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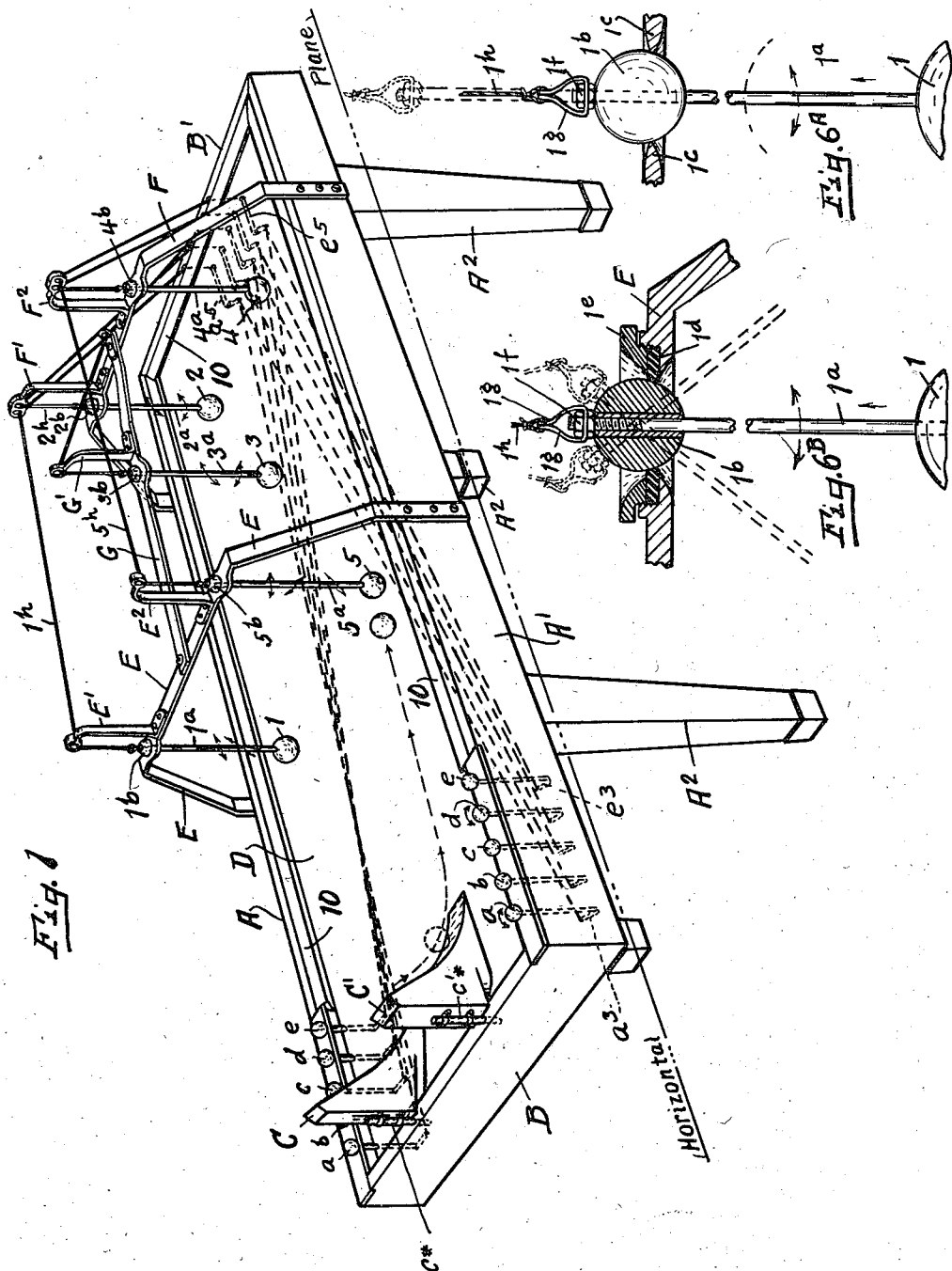
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2,018,833

