C. M. LINLEY.

APPARATUS FOR PLAYING A GAME OF SKILL WITH A CAPTIVE BALL.

APPLICATION FILED MAR. 24, 1920.

1,345,789.

Patented July 6, 1920.

2 SHEETS—SHEET 1.

FIG. 1.

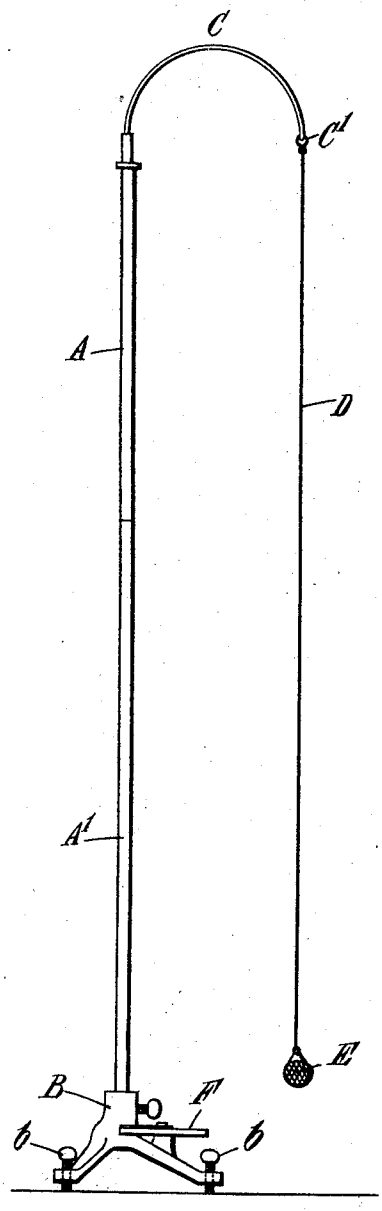
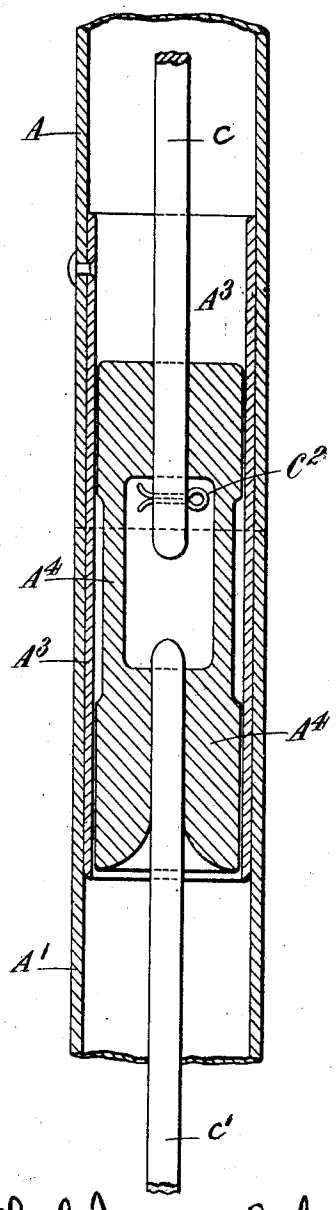


FIG. 2.



Charles Montague Linley
INVENTOR
by Samuel E. Darby
his Attorney

C. M. LINLEY.

APPARATUS FOR PLAYING A GAME OF SKILL WITH A CAPTIVE BALL.

APPLICATION FILED MAR. 24, 1920.

1,345,789.

Patented July 6, 1920.

2 SHEETS—SHEET 2.

FIG. 3.

