

Feb. 1, 1949.

C. H. SHIREY
ARTILLERY WAR GAME

2,460,770

Filed April 7, 1948

3 Sheets-Sheet 1

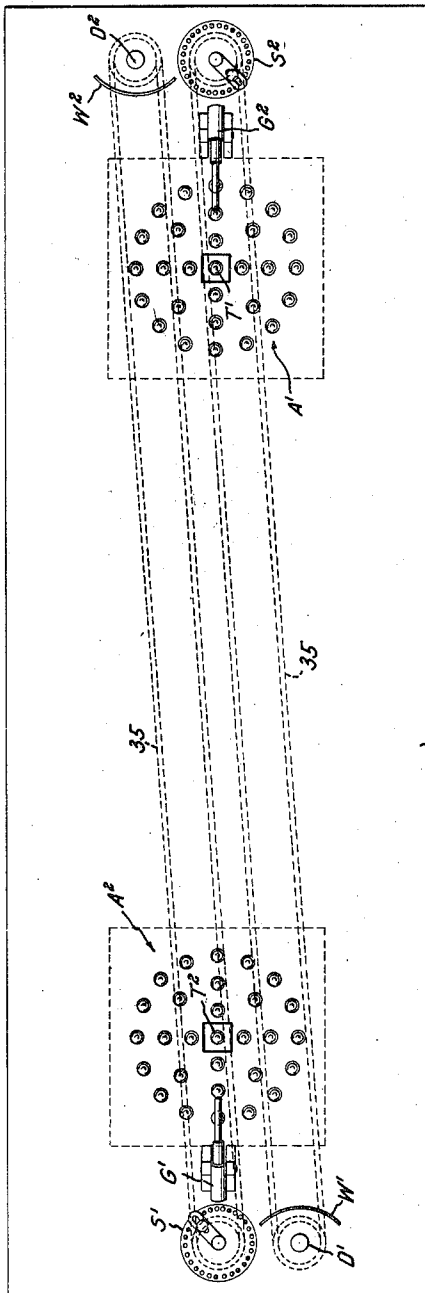


Fig. 1.

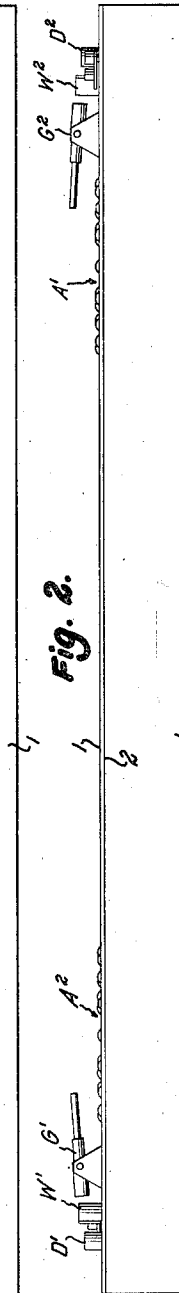


Fig. 2.

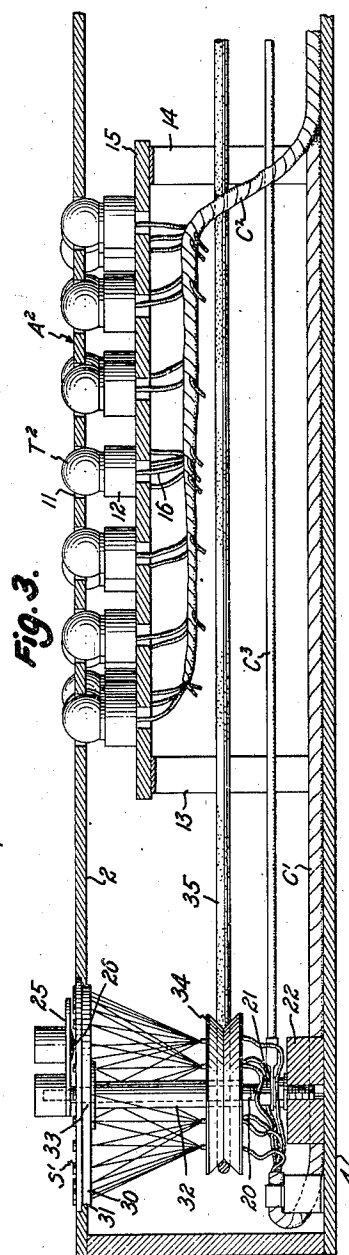


Fig. 3.