GAME AND GAME APPARATUS

Filed Sept. 12, 1931

5 Sheets-Sheet 1



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2,018,833

GAME AND GAME APPARATUS

Filed Sept. 12, 1931

5 Sheets-Sheet 2

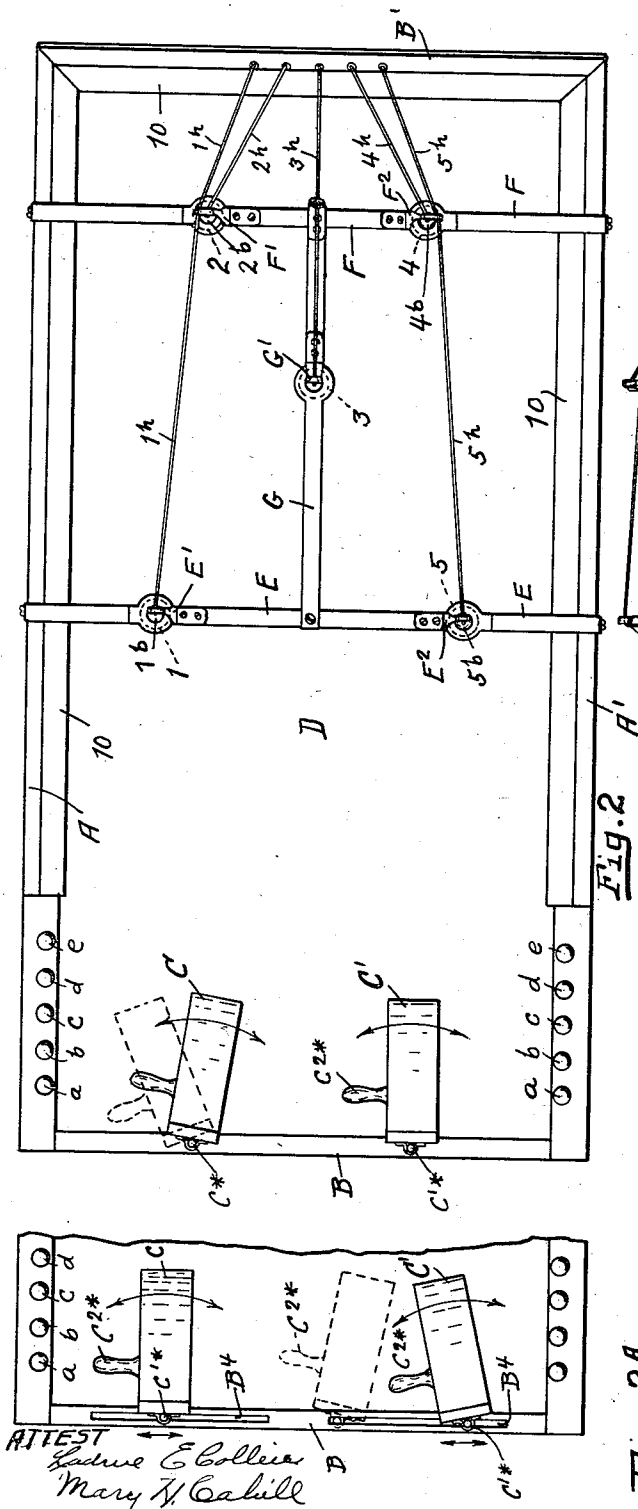
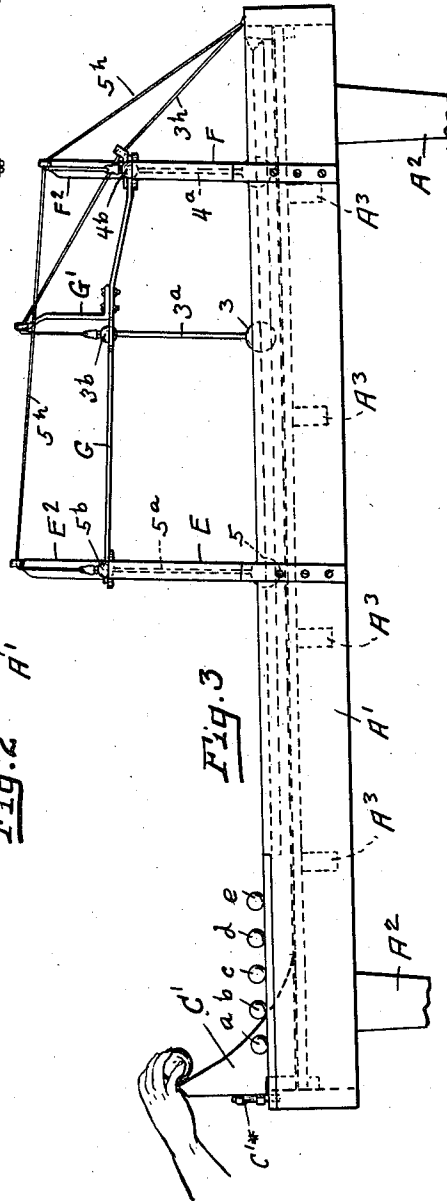


Fig. 2A



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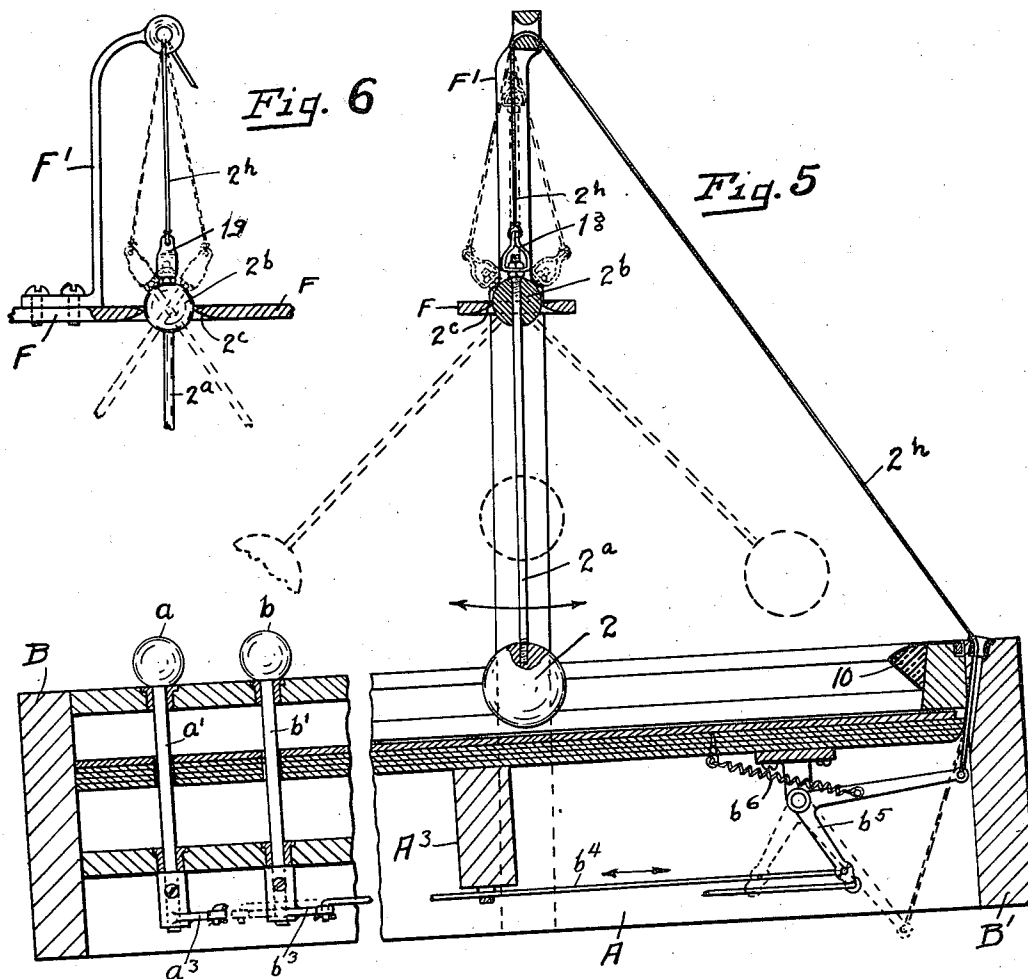
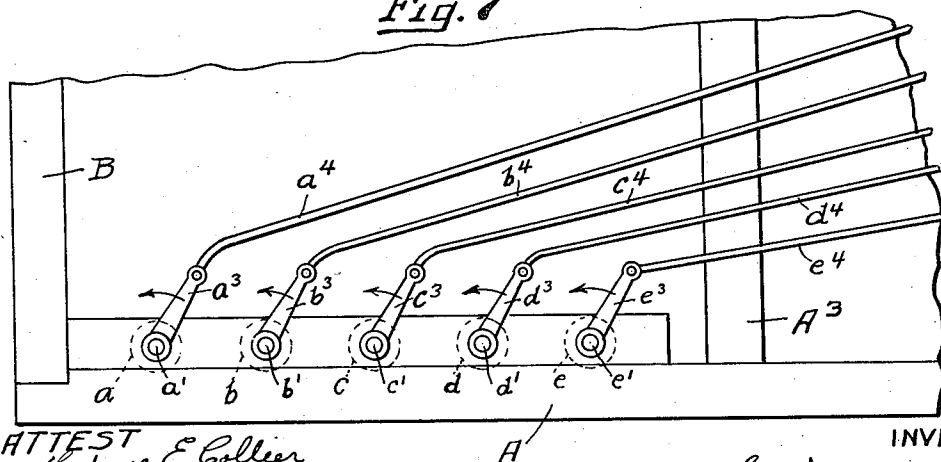