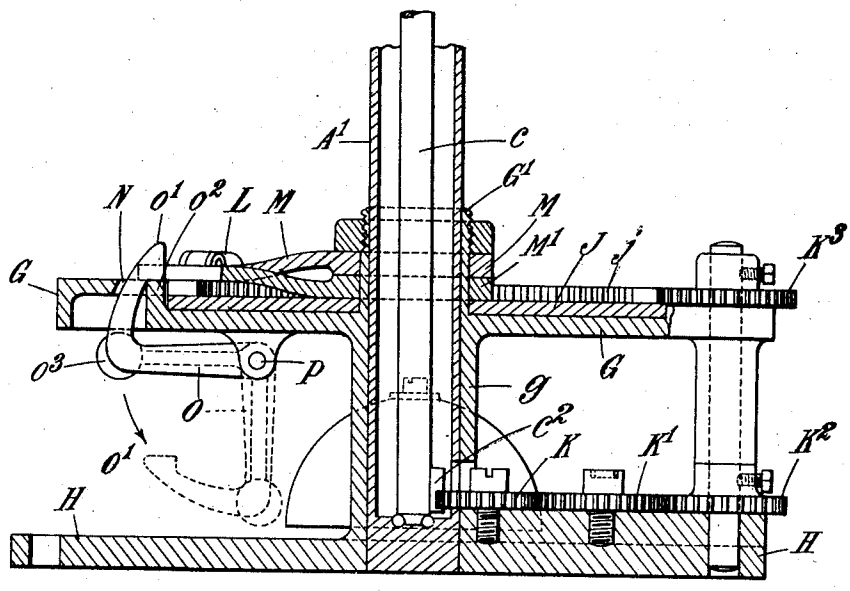


FIG. 4.

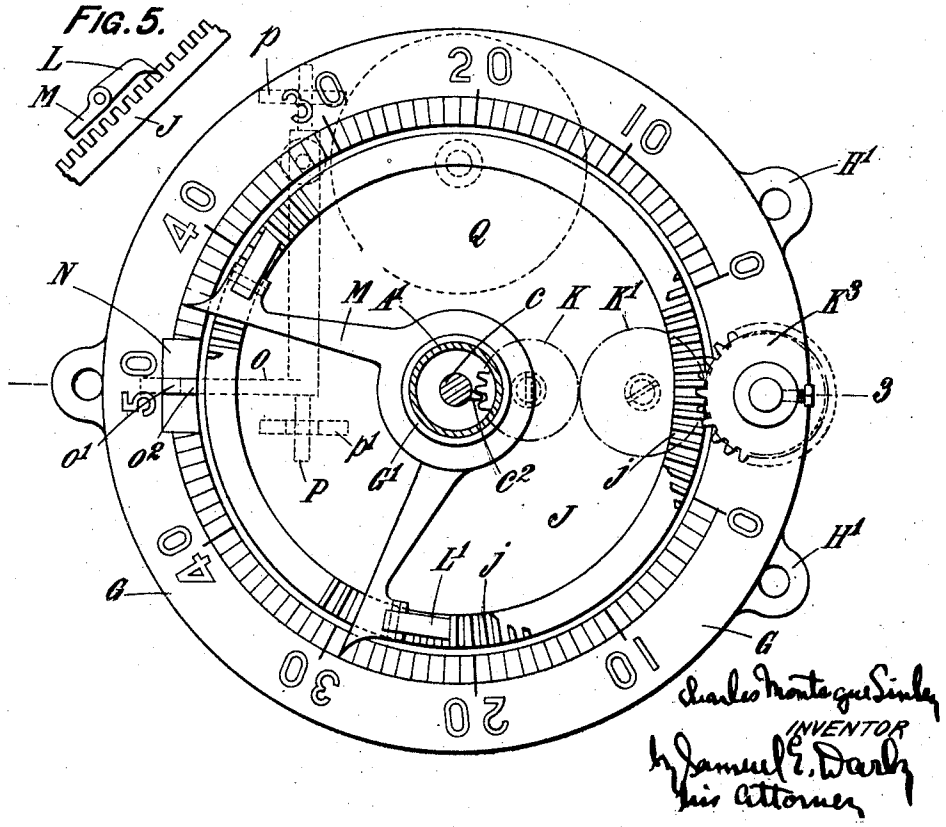


FIG. 5.

Charles Montague Linley
INVENTOR
by Samuel E. Darby
his Attorney

UNITED STATES PATENT OFFICE.

CHARLES MONTAGUE LINLEY, OF LONDON, ENGLAND.

APPARATUS FOR PLAYING A GAME OF SKILL WITH A CAPTIVE BALL.