Inventor
Charles Harold Shirey

By *Ralph E. Parker*

his Attorney

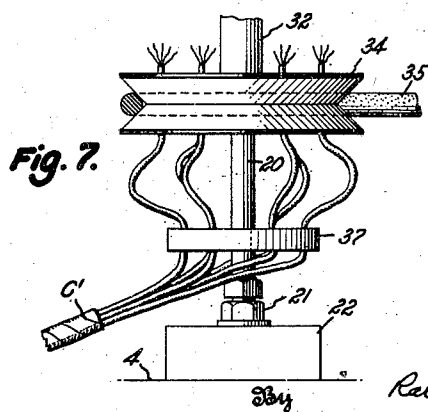
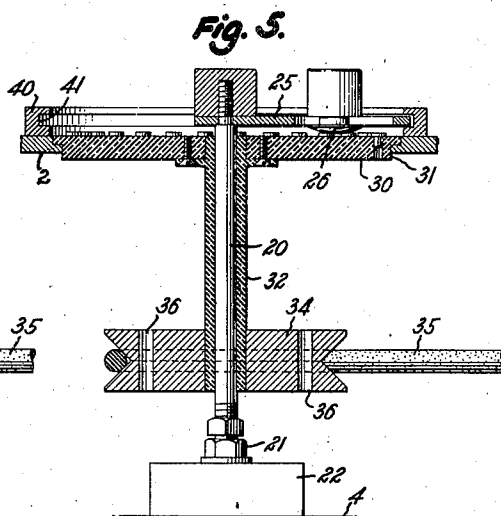
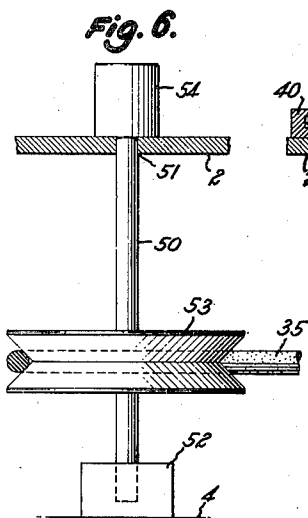
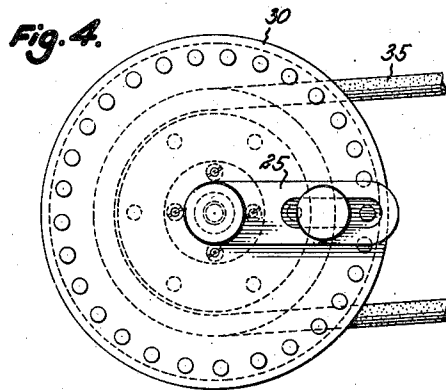
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Inventor
Charles Harold Shirey