Fig. 7



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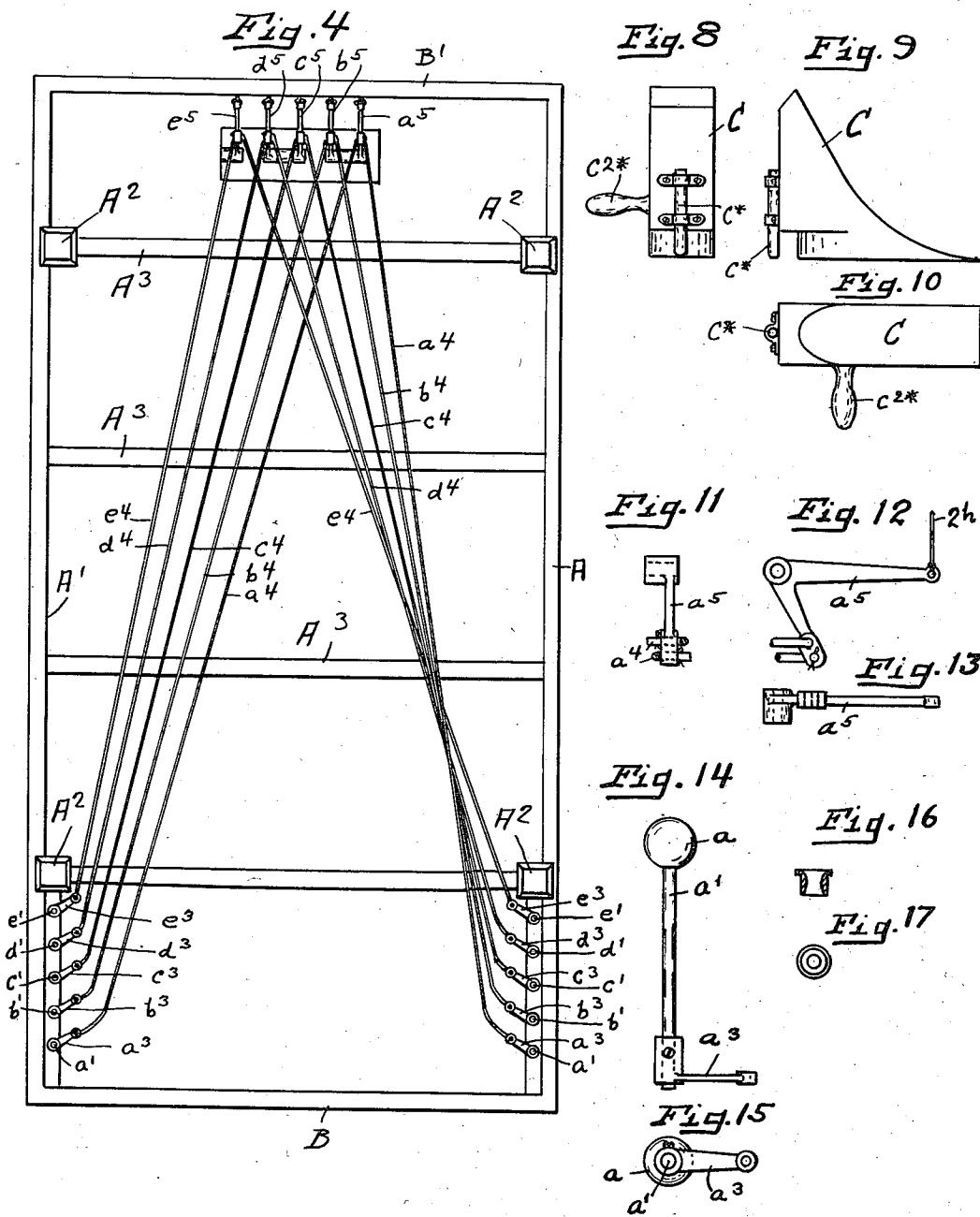
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2,018,833