1,345,789. Specification of Letters Patent. Patented July 6, 1920.

Application filed March 24, 1920. Serial No. 368,398.

To all whom it may concern:

Be it known that I, CHARLES MONTAGUE LINLEY, a subject of the King of Great Britain and Ireland, residing at 317 Old Kent Road, London, S. E., England, have invented certain new and useful Improvements in and Relating to Apparatus for Playing a Game of Skill with a Captive Ball, of which the following is a specification.

This invention relates to a game of skill, played with a captive ball, and its object is to provide improved apparatus suitable for this purpose.

The device consists of an upright support, and a captive ball suspended from the upper end thereof, so arranged that the ball can be made to travel around the support without the cord or other flexible supporting means winding itself around the support, together with an automatic scoring device, adapted separately to record the revolutions in either direction, of the ball around the support.

The invention is illustrated in the accompanying drawings, in which:—

Figure 1 shows a view in elevation of one form of the complete apparatus,

Fig. 2 a section (to an enlarged scale) of the joint in the stanlard for securing the sections thereof together when made up of more than one piece,

Fig. 3 a section through the scoring device, taken on line 3—3, Fig. 4,

Fig. 4 a plan view of the scoring device,

Fig. 5 is a part edge view of the rotating toothed disk with means for engaging the gravity pawls on the pointers.

The apparatus used in playing the game, consists of a vertical tubular standard of suitable height, formed of one or more sections of tube, the example shown being made in two sections A, A^1, the lower section being supported upon and firmly secured to a triangular base B, which is provided with thumb screw adjustments b, by which the standard can be set in a vertical direction. The standard forms a supporting pivot bearing for a light shaft c, c^1, see Fig. 2, which shaft is provided with ball bearings of a suitable type, at its upper and lower ends, (see Fig. 3) by which means the shaft c, c^1 can freely rotate in either direction. The inner shaft c is continued above the upper portion of the standard A, and is suitably curved, or bent at an angle, as shown at C, its outer end having means, such as a hook and eye shown at C^1 for securing a flexible cord D or the like, to which the captive ball E is secured at its lower end.

In large apparatus adapted for outdoor use, it is preferable to construct the tubular member and central shaft in two or more sections, for convenience in packing and transporting the apparatus and Fig. 2 shows the preferred method for joining the two or more sections of the central shaft together. The upper half A of the tubular standard has secured therein a short tube A^3, the end of which forms a spigot which fits into the lower half A^1 of the standard; c is a square shaft, which is provided with a ball bearing, fitting into the upper end of the tube A, and c^1 is a similar shaft connected to the lower ball bearing in tube A^1, the lower end of the shaft c^1 being provided with means for actuating the scoring device, which is indicated generally in Fig. 1 by letter F.

At the lower end of the upper square shaft c a sleeve coupling A^4 is disposed, having a square hole adapted to fit the shaft, and a central chamber through which the shaft protrudes, the said coupling being supported by the split pin c^2. The lower end of the sleeve has a bell-mouthed orifice to guide it on to the upper end of the lower transmission rod c^1, which actuates the scoring device. The sleeve A^4 is made a loose fit in the inner tube A^3, to permit its contacting by gravity with the lower shaft c^1.

In putting the two parts of the standard together, I have found it somewhat difficult to insure the squares of the upper and lower shafts c c^1 being in the right position to engage the coupling. By means of the above construction, this difficulty is overcome, and the sliding sleeve coupling A^4 rests by gravity on the lower shaft c^1 when the upper and lower members of the standard are placed in position, but as soon as the game is commenced, and the coupling A^4 rotated, it becomes engaged automatically with the lower by means of the said coupling falling by gravity as soon as the square hole therein comes into line with the square on the rod over which it is placed.

The scoring device is illustrated in Figs. 3, 4 and 5. In the form illustrated in these

figures, the shaft c^1 which operates it, is disposed centrally within it, but in some cases, it is preferable to arrange the indicator as shown at F in Fig. 1, and to drive it from the circumference. This can easily be done by means of a slight modification in construction, which will be described hereafter.