Ralph E. Parker

his Attorney

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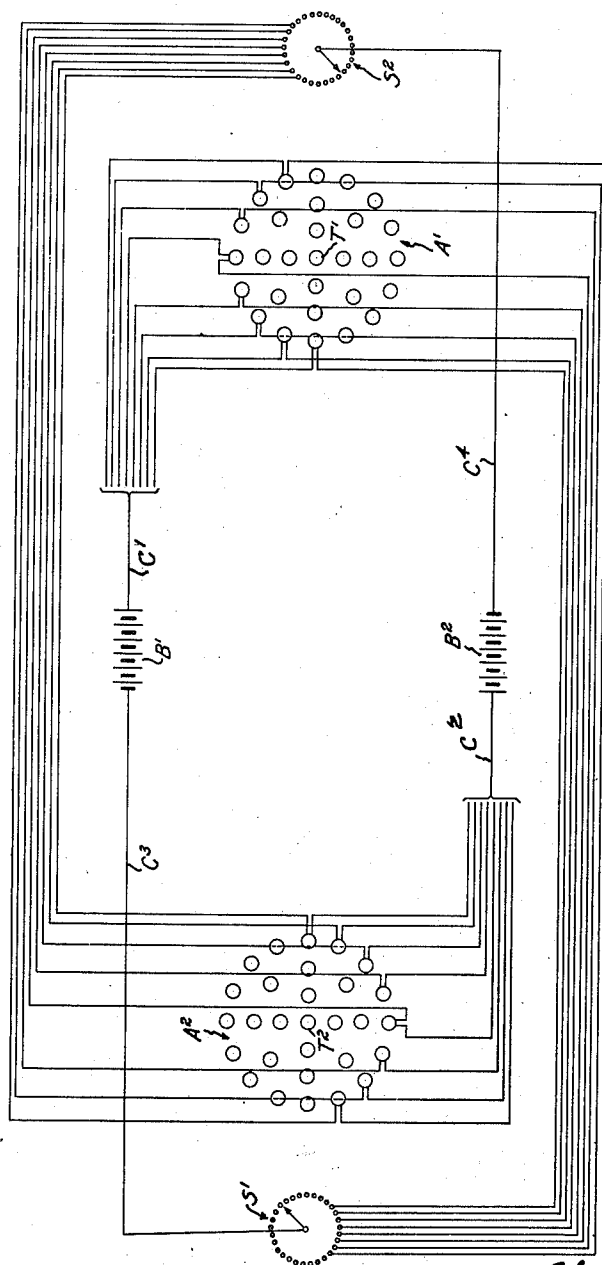
C. H. SHIREY
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Fig. 8.



Inventor

Charles Harold Shirey

By

Ralph E. Parker

Attorney

UNITED STATES PATENT OFFICE

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ARTILLERY WAR GAME

Charles Harold Shirey, Bridgeville, Pa.

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7 Claims. (Cl. 273—101.2)

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The present invention relates to a game board, and is more particularly concerned with an electrically operated and controlled amusement apparatus simulating, in use, a gunnery duel or battle between two (or more) opposing contestants or forces—specifically, an artillery duel or battle.

An object of the invention is the provision of an electrically operated and controlled game board, of the type described, permitting each of two (or more) contestants to operate electrical apparatus simulating the training of a gun, or similar missile-thrower, on a target and the discharging of a missile therefrom, and to operate auxiliary apparatus whose function is, in effect, to spoil the aim of an opposing contestant. Another inventive object is the provision of an artillery war game in which each particular contestant's gun-aiming mechanism is manually controllable by that contestant and simultaneously is unpredictably controllable by an opposing contestant. Additional objects of the invention will be apparent from a consideration of the ensuing description and of the appended claims.

The game board of the present invention includes a playing surface, which playing surface may be and preferably is carried on a panel covering a flat, box-like, cabinet; preferably the panel is oblong and affords playing space for two contestants. A target area is delineated adjacent each of the ends of the playing surface, there being in each such target area at least one and preferably a plurality of "targets," each of which latter is an individually energizable element such, for instance, as a small electric light bulb. Where electric light bulbs are employed, the "targets" may be portions of the bulbs protruding through openings provided in the playing surface or otherwise so disposed as to be visible from above said playing surface when energized.

Adjacent each such target area there is or may be mounted a model of a missile thrower, e. g., an artillery field piece (say a howitzer), simulating a defensive means for the adjacent target area and hence adding realism to the game. Said model may, if desired, be so constructed as to emit a report at the instant of a play.

