27 comprise flexible sheets, preferable of a cord netting, which may be suspended from a frame 42 as by means of suitable hooks 44. Golf balls driven into the netting drop into pouches 46, 48, and 50 extending across the width thereof and are carried along troughs 52, 54 and 56 forming the bottoms of the pouches 46, 48 and 50, respectively, to be conveyed to the green 32 or back to the grassy area 14 for play as a fairway shot. The troughs 52, and 54 in the upper two pouches may be sloped from right to left in FIG. 2. One or both of the troughs 52 and 54 may be connected by downwardly directed tubes 53 (FIGS. 3 and 4) to a return conveyer tube 28 whereby a ball dropping into the pouch will be returned to the long fairway area 14. As shown in FIG. 3, the troughs may have an opening shown at 58 in upper trough 52, near the delivery end thereof through which a ball may drop onto an underlying trough 68, which in turn carries the ball to conveyer tubes 62 and 30 for delivery on, or in the area of, the green 32. The underlying trough 60 may be selectively raised by any suitable means (not shown) to block the opening 58 whereby all balls landing in the upper pouch 46 will be delivered back to the tee area 14 for play as a fairway shot.

A ramp 64 may be provided at the bottom of the net to receive rolling balls which were topped at the tee area and direct them into the third pouch 50 and along the trough 56 sloped in either direction to conveyer tubes 66 which extend along the side nets 27 and direct a ball carried thereby to the rough area 18 or water hazard 20. Suspended from the overhead area, may be provided sky nets 68 (FIG. 4) which block excessively lofted shots from reaching the target screen 26, and drop them into the rough area 18 to prevent a golfer from being unduly rewarded for a poorly hit shot.

Referring now to FIGS. **5** through **10,** there are shown several means for varying the delivery of the ball from the conveyer tubes. For example, the putting green conveyer tube **30** may be provided with a ring gear **70** engaged to be driven by a worm gear **72,** whereby rotation of the worm gear **72** causes the ring gear to walk **70** along it, rotating the tube **30** about its own axis and pivoting it about the axis of the down tube **62,** which is connected to the conveyer tube through an elbow **74.** This pivots the delivery tube **30,** as indicated in FIGS. **1** to **3,** to suspend it over various areas of the green. In addition, suitable lift means, such as the cable **76** shown, may be operated to vary the elevation of the conveyer tube **30** above the green to vary the amount of drop and, hence, the amount of roll imparted to the ball after being delivered from the conveyer tube **30.** Such variations in elevation are enabled by suitable flexible means, such as a bellows **77.**

As shown in FIGS. **7** and **8,** there may be provided tracks **78** on the inside of the tube directed in a spiral or any other suitable pattern, whereby a spin is delivered to the ball and the ball is caused to traverse various portions of the tube's circumference, and thereby be disposed in various angular positions. In addition, delivery openings **80** are located at various angular positions of the tube and along the length thereof, whereby the exit of the ball will depend upon its velocity and its angular alignment with a delivery opening **80.** Further, in order to retard the ball velocity to varying degrees, there may be provided along the length of the tube suitable retardation flaps **82** intended to retard the velocity of the ball which may engage it. Hence, a ball which is traversing the tube may be slowed to varying degrees (FIGS. **9** and **10**), or even allowed to pass freely, depending upon the angular position of the flap relative to the path of the ball and, hence, the extent of blockage. The degree of retardation influences both the path of ball travel and its velocity, and this will have some bearing on the specific delivery opening **80** through which it may drop.

While the spiral imparting means **78** and the retarding flaps **82** have been described in the green delivery tube **30,** the same may also be provided in the side delivery tubes **66** whereby the particular hazard **18, 20,** 22 or **24** into which a topped shot delivered from the ramp **64** and bottom trough **50** cannot be predicted. Of course, hooked, sliced or shanked shots driven into the side nets **27** will likewise drop into the rough **18,** a trap **22,** water hole **20** or out of bounds **24.**

While this invention has been described in conjunction with preferred embodiments thereof, it is obvious that modifications and changes therein may be made by those skilled in the art without departing from the spirit and scope of this invention as defined by the claims appended hereto.

What is claimed as invention is:

1. A golf game apparatus comprising:
a tee area from which a ball may be propelled;
a generally vertical, flexible sheet opposite said tee area adapted to yieldably brake a ball projected against it;
a receptacle extending across said sheet to receive a ball dropping along the surface of said sheet;
a putting green area where a subsequent golf shot may be played;
means including a first conveyor tube to deliver balls from said receptacle to said putting green; and
a plurality of delivery openings spaced axially and angularly along said conveyor tube large enough to enable a ball to pass therethrough; and
means for propelling a ball through said conveyor tube along a spiral path.

2. The golf game appratus defined by claim **1** including:
means for retarding the velocity of a ball traveling through said conveyer tube.

3. The golf game apparatus defined by claim **2** wherein said retarding means comprises:
at least one flap pivotally carried in said tube to extend partially thereacross.

4. The golf game apparatus defined by claim **1** wherein:
said conveyor tube is rotatable about its own axis.

5. The golf game apparatus defined by claim **1** including:
means for varying the elevation of said conveyor tube.

6. The golf game apparatus defined by claim **1** wherein:
said conveyor tube may be pivoted to dispose said delivery openings at different locations above said putting green.

7. The golf game apparatus defined by claim **6** including:
a grassy area where a fairway club may be used to play a subsequent shot; and
means including a second conveyer tube to deliver balls from said receptacle to said ground area.

8. The golf game apparatus defined by claim **6** including:
side flexible sheets extending between said tee area and said opposite sheet; and
hazard areas along said side sheets.

9. The simulated golf course defined by claim **8** including:
a second receptacle along the bottom of said opposite sheets;
ramp means for directing rolling balls into said second receptacle; and
means including second conveyer tubes to deliver balls from second receptacle to said hazard areas.

* * * * *