The device comprises a circular plate G, having numbered graduations thereon as shown. In the drawings, the winning score is shown to be 50, but it is obvious that any other suitable number may be used, without departing from the spirit of the invention. The plate G is centrally supported by a tubular extension g in one piece with the base plate H, which is provided with lugs H^1, or other suitable means, for securing the scoring device to the stand B. The central tubular part g receives the lower end of the standard A^1, which is securely fixed therein by any suitable means.

A circular plate J is centrally disposed within a recess in the plate G, said plate J having on its circumference a circular ring or ratchet of teeth j formed with open ends and arranged vertically as shown. The total number of these teeth should be greater than the total number of divisions of the dial, so as to allow for the space between the two zero marks, within which one of the driving pinions is located.

The plate J is operated by a train of gear wheels K, K^1, K^2, K^3, which latter are actuated by a single toothed projection c^2 on the central shaft c^1. The number of gear wheels interposed between the tooth c^2 and the plate J is such that the direction of rotation imparted to the plate will always be the same as that of the shaft c^1.

The movement of the plate J is transmitted by means of gravity pawls L, L^1 to the indicator arms M, M^1, which are loosely mounted on the axis of the scoring device, above the plate J. The two pawls L, L^1 are so arranged that each one operates in one direction only. As the captive ball E is driven around the central shaft, the latter is caused to rotate, and provided that the rotation is sufficient to cause the tooth c^2 to actuate the train of gearing K, K^1, K^2, K^3, the plate J will be caused to rotate, and according to the direction of its rotation, will move one or other of the arms M, M^1 in its forward direction, the other arm remaining stationary until it in turn is moved by a sufficient rotation of the central shaft in the reverse direction. In this manner, the state of the scores of both players is continuously and automatically indicated, and the game can proceed without interruption until one of the players has reached the winning score. When this occurs, an automatic device described below, comes into operation, whereby an audible signal of the completion of the game is given.

This automatic device is preferably constructed as follows:—

At the point indicating the winning score, which is shown by way of example as 50 on the graduated plate G, an opening N is provided. A cranked lever O is so disposed as to be able to have its nose C projected through this opening, the said lever being secured on a shaft P, which works in bearings p, p^1, secured on the under side of the circular plate G. The shaft P has reduced ends, which permit of a longitudinal movement of the shaft in its bearings. The lever O is provided with a suitably shaped nose O^1 at one end, which nose engages with a horizontal projection O^2 formed upon the plate G. The said nose normally rests upon this projection O^2, but when either of the pointers on reaching the winning score contact with it, it is pushed off its support by reason of the shaft being free to move longitudinally in its bearings p, p^1. The lever O falls by gravity into the position indicated by dotted lines in Fig. 3, and the hammer O^3 on the lever strikes the gong Q, and thus gives an audible signal of the conclusion of the game.

Instead of constructing the scoring device as shown in Figs. 3, 4 and 5, with the driving shaft c^1 centrally disposed, it may in some instances, particularly in the case of large apparatus for outdoor use, be preferable to construct it as indicated generally at F in Fig. 1. In this case the scoring device is mounted on a boss or the like, secured to the stand, and the single tooth on the central shaft c^1 is caused to drive directly on to the pinion K^3, the pinions K, K^1 and K^2 being in this case dispensed with.

The invention is not limited to the particular mechanical construction of the audible signaling device described and shown, or to the precise details of construction of the balance of the apparatus, as it is obvious that variations in this construction will readily occur to others, without departing from the spirit or scope of the invention.

The game played with the apparatus described has *inter alia* the following advantages: It can be played either indoors with a small apparatus, or out of doors with a larger one if desired, and the space required is much smaller than is usually required by other games of this nature. It is not necessary to stop to pick up any balls, and as the construction of the device is intended to eliminate the difficulty of the cord becoming coiled around the central standard, the game can be continuous when it has once been started. As the score is automatically recorded, there is no possibility of mistakes or disputes arising. By suitably disposing the pointers on the scoring device at the commencement of a game, handicaps can be arranged.