Also adjacent each end of the playing surface, and preferably in a space between the target area and the near end of the playing surface, there is positioned a rotary switch means provided with a switch arm and carrying at least as many contact points as there are energizable

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elements in the opposed target area and adapted, in combination with other elements hereinafter to be described, to energize particular elements in the opposed target area.

5 The "targets" may have particular game values associated therewith, which values may vary from a highest value for, say, a central target, through intermediate values for closely related targets, to a lowest value, or a minus value, for the peripheral targets of the group.

10 So much of the device as has already been described permits each player, in succession, to "fire" one or more "missiles" at his opponent's target area and upon definite targets therein, by operating his switch. Normally, a player could acquire, through experience, the knowledge as to which contact point on his switch operates any particular energizable element in his opponent's target area. However, the device also includes, for each player, manually operable means for spoiling the aim of his opponent by disturbing, to an unpredictable extent, the normal relation between the contact points and the switch arm of his opponent's switch means independently of movement of the switch arm of the latter.

Such aim-disturbing means will now be described in connection with a more detailed description of the rotary switch and associated elements.

20 The rotary switch assembly includes a generally disc-like contacts-carrying member rotatable with respect to the playing surface, a switch arm swingable over the contacts of the contacts-carrying member and separately engageable with said contacts at will, means for imparting relative rotary movement to said switch arm by one player, and means for imparting relative rotary movement to said contacts-carrying member by the opposed player. Thus, each rotary switch assembly includes means for imparting relatively rotary movement to said contacts-carrying member and to said switch arm by the opposed players, respectively.

25 The rotatable contacts-carrying member preferably is a disc provided with a central opening and carrying the plurality of contact points adjacent its periphery, which disc is positioned substantially parallel to the playing surface and may be and preferably is in the plane of the latter. The switch arm preferably is mounted, at one end thereof, on one end of a rotatable shaft, which latter is positioned in a plane normal to that of the switch disc and has an end extending through said central opening of the contacts-

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carrying member. The switch arm is slotted radially with respect to its center of rotation and a contact member carried by the arm is displaceable longitudinally of the slot to bring it into and out of engagement with any desired one of a circular array of cooperating stationary contacts on the switch disc. Preferably, said rotatable shaft is supported, at the end thereof remote from said switch arm, by a rotatable bearing member adapted to hold said shaft rotatable in a predetermined plane. A sleeve member surrounds a portion of said shaft intermediate the ends of the latter and is adapted to be moved relative with respect to said shaft. Said sleeve is fixed at one end thereof to said rotatable contacts-carrying member.

Each of the electric light bulbs in one target area is connected, through the opposed rotary switch means, by suitable conductors with a source of electric current.

Adjacent each rotary switch is that player's means for disturbing the aim of his opponent. Said aim-disturbing means preferably includes a mechanism operatively connected to the rotatable contacts-carrying member of the opponent's rotary switch, which mechanism is concealed within the box of the device but is manually actuable from without the latter, at a point remote from the opponent's rotary switch, and preferably shielded from the view of the opponent.

While said aim-disturbing means may comprise a link-and-lever mechanism, or chain and sprocket means, or other appropriate operative connections to alter the effective selected relation of the contacts-carrying member with respect to the switch arm of the opponent's rotary switch means, said aim-disturbing means preferably includes a shaft positioned generally within the box but having one end thereof extending through an opening in the playing surface, a pulley fixedly mounted on said shaft adjacent the end thereof remote from the playing surface, a pulley fixedly mounted adjacent the lower end of the sleeve member of the opposed rotary switch means, and a suitable belt, band or the like trained over the two pulleys and effective for imparting movement of said shaft to said sleeve member. To the exposed, upper, end of said shaft there preferably is attached a thumb button, turning knob or the like for use in imparting rotary movement to said shaft, which knob is or may be shielded from the opposing player's view by a suitable shielding means upstanding from the playing surface. The shaft is rotatably supported, at the end thereof remote from the playing surface, on or by a suitable bearing.

