Oct. 12, 1965 M. I. GLASS ETAL 3,211,456

TARGET GAME WITH SIMULATED PROJECTOR

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Fig. 1

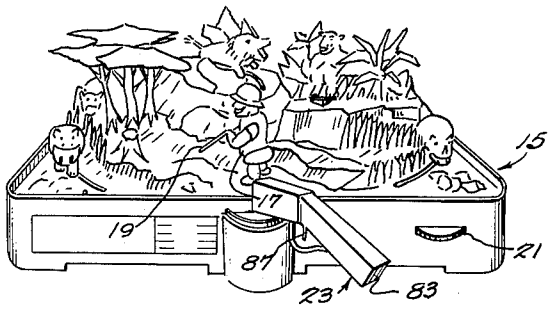
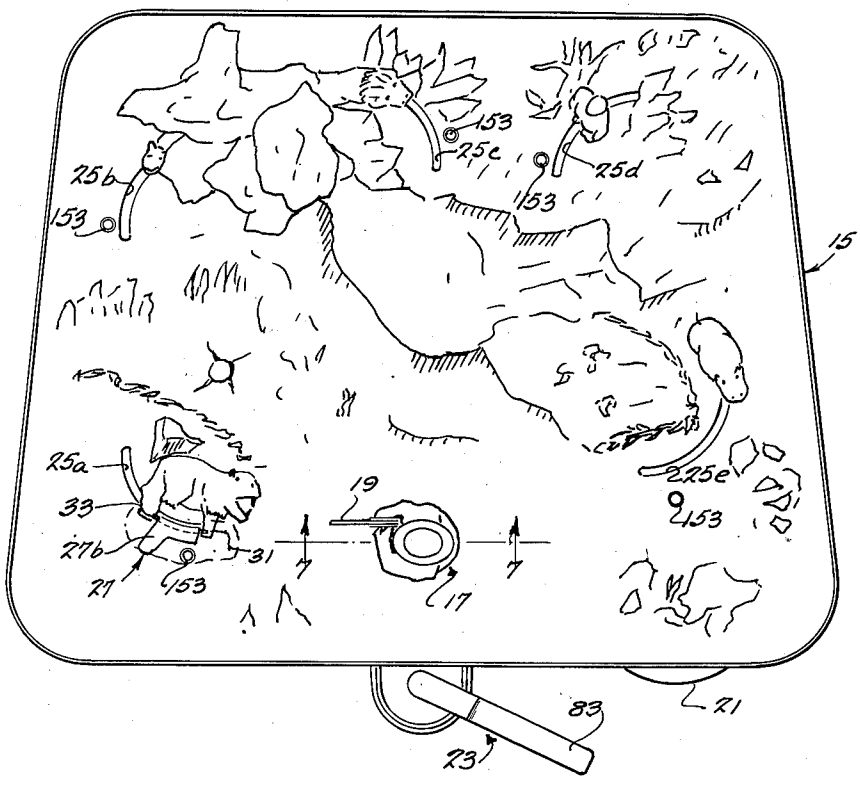


Fig. 2



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TARGET GAME WITH SIMULATED PROJECTOR