The game, when played out of doors, is usually played by two players standing at opposite sides of the central standard, within the boundary of a circular court. A diametrical line divides the court into two equal semicircles, and the object of each player is to make the ball revolve around and away from the central standard, using a racket for the purpose, in such a manner that it is difficult for his opponent to stop it and return it. Although the game is intended to be played by two or more players, yet considerable amusement and healthy exercise can easily be obtained by a single player, by using the device for the purposes of practice.

Having now set forth the objects and nature of my invention, and having shown and described a structure embodying the principles thereof, what I claim as new and useful and of my own invention and desire to secure by Letters Patent is,—

1. The combination with a revoluble shaft, of a ball suspended therefrom to afford means for imparting rotation to the shaft, an indicator device for indicating the number of rotations made by the shaft, and means for actuating said indicator device upon the rotation of said shaft.

2. The combination with a revoluble shaft, of a ball suspended therefrom to afford means for imparting rotation to the shaft, an indicator device for indicating the number of rotations made by the shaft, and means for actuating said indicator device upon each complete rotation of said shaft.

3. The combination with a revoluble shaft having a flexible extension, of a ball suspended therefrom to afford means for imparting rotation to the shaft, an indicator device for indicating the number of rotations made by the shaft, and means for actuating said indicator device upon each complete rotation of said shaft in one direction.

4. The combination with a revoluble shaft, of a ball suspended therefrom to afford means for imparting rotation to the shaft, an indicator device for indicating the number of rotations made by the shaft, and means for actuating said indicator device upon the rotation of said shaft in one direction, a second indicator device, and means for actuating the second indicator device upon the rotation of said shaft in the opposite direction.

5. The combination with a revoluble shaft, of a ball suspended therefrom to afford means for imparting rotation to the shaft, an indicator device for indicating the number of rotations made by the shaft, and means for actuating said indicator device upon each complete rotation of said shaft in one direction, a second indicator device, and means for actuating the second indicator device upon each complete rotation of the shaft in the opposite direction.

6. The combination with a standard, of a revoluble shaft supported by said standard, a ball flexibly suspended from the shaft to afford means for imparting rotation thereto, movable indicator arms, connections between said shaft and said arms, and means for actuating said connections to successively move said arms a predetermined distance for each complete rotation of said shaft in either direction.

7. The combination with a standard, of a revoluble shaft supported by said standard, a ball flexibly suspended from the shaft to afford means for imparting rotation thereto, a movable indicator arm, connections between said shaft and said arm, and means for actuating said connections to successively move said arm a predetermined distance for each complete rotation of said shaft in one direction, a second arm and connections between said shaft and said second arm, and means for moving said second arm said predetermined distance upon each complete revolution of the shaft in the opposite direction.

8. The combination with a revoluble shaft having a flexible extension, of a ball freely suspended therefrom to afford means for imparting rotation thereto, and means controlled by the shaft for automatically counting the number of rotations made thereby.

9. The combination with a revoluble shaft, of a ball freely suspended therefrom to afford means for imparting rotation thereto, and means controlled by the shaft for automatically counting the number of rotations made thereby in either direction.

10. The combination with a revoluble shaft, of a ball freely suspended therefrom to afford means for imparting rotation thereto, and means controlled by the shaft for automatically counting the number of rotations made thereby, a signal device, and means for actuating said signal device when said shaft has made a predetermined number of rotations.

11. The combination with a revoluble shaft, of a ball freely suspended therefrom to afford means for imparting rotation thereto, and means controlled by the shaft for automatically counting the number of rotations made thereby, a signal device, and means for actuating said signal device when said shaft has made a predetermined number of rotations in either direction.

12. The combination in a game apparatus, of a revoluble shaft having a flexible extension and a ball suspended therefrom, and an indicator device for indicating the movement of the shaft in either direction, and means for actuating said indicator device upon movement of said shaft.

13. The combination in a game apparatus, of a revoluble shaft having a flexible extension and a ball freely suspended therefrom for imparting rotation to said shaft, and means controlled by the shaft for automatically counting the number of rotations made thereby, a signal device, and means for actuating said device when the shaft has made a predetermined number of rotations.

In testimony whereof I affix my signature.

CHARLES MONTAGUE LINLEY.

Witnesses:
FRANK B. DEHN,
G. P. YOUNG.