By appropriately turning the knob of his "aim-disturbing" means, a player may, at will, change the relative position of the contacts-carrying member of his opponent's rotary switch to an extent not readily ascertainable by the opponent and hence tend to negate the possibility that the opponent may, by experience, associate a particular contact point on the latter's rotary switch with any particular energizable element in the player's target area.

The invention will now be described in greater detail, with reference to the accompanying drawing, in which:

Fig. 1 is a plan view of a game device embodying features of the present invention;

Fig. 2 is an elevational view of the device illustrated in Fig. 1;

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Fig. 3 is an enlarged, sectional elevational view of an end portion of the game device illustrated in Fig. 1, showing details of the rotary switch and a form of mounting of the light bulbs in one target area;

Fig. 4 is an enlarged plan view of one of the rotary switches;

Fig. 5 is a sectional, elevational view of the rotary switch shown in Fig. 4;

Fig. 6 is an enlarged, elevational view of the preferred "aim-disturbing" means;

Fig. 7 is an enlarged elevational view of a portion of a rotary switch, showing an optional arrangement of the pulley member of the rotary switch shown in Fig. 5; and

Fig. 8 is a wiring diagram schematically indicating the arrangement of the conductors and switch means.

In Figs. 1 and 2 of the drawing, the playing surface 1 of the device is represented as being the entire upper surface of the top panel 2 of an elongated rectangular, relatively flat box 3. Reference numeral 4 indicates the bottom panel of the box 3. S¹ and S² are rotary switches for two players. A¹ and A² are two target areas delineated on playing surface 1, A¹ being associated with rotary switch S¹, and A² being associated with rotary switch S². Each of target areas A¹ and A² comprises a centrally located principal "target," T¹ or T², respectively, surrounded by a plurality—twenty-eight, as shown—of subsidiary "targets" grouped in three concentric circles. Each of these "targets," both principal and subsidiary, is the tip end of a small electric light bulb, e. g., a flashlight bulb, protruding through an opening in panel 2. D¹ and D² represent two "aim-disturbing" means; as indicated, D¹ is specially adjacent to rotary switch S¹ but is functionally connected to rotary switch S², while D² similarly is near S² but is adapted to function with respect to rotary switch S¹. G¹ and G² are models of artillery pieces and are mounted on panel 2 in proximity to rotary switches S¹ and S², respectively. W¹ and W² are well-simulating plates so mounted, on panel 2, as to obscure the turning knobs of D¹ and D², respectively, from view by the opponent player.

Fig. 3 illustrates the mode of mounting the "target" light bulbs; also, it shows details of structure of rotary switch S¹. In this view, principal "target" bulb T² is shown partially protruding through opening 11 in panel 2. T² is mounted in a socket 12. Upright members 13 and 14 support a mounting board 15 substantially parallel to and somewhat below panel 2. Socket 12 is fixed to and supported by mounting board 15. C² represents a cable or assemblage of conductors leading from rotary switch S² (not shown in Fig. 3) to target area A². 16 is one of said conductors and is the conductor connecting socket 12 with one of the contact points on rotary switch S². Each of the other twenty-eight "target" bulbs included in target area A² similarly partially protrudes through an opening in panel 2, is similarly mounted in a socket supported by mounting board 15, and is similarly in contact with a particular conductor cable C².

C¹ is a cable, similar to cable C², connecting the contact points of rotary switch S¹ with the sockets of the light bulbs constituting target area A¹.