GAME AND GAME APPARATUS

Filed Sept. 12, 1931

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ATTEST

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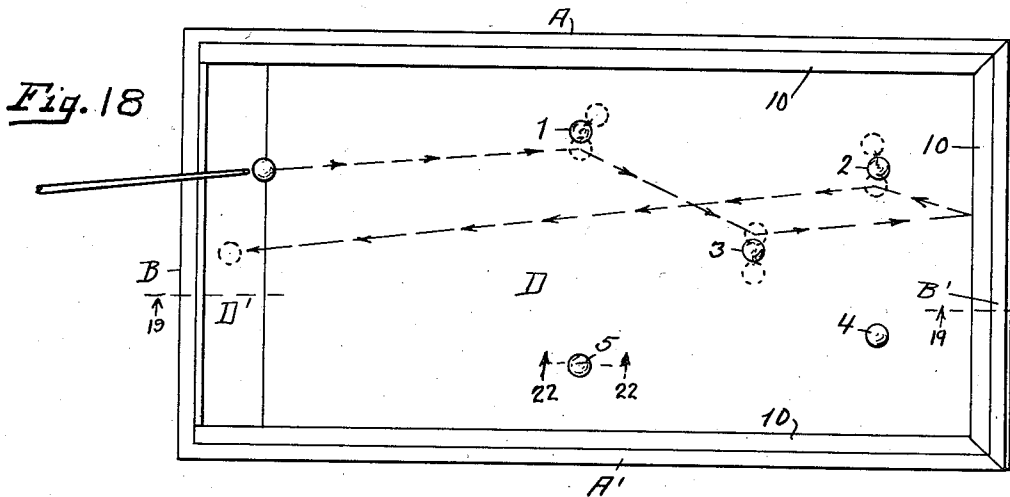
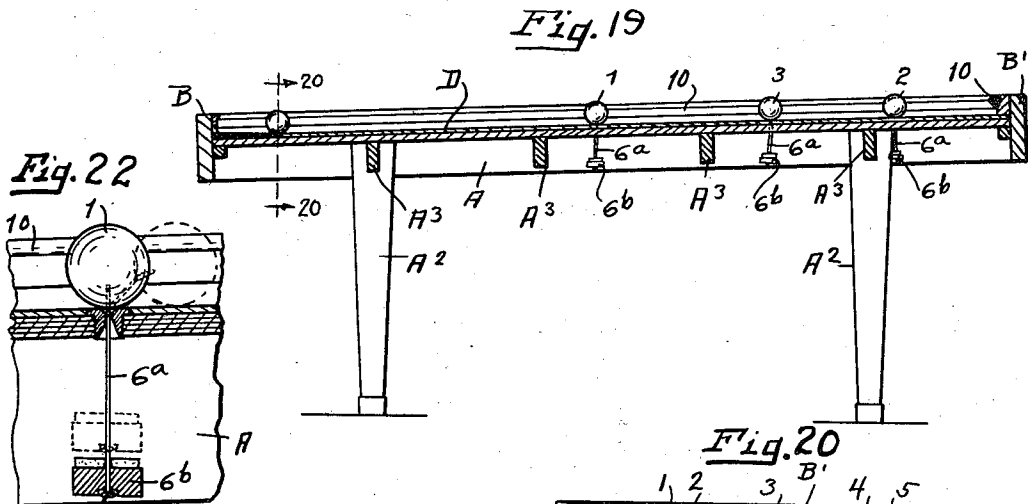
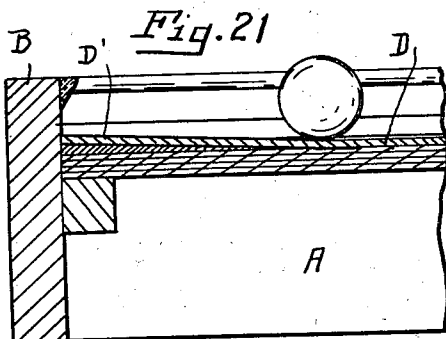
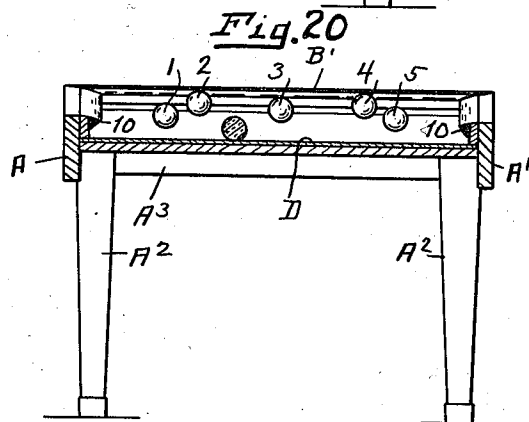
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GAME AND GAME APPARATUS

Filed Sept. 12, 1931

5 Sheets-Sheet 5



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UNITED STATES PATENT OFFICE

2,018,833

GAME AND GAME APPARATUS

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Application September 12, 1931, Serial No. 562,586

10 Claims. (Cl. 273—2)

In the well-known games of billiards and pool, or pocket billiards, large, highly-perfected and costly tables are used, and the balls are actuated by the players by means of long sticks, called cues. These tables, as before said, are large; and several times as much floor space as the table itself occupies is required to permit the player to walk all around the table and to play from any point he may desire around the table. Even in rooms where these tables are placed as near to each other as possible, each table, usually, five feet by ten feet (and occupying about fifty square feet) is thought to require a floor space of at least ten feet by fifteen feet, or one hundred and fifty square feet. But the space usually occupied by these tables is much more than this. Where a single table is used in a room, as in private residences, a five-foot by ten-foot table is supposed to need at least fifteen feet by twenty feet (three hundred square feet). And the tables must be very strong and solid, and great care exercised to keep their top surfaces so level that the balls will not roll sidewise when moving slowly, or settle into even very slight depressions. In consequence of the foregoing, good billiard and pool tables are, as above stated, expensive in themselves and in the floor space that they require.

The principal object of my invention is to produce a game or games, and apparatus therefor, which are rather closely related to the popular games of billiards and pool, but which require much less floor space, and for which a lighter, cheaper and less perfect table serves.

Another object of my invention will be understood from the following: to throw a ball, as one does upon a baseball field, requires only a natural movement of the human arm; to propel a ball, as one does upon a bowling alley, is also an entirely natural movement. But to roll a ball by the human hand upon an approximately horizontal table, is not an easy and natural movement. One does not have a feeling of definiteness and control when so rolling or impelling a ball upon a table. Therefore, in the games of billiards and pool, the player's ball is usually impelled by a long stick called a cue. An object of my invention, then, is to provide a game apparatus which permits the human hand to throw the ball with a downward, natural movement, and also to furnish means which converts that downward movement of the ball into a movement along the surface of the table, and to construct that apparatus in such a way that the player may aim his ball toward substantially any part of the table he may desire.

Another object of my invention is to produce a game or games, and apparatus therefor, in which a player, playing with balls, instead of having the next play definitely prescribed for him, may choose one or another of a large variety of plays, said plays varying greatly in difficulty and complexity.

Another object of my invention is to make a game or games, and apparatus therefor, in or by means of which a player can win a larger score or credit for achieving a difficult and complex play, than for a simple play, with a close relation between the difficulty of the play and the amount of the increase in his score.

Another object of my invention is to speed up the playing of a game, played with target balls, by retarding or reducing the pendulum-like swing of the target balls.

Another object of my invention is to provide a game apparatus on which the players are enabled to impel their balls either by hand or by means of a cue, as desired, with little or no alteration of the playing apparatus.

In the accompanying drawings—

Fig. 1 is a perspective view of one embodiment of my improved game apparatus;

Fig. 2 is a plan or top view of the table and apparatus shown in Fig. 1;

Fig. 2A is a plan view of the players' end of my table, but modified and differing in this particular from Fig. 2, in that the slots B⁴, B⁴, formed in the frame-work at the players' end of the table, permit the pivots c¹* and the chutes C and C¹ to be moved laterally;

Fig. 3 is an elevation, a side view of the table and apparatus shown in Figs. 1 and 2. In this view, a hand is shown resting upon the top of the chute, preparatory to the projecting of the ball downward along the chute C¹;

Fig. 4 is an inverted plan view of my playing table, and the apparatus below said table, illustrating one type of connection from the ball-lifting-and-lowering apparatus at the front of the table, to the bell-crank levers at the back of the table;

Fig. 5, and the details Figs. 6, 6A, 7, and 11 to 15, inclusive, illustrate one embodiment of my target-ball raising-and-lowering apparatus and parts thereof;

Fig. 6B is a detail, illustrating another form of my apparatus for mounting the target balls;

Figs. 8, 9, and 10 are detail views of one construction of my chute or means for transforming the downward movement of a thrown ball into an approximately horizontal movement; of these,

Fig. 8 is a front elevation or view from the players' end of the table; Fig. 9 is a side elevation, and Fig. 10 is an inverted plan view;

Fig. 11 is a front elevation; Fig. 12 is a side elevation; and Fig. 13 is an inverted plan view of one of the bell-crank levers at the rear of the table, which cooperate in the raising and lowering of the target balls, marked 1, 2, 3, 4, and 5;

Fig. 14 is a side elevation, and Fig. 15 is an inverted plan view of one of the knobs, *a*, *b*, *c*, etcetera, its shaft, *a'*, *b'*, *c'*, etcetera, and the lower arm *a*³, *b*³, *c*³, etcetera, attached thereto, which serve, at the front of the table, in the lifting or lowering of the target balls;

Fig. 16 is a detail, sectional elevation, of one of the bushings or eyelets at the back end of the table, through which the strings or pull-pieces *a*⁴, *b*⁴, *c*⁴, etcetera, which serve to raise and lower the target balls, pass;

Fig. 17 is an inverted plan view of the bushing shown in Fig. 16;

Figs. 18 to 22 are views illustrating another construction of my table, formed in such a manner that the player's ball may be impelled by a cue or stick if desired, instead of being delivered onto the table by the human hand, with the aid of the chute (C or C¹) as shown in Figs. 1, 2, 2A, 3, 8, 9, and 10. Figs. 18 to 22 also show a way of mounting the target balls by means of connections below the table, instead of by suspending them from above the table, as shown in previous figures, although, of course, the form of construction shown in the previous figures may also be used with the construction shown at the left-hand end of these figures, to permit the using of a cue. Of Figs. 18 to 22—

Fig. 18 is a top plan view of my table, with playing balls and target balls thereon, and a cue for giving movement to the playing balls;

Fig. 19 is a sectional view in elevation, lengthwise through my table, shown in plan in Fig. 18. In this figure, it will be noticed that the table to the right of the line 20, 20, is inclined slightly upward, so that the playing balls, when they reach the remote end of the table, will return by gravitation toward the players' end. But from the line 20, 20, to the left-hand end or players' end of the table, the inclination of the table is the reverse to that on the right-hand side of the line 20, 20. Or the level of the table to the left of the line 20, 20, in Fig. 19, may be horizontal, or nearly so. (See also Fig. 21.)