In the rotary switch, S¹, shown in Fig. 3, 20 is a substantially vertical shaft supported at its lower end by a bearing member 21; this latter is

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vertically adjustably mounted on block 22 supported on bottom panel 4 of the device. 25 is a switch arm; it is fixed at one end thereof to the upper end of shaft 20, and is provided adjacent its other end with a contact button 26 secured to the underface of a knob 26a which is mounted to slide in a slot 26b extending radially in switch arm 25. 30 is the contacts-carrying member of rotary switch S¹. It is a circular disc having an outstanding flange about the periphery at the upper edge of the latter, and is provided with a circular array of equally spaced stationary contact points 30a. It is provided with a central opening 33 through which the upper end of shaft 20 extends, said shaft being free to turn in said opening. The contacts-carrying member 30 is rotatable in circular opening 31 provided in panel 2 and is supported on the latter by engagement of said flange on the "stepped" rim of opening 31. 32 is a sleeve member, rotatable about shaft 20, which is fixed at the upper end thereof to contacts-carrying member 30. 34 is a peripherally grooved pulley fixedly mounted on sleeve member 32 adjacent the lower end of the latter. At 35 is indicated a round belt which is trained over pulley 34 and over a similar pulley on the shaft of "aim-disturbing" means D² whereby rotative motion may be imparted to pulley 34—and hence to contacts-carrying member 30—from said "aim-disturbing" means. In the form of construction illustrated in Figs. 3, 5 and 7, groups of conductors (six such groups being shown) from cable C¹ are led through and secured in as many channels 36, 36 through pulley 34, from which points the groups are subdivided into individual conductors leading to the contact points. The useful life of the conductor groups may be lengthened by loosely supporting the latter as by a supporting disc 37 (Fig. 7).

As shown in Fig. 5, the switch arm 25 may be swingable in an annular housing 40, e. g., may move within a groove 41 in such housing: if desired, the housing may be provided with an annular flange (not shown) more or less covering stationary contact points 30a.

In Fig. 6 is shown the structure of the "aim-disturbing" means. The same includes a shaft 50 the upper end of which protrudes through an opening 51 in panel 2. At its lower end it is supported by a bearing block 52 mounted on the bottom panel 4 of box 3. Intermediate the ends of the shaft 50, and preferably in the plane of pulley 34, there is fixedly mounted on the shaft a peripherally grooved pulley 53 receiving belt 35. A thumb button or knob 54 is fixed to the protruding upper end of shaft 50.

Fig. 8 illustrates use of batteries B¹ and B², such, for instance, as the common flashlight battery, contained within the device, as source of electric current. The invention is not restricted to use of batteries as current source but rather includes the employment of current from any suitable source. In Figs. 8 and 3, the lead from battery B¹ to the contact points on rotary switch S¹ bears the reference character C³. C⁴, a similar lead, connects battery B² with the contact points on rotary switch S².

As is well known in the electrical arts, the contacts-carrying members 30 of the rotary switches S¹ and S² may be formed from insulating material, the contact points only being conductive; or, it may be formed from conductive material—in which event the contact points are individually to be insulated therefrom. The

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sleeve member 32 preferably is made from insulating material.

The "playing surface" of the device may, as indicated hereinbefore, be co-extensive with the upper surface of the top panel. It may consist merely of a decorated coating applied to all, or a part of, the upper surface of the top panel. In the alternative, I contemplate superimposing decorative panels over portions only, e. g., over the "target areas," of the top panel of the device, which decorative panels can either be permanently fixed or detachably secured to the latter.

It is within my contemplation of the invention to so modify the device to accommodate more than two players. Thus, the device may comprise four target areas, four rotary switch means and four aim-disturbing means, appropriately spaced on and in a relatively square box or like container.

An explanation of a game playable by two players ("player No. 1" and "player No. 2") on the above-described apparatus follows:

The players play alternately, the order of their playing being determined by lot or in any other appropriate manner. Each player, in his turn, fires a predetermined number of "salvos," say, a single salvo, at the target area adjacent his opponent, the player endeavoring by said salvo to energize that target to which a higher or the highest scoring value has been assigned.