Fig. 20 is a cross section through the table of Figs. 18 and 19, on the line 20, 20 of Fig. 19;

Fig. 21 is a detail, sectional view showing the left-hand or players' end of the table, and illustrating one way of raising that end of the playing surface slightly. This view is on a larger scale than that of Fig. 19;

Fig. 22 is a detail, a sectional view, illustrating one means of mounting the target balls by means of connections below the table, instead of suspending them from above the table, as shown in Figs. 1 to 3, and 5 to 6B.

In the accompanying drawings, similar parts are indicated by similar reference characters. In Fig. 1 are seen the chutes C and C¹ for translating the downward movement of the ball, after it has left the hand of the player, into movement along the surface of the table; the ball, in its movement down the chute, and also the path of the ball being indicated by dotted lines. Also, there are seen pendant target balls, 1, 2, 3, 4, and 5, for the player to shoot at; ball-reflecting cushions 10, 10, extending, preferably, most of the length of the

two long sides of the table and across the end of the table that is remote from the players; means supported above the table by which said target balls are suspended over the table; means by which their swing or pendulum-like motion, after they have been struck, is reduced or slowed down. Also, part of the apparatus for raising and lowering the target balls, is indicated, partly diagrammatically, in dotted lines. And the fact that the rear end of the table is lifted somewhat above the front or players' end of the table, is indicated diagrammatically by the relation shown in Fig. 1 between the lower line of my table and the line below it, marked "Horizontal plane".

A and A' are the two side pieces of the main frame of my table; B is the end piece of the main frame at the players' end of the table, and B' the end piece at the far end of the table. I have made these of wood, one and three-quarters inches thick, and seven and three-quarters inches wide; but they may be of any suitable material and of any suitable size. The legs, A², A², and also the cross framing, A³, A³ (Figs. 3, 4, and 19) may be of any suitable material and construction, although I have generally used wood.

The table-top, which serves as a playing surface, may be made of slate and cloth, as in billiard and pool tables, or of any other suitable substances, but I am at present using a comparatively inexpensive wooden table, on top of which I lay a sheet of a hard, smooth composition, called "Presdwood", manufactured by the Masonite Corporation, of Chicago, Ill. This covering, as far as my experience has extended, has behaved well, so far as are concerned changes in the material, due to changes in the moisture of the atmosphere. Also, the ball acquires less of a rotational movement as it travels over this relatively smooth and hard surface than it would do in traveling over a surface of cloth, such as is often used in covering billiard tables; and the dense surface of the Presdwood makes it easier to dust it and to clean it.

To save the great amount of space which is needed, if the players are to play from any and every position around the table; to make it possible for the players to play wholly from one end of the table; to remove the necessity of their even walking around the table at all; and to make it possible for a much cheaper, less solid and less perfect table to serve for a highly scientific game, I preferably tilt the playing surface of my table down toward the players' end, as shown in Figs. 1, 3, and 19, so that the players' ball will automatically return to the players' end of the table, whether its natural course would return it there or not. The amount of tilt given to the table may be varied, of course. Experience has shown that each different angle affects the play in a different manner. In practice, I have found a difference of four inches between the back end of an eight-foot table and its front end, or about two and one half degrees (2½°) very satisfactory.

C and C' illustrate one construction of my chutes, for transforming the downward movement of the ball into an approximately horizontal movement. I have made these chutes of hard wood, and of heights varying from twelve inches to eighteen inches above the table, and with the straight, upright part of the chute, with which the ball first comes into contact, cut at an angle of sixty degrees to the table; but the chutes may be made of any suitable material, and of any suitable size and contour. I preferably pivot the chutes at the back or players' end, much as indi-

cated in the drawings, with the ends of the pivot pins or rods c^* and c'^* , setting into holes in the end piece B. Such a construction permits the chute to be directed at any target ball at which the player may wish to aim, or at practically any part of any cushion. Preferably, I put a handle, c^{2*} , on the side of the chute, by which the player may the more conveniently turn the chute and steady it, while delivering his ball.

In the drawings, Figs. 1, 2, and 3, the chutes are shown as pivoted in fixed positions. However, I sometimes make my chutes movable crosswise of the table, to permit a player to select for himself the position from which he desires to deliver his ball. One construction which I have contrived for this purpose is to cut slots, B^4 , B^4 , in the top of the end piece B, into which the pivots c^* and c'^* of the chutes, set; see Fig. 2A. And I have constructed this so that a chute's movement sidewise is limited to one half of the table; but by lengthening the slot B^4 , the chute may be moved practically all the way across the end of the table. After considerable experience, I am inclined to believe that fixed positions for the chutes, as indicated, for example, in Figs. 1, 2, and 3, are, on the whole, better than to provide sidewise movement for the chutes, as in Fig. 2A.

From the supports or cross-bars E and F, and from the tie-bar G (Figs. 1, 2, and 3) I suspend five target balls, 1, 2, 3, 4, and 5, although, of course, a larger or smaller number of target balls may be supplied. Preferably, I suspend such balls on steel rods or wires, 1^a , 2^a , etcetera, which, in turn, pass through holes in smaller balls, 1^b , 2^b , etcetera, so set in rings or supports, 1^c , 2^c , etcetera (see Figs. 6, 6A, and 6B) in the frames E and F, and tie-bar G, that the oscillations of the balls 1, 2, etcetera, will cause the smaller balls or mounting balls, 1^b , 2^b , etcetera, to move back and forth, more or less, in their rings or supports, 1^c , 2^c , etcetera. The weight of the target ball 1, its rod 1^a , and its upper small ball or mounting-ball 1^b , are, therefore, all carried in or upon the ring 1^c (Fig. 6A) into which the ball 1^b sets. And the resultant friction of the small ball 1^b in its ring 1^c serves to retard or slow down the movement of the ball 1, and soon to bring it to a position of rest. And similarly with the other balls, 2, 3, 4, etcetera.