Each of the target areas T¹ and T² includes twenty-nine individually-energizable "targets" arranged as follows: in the outermost ring, sixteen targets; in the second ring, eight targets; in the third ring, four targets; and in the center, one target. Each such target in area T¹ (or T²) is electrically connected with one of the stationary contact points 30a on rotary switch means S¹ (or S², respectively), there being twenty-nine contact points on S¹ (and S²).

The energization of a target, during play, is scored as follows: a target in the outermost ring, 25 points; a target in the second ring, 50 points; a target in the third ring, 75 points; the center target, 100 points.

A "play" consists in one player's lighting one target, in that player's turn. A "game" consists in an arbitrary number (e. g., twenty) of plays by each player, and is won by that player whose total point score for the full number of plays is the higher. A "play" is effected as follows: Player No. 1, operating switch S¹, retracts knob 26a on switch arm 25 thereby preventing contact 26 carried by the knob from contacting any of the stationary contact points 30a, swings switch arm 25 any distance to right or to left, at will, and pushes forward member 26a thereby making contact between contact 26 and the selected contact point 30a, and hence energizing one target of target area T¹—say, a target in the second ring, for which he scores fifty points. While player No. 1 is making his "play," player No. 2 may, as often as and to any extent he desires, manipulate aim-disturbing means D² whereby rotatably to move member 30 of switch means S¹ of player No. 1, either in clockwise or counterclockwise direction or in a plurality of directions successively, and hence to disturb the "aim" of player No. 1 (i. e., to render it impossible for his opponent to retain any reliable association between any particular contact point 30a of his rotary switch means and any particular target of the associated target area).

Thereupon, player No. 2 similarly makes a "play," by retracting member 26a on switch arm

25 of switch S^2 , swinging arm 25 at will clockwise or counterclockwise any number of spaces, and pushing forward member 26a thereby making contact between contact 26 and the selected contact point 30a on member 30 of switch S^2 , and hence energizing one target of target area T^2 —say, the center target, for which he scores 100 points. While player No. 2 is making his “play,” player No. 1 may at will manipulate aim-disturbing means D^1 , as above described with respect to the previous “play,” and thereby spoil the “aim” of player No. 2.

The above game is susceptible of many variations. For example, the chance energization of an arbitrarily selected target—say, the center target—may be scored as winning a game regardless of the number of “plays” which have been made during that game.

Each of the switch means S^1 and S^2 may, if desired, be associated with shielding means (not shown in the drawing) similar to shielding means W^1 and W^2 shown in the drawing in association with aim-disturbing means D^1 and D^2 , whereby to screen one player's manipulation of his switch means from the view of his opponent. Also, if desired, member 40 of the switch means S^1 (and S^2) may have such configuration that ready view, from above, of the contact points on member 30 is obscured. Also, member 30 may be provided with a greater number of contact points than there are energizable targets in the associated target area, in which case the excess contact points are not parts of any circuit but are scorable as “duds.”

I claim:

1. A game apparatus for use by a player and conjointly by an opposed player, said game apparatus comprising in combination, a target means including a grouped plurality of individually energizable elements; a rotary switch means operable by said player and comprising a rotatable switch arm and a rotatable contact plate carrying thereon a plurality of contact points at least as numerous as are said energizable elements; conductors adapted to establish circuits through a power source, said rotary switch means and said energizable elements selectively; and means remote from said rotary switch means and operable only by an opposed player for rotating said rotatable contact plate to dispose the contact points carried thereon in new positions.

2. A game apparatus for use by two opposed players, comprising, in combination, two spaced target means each including a grouped plurality of individually energizable elements; two rotary switch means each adjacent one of said target means, each rotary switch means comprising a manually operable rotatable switch arm and a rotatable contact plate having a plurality of contacts adapted to be wiped by said switch arm, said contact plate having at least as many contacts as there are energizable elements of the remote target means; conductors adapted to establish circuits respectively from a power source through each of said rotary switch means to one of the energizable elements of the remote target means dependent upon the position of the switch arm; and means under the control of each player respectively and shielded from the view of the opposed player for rotating the contact plate of the opposed player's rotary switch means.

3. A game apparatus as defined in claim 2, in which each of said rotary switch means includes a generally vertical shaft rotatably supported at the lower end thereof, to the upper end of which

shaft said switch arm is secured; a sleeve member supported by and rotatable about said shaft intermediate its ends, to the upper end of which sleeve member said contact plate is secured; and a pulley secured to said sleeve below said contact plate, said pulley being adapted to impart rotary movement to said sleeve member.

4. A game apparatus for use by two opposed players, comprising, in combination, two spaced target groups of individually energizable electric light elements; two rotary switch means each adjacent one of said target means, each rotary switch means comprising a substantially vertical shaft, a bearing member rotatably supporting the shaft at its lower end, a sleeve member supported by and rotatable about said shaft, a manually operable rotatable switch arm secured to the upper end of said shaft, a rotatable contact plate secured to said sleeve member adjacent its upper end and having a plurality of contacts adapted to be wiped by said switch arm, said contact plate having at least as many contacts as there are energizable elements of the remote target means, and a pulley secured to the lower end of said sleeve member and adapted to impart rotary movement through the latter to said contact plate; conductors adapted to establish circuits respectively from a power source through each of said rotary switch means to one of the energizable elements of the remote target group dependent upon the position of the switch arm; and means under the control of each player respectively and shielded from the view of the opposed player for rotating the contact plate of the opposed player's rotary switch means, each said rotating means comprising a rotatably-supported shaft, a pulley secured to the latter, and an endless band passing between said pulley and the pulley of the opposed player's rotary switch means.

5. A game apparatus including, in combination, a playing surface, target means including a plurality of individually energizable elements viewable from above said playing surface, rotary switch means located partly below said playing surface, said rotary switch means comprising a rotatable contact plate having thereon at least as many contact points as there are energizable elements in said target means and a manually operable switch arm for selective adjustment with respect to said contact points, means for establishing electrical circuits from a current source through said rotary switch means to one of the energizable elements dependent upon the position of the switch arm; means remote from said rotary switch means and substantially concealed beneath said playing surface and operatively connected with said rotary switch means for rotating said contact plate.

6. A game apparatus comprising an elongated substantially rectangular box, a top panel closing said box and providing a playing surface thereon, a target means including a plurality of individually energizable electric light elements generally disposed within said box but having portions thereof visible from above said playing surface, rotary switch means disposed partly within said box, said rotary switch means comprising a manually operable rotatable switch arm and a rotatable disc-like member carrying on its surface a plurality of contact points adapted to be contacted by said switch arm, there being at least as many contact points as there are electric light elements, said switch arm and

said disc-like member being accessible from above said playing surface, a source of current, conductors disposed within said box adapted to establish electrical circuits from said current source through said electric light elements selectively and said rotary switch means, and means remote from said rotary switch means and generally disposed within said box for rotating the disc-like members of said rotary switch means.

7. A game apparatus for use by two opposed players, said apparatus comprising an elongated substantially rectangular box, a top panel closing said box and providing a playing surface thereon, two spaced target means each including a plurality of individually energizable electric light elements generally disposed within said box but having portions thereof visible from above said playing surface to define a target area, two spaced rotary switch means each adjacent one of said target means and each comprising a rotatable disc-like member carrying on its surface at least as many contact points as there are electric light elements in that target means which is remote from the rotary switch means and a manually operable rotatable switch arm adapted for

selective adjustment with respect to said contact points, the switch arm and the contact-carrying disc-like member of each rotary switch means being accessible from above said playing surface, a source of current, conductors disposed generally within said box for establishing electrical circuits respectively from said current source through one of said rotary switch means to the electric light elements of the remote target means selectively and said switch means under control of said switch arms, and means under the control of each player, respectively, and shielded from the view of the opposed player for rotating the rotatable disc-like member of the opposed player's rotary switch means.

CHARLES HAROLD SHIREY.

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