In Fig. 6B, the mounting ball 1^b is set in a leather, fibre or other suitable ring or disc 1^d , held in place by the part E and by the cup-shaped ring 1^e . When preferred, such a construction may be used to increase the friction of the ball 1^b , or to obtain a supporting-and-friction surface different from that of the supporting member E, F or G.

The target balls 1, 2, 3, etcetera, may, of course, be held in place by any other suitable and convenient mechanism or in any other suitable and convenient manner, although I prefer the construction shown to any other that I have yet used. I have, however, positioned the target balls in a simpler and less expensive manner, as illustrated in Fig. 19, and in the detail view, Fig. 22. In such a construction, the target ball (1, 2, 3, etcetera) lies upon the table instead of being suspended just above it, and a cord or tether, 6^a , passes through a hole in the table to a weight or spring 6^b underneath the table. Such a construction permits the target ball to be driven out of place in any direction when hit, after which the spring or weight 6^b returns the target ball to its normal position upon the table.

In order that one or more of the suspended target balls, 1, 2, 3, etcetera, may be raised from their positions just above the table, when the said ball or balls appears to be in the path of the player's ball as he shoots at something beyond that particular target ball or balls, or lowered toward the table, when the player, or his opponent, desires to shoot at certain definite balls, which are less than the whole number upon the table, I, preferably, arrange at the right-hand side of the front, or players' end of the table (Fig. 1) knobs a , b , c , d , and e . From those knobs, down through the side bars A and A', of the table (see Figs. 1, 2, 4, 5, 7, 14, and 15) extend shafts or rods, a' , b' , etcetera, which carry arms a^3 , b^3 , etcetera, at their lower extremities, which arms extend in toward the center of the table, crosswise of the table. From such arms, push-and-pull rods a^4 , b^4 , etcetera, extend back to the rear end of the table, where they connect with bell-crank levers a^5 , b^5 , c^5 , etcetera (Figs. 5, 1, 4, 7, 12, 11, and 13). From the similar set of arms on the lower ends of the shafts attached to the balls on the opposite side of the table (Figs. 1, 4, etcetera) other push-and-pull rods (a^4 , b^4 , c^4 , d^4 , e^4) connect also to said rock-shafts a^5 , b^5 , c^5 , etcetera, at the back of the table, so that any rock shaft a^5 , b^5 , c^5 , etcetera, at the back of the table may be operated by its corresponding knob, a , b , c , etcetera, on either side of the table.

Upon the supports or cross-bars E and F, and upon the tie-bar G, are screwed or bolted in any suitable manner, davit-like arms E' and E², F' and F² and G'; see Figs. 1, 2, 3, 5, and 6, particularly 1, 5, and 6. Through the upper ends of said davit-like arms, E', E² and G', are drilled one hole each, and through the ends of the davit-like arms F' and F² are drilled two holes each, which are preferably rounded inside, as seen in Fig. 5 (at the top of the figure) and polished or burnished, so as to be smooth and have a low coefficient of friction. To the top of the rods 1^a , 2^a , 3^a , etcetera, which support the target balls, 1, 2, 3, etcetera, is attached, by lock nuts 1^f , 2^f , etcetera, a loop or eyelet 1^g , 1^g , etcetera; see particularly Figs. 5, 6, 6A, and 6B. A cord 1^h , which passes through the holes in the top of the arms E' and F', and through one of the holes in the back bar B', connects the loop 1^f , at the upper end of the rod 1^a , which supports the ball 1, with the horizontal arm of the bell-crank a^5 . When, therefore, the ball or knob a , at the player's end of the table, is rotated somewhat by the hand of the player, its arm a^3 , below the table, through the corresponding push-and-pull piece a^4 , pulls forward the lower arm of the rock-shaft a^5 , and so pulls down the horizontal arm of said rock shaft, pulling down with it the end of the cord 1^h , which in turn pulls up the shaft 1^a and target ball 1, from its position in close proximity to the table. Should the target ball be hanging in the raised position, an opposite twist or turning of the knob, a , will lower the ball from its elevated position to a position very close to the surface of the table. Movement of the knobs b , c , d or e , similarly actuate their corresponding balls. The spring b^6 (Fig. 5) tends to hold the bell-crank lever b^5 , either in its upper position or its lower position, when once it is moved into either position.

When playing upon my improved apparatus, a player may shoot at one or other of the target balls (1, 2, 3, 4, 5) or he may hit a cushion, 10, before he hits a ball, or he may hit a ball a glance

ing blow, in such a way that his ball will pass from the first ball and hit a second ball, and even then continue on and hit still a third ball. Or he may give his ball a glancing blow against a target ball, from which it is reflected against a cushion, which throws it back to still a second ball. Or he may hit two or three cushions before he hits any ball. While a number of different games may be played upon my new game apparatus, it is especially constructed and adapted to permit a larger score, as more balls or more balls and cushions are hit, on the way to the final target ball, thus permitting a skillful player to undertake complex and cumulative plays, carrying large scoring credits, while a beginner makes simpler plays, carrying smaller scoring credits.

In one game which has been played upon my improved game apparatus, the players have been allowed to shoot at any target balls they chose, scoring one for the first ball hit, two more if the player's ball was caused to hit the first target ball with a glancing blow, and then to hit a second target ball; and scoring three more should the ball continue and hit a third ball. Also, one was added to the score for each cushion hit on the way to the final target ball hit by the player's ball. Thus, a beginner could shoot at the nearest and easiest-to-hit target ball, making a score of one by hitting that ball, and taking but small chances. As he acquired a little skill, he frequently hit a cushion on the way to the target ball, so scoring two points. If he hit a target ball and then glanced off to a second target ball, he scored three points. Should he hit a cushion either before he hit the first target ball, or between the first and second target balls, he would score four for the two target balls and one cushion. Meanwhile, a more experienced player tried for more difficult combinations, which would allow larger scores, although he took greater risk of failure by so doing.

In still another game played on my improved game apparatus, the player is required to hit the #1 target ball in his first shot; the #2 target ball in his second shot; the #3 target ball in his third shot, etcetera, etcetera, but is allowed to make any combination of other balls or cushions with the particular target ball which he must include in any shot.

In still another and more difficult type of game played upon my improved game apparatus, the player designates his final target ball and gets credit for all the balls or cushions he hits on the way to that final target ball, but no credit if he misses the final target ball.

In still another type of game played on my improved game apparatus, the target balls are normally held above the table, and the player lets down into close proximity to the table, the ball or combination of balls that he intends to hit. He scores only if he hits the ball or balls he has let down, the size of his score accumulating as in the other games.

Other games also have been played upon my improved game apparatus, but the above illustrations are probably sufficient.

When making any shot, the player is free to lift out of the path of his target ball, any ball or balls he chooses.

What I claim as my invention and desire to secure by Letters Patent is—

1. A target device, for use in a game apparatus, which includes (a) a target; (b) means for suspending, pendulum-like, said target, preferably just above the playing surface and for permit-

ting it to be displaced when struck; and (c) means for slowing down by the combined action of gravity and centrifugal force the pendulum-like movement of said target after it has been struck.

2. A target device, for use in a game apparatus, which includes (a) a target; (b) means for supporting said target and for permitting it to be displaced when struck; (c) a relatively-stiff connection between said target and said means for supporting said target, for suspending, pendulum-like, said target, preferably just above the playing surface; and (d) means for slowing down by the combined action of gravity and centrifugal force the pendulum-like movement of said target after it has been struck.

3. A target device, for use in a game apparatus, which includes (a) a target; (b) means for supporting said target and for permitting it to be displaced when struck; (c) a relatively-stiff connection between said target and said means for supporting said target, for suspending, pendulum-like, said target, preferably just above the playing surface; and (d) frictional means for slowing down the pendulum-like movement of said target after it has been struck.

4. A target device, for use in a game apparatus, which includes (a) a target ball; (b) means for supporting said target ball and for permitting it to be displaced when struck; (c) a relatively-stiff connection between said target ball and said means for supporting said target ball for suspending, pendulum-like, said target ball just above the playing surface; and (d) means for slowing down by the combined action of gravity and centrifugal force the pendulum-like movement of said target ball after it has been struck.

5. A target device, for use in a game apparatus, which includes (a) a target ball; (b) means for supporting said target ball and for permitting it to be displaced when struck; (c) a relatively-stiff connection between said target ball and said means for supporting said target ball for suspending, pendulum-like, said target ball just above the playing surface; and (d) frictional means for slowing down the pendulum-like movement of said target ball after it has been struck.

6. A target device, for use in a game apparatus, which includes (a) a target; (b) a primary means for supporting said target; (c) a secondary means for supporting said target; and (d) a relatively-stiff connection between said target and said secondary means aforesaid, for suspending, pendulum-like, said target, preferably just above the playing surface; said secondary supporting means co-acting with said primary supporting means to permit said target to be displaced when struck and thereafter to slow down by the combined action of gravity and centrifugal force the pendulum-like movement of said target.

7. A target device for use in a game apparatus, which includes (a) a target; (b) a primary means for supporting said target; (c) a secondary means for supporting said target; and (d) a relatively-stiff connection between said target and said secondary means aforesaid, for suspending, pendulum-like, said target, preferably just above the playing surface; said secondary supporting means co-acting frictionally with said primary supporting means to permit said target to be displaced when struck and thereafter to slow down the pendulum-like movement of said target.

8. A target device, for use in a game appa-

5 ratus, which includes (a) a target; (b) a primary means, with a circular opening therein, for supporting said target; (c) a secondary means for supporting said target, adapted to fit into the opening of the primary means for supporting said target aforesaid; and (d) a relatively-stiff connection between said target and said secondary means aforesaid, for suspending, pendulum-like, said target, preferably just above the playing surface; said secondary supporting means co-acting frictionally with said primary supporting means to permit said target to be displaced when struck and thereafter to slow down the pendulum-like movement of said target.

10 9. A target device, for use in a game apparatus, which includes (a) a target; (b) a primary means, with a circular opening therein, for supporting said target; (c) a secondary means for supporting said target, adapted to fit into the opening of the primary means for supporting said target aforesaid; (d) a resilient frictional element between said primary means and said secondary means for supporting said target aforesaid; and (e) a relatively-stiff connection

between said target and said secondary means aforesaid, for suspending, pendulum-like, said target, preferably just above the playing surface; said secondary supporting means co-acting with said resilient frictional element, to permit said target to be displaced when struck and thereafter to slow down the pendulum-like movement of said target. 5

10 10. A target device, for use in a game apparatus, which includes (a) a target; (b) a primary means, with a circular opening therein, for supporting said target; (c) a secondary means for supporting said target, of spherical shape where it contacts with the primary means aforesaid for supporting said target; and (d) a relatively-stiff connection between said target and said secondary means aforesaid, for suspending, pendulum-like, said target, preferably just above the playing surface; said secondary supporting means co-acting frictionally with said primary supporting means to permit said target to be displaced when struck and thereafter to slow down the pendulum-like movement of said target. 15 20

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