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Fig. 3

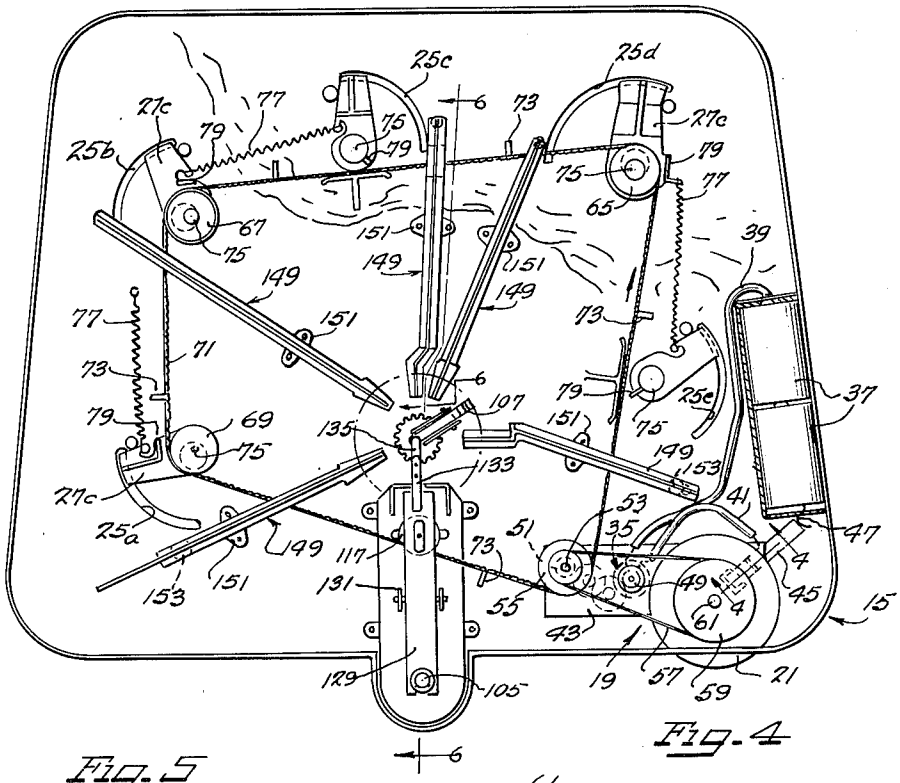


Fig. 4

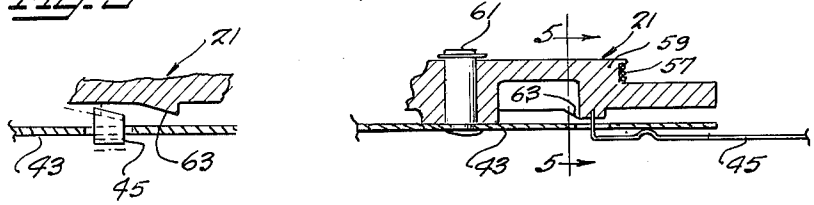
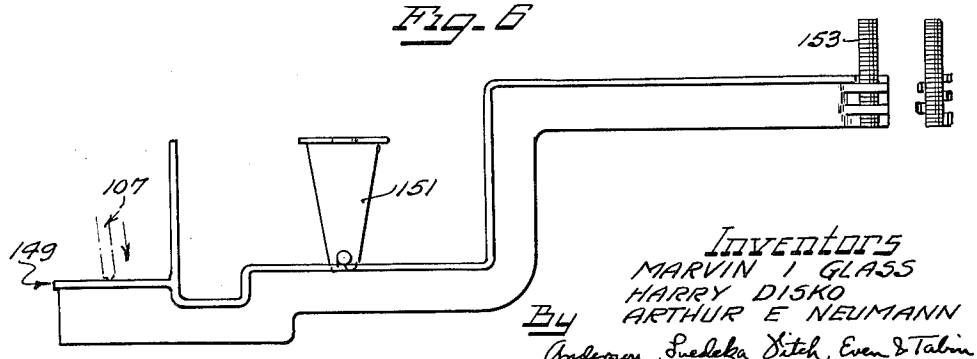


Fig. 5

Fig. 6



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TARGET GAME WITH SIMULATED PROJECTOR

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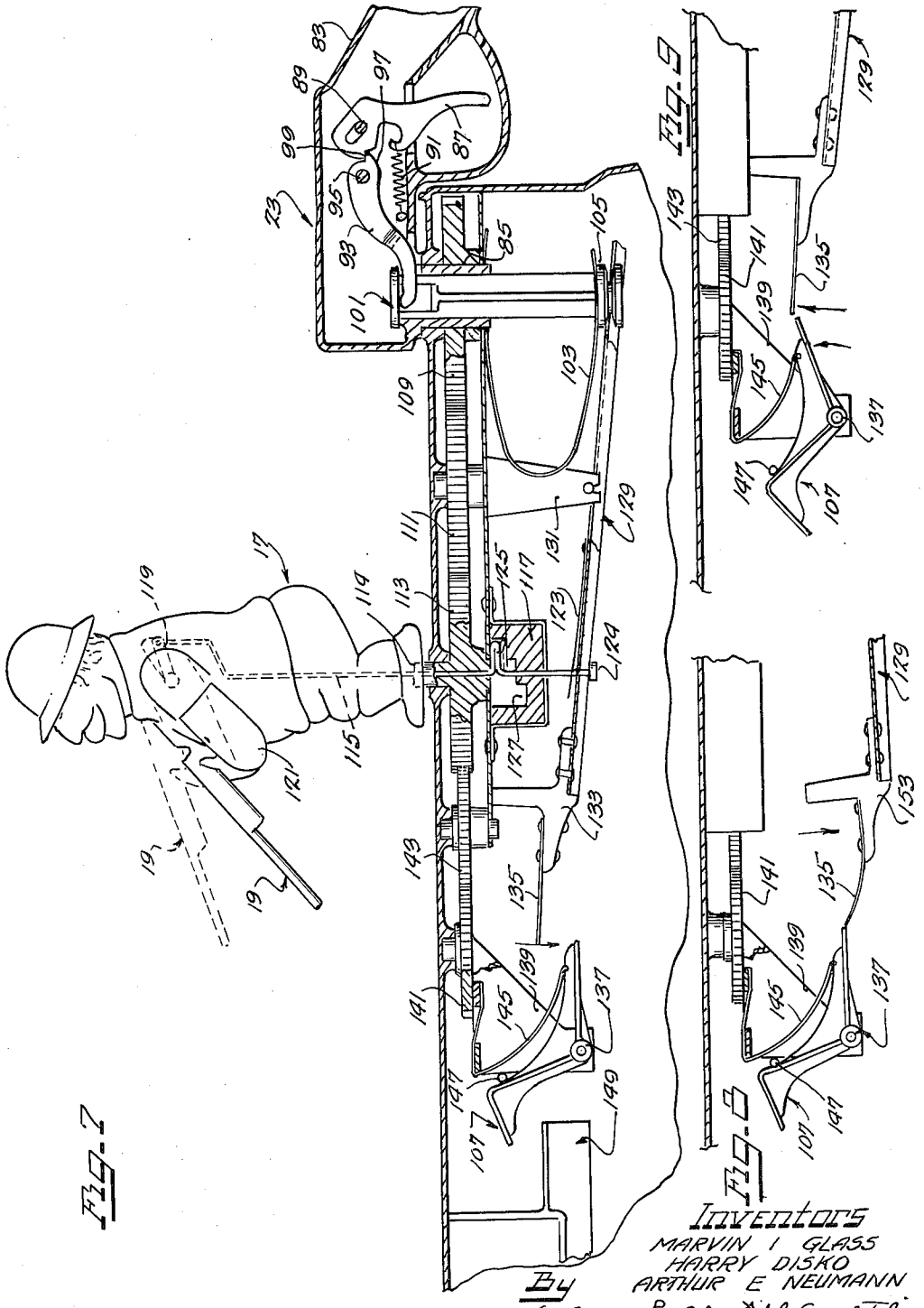


Fig. 7

Fig. 9

Fig. 8

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TARGET GAME WITH SIMULATED PROJECTOR

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Fig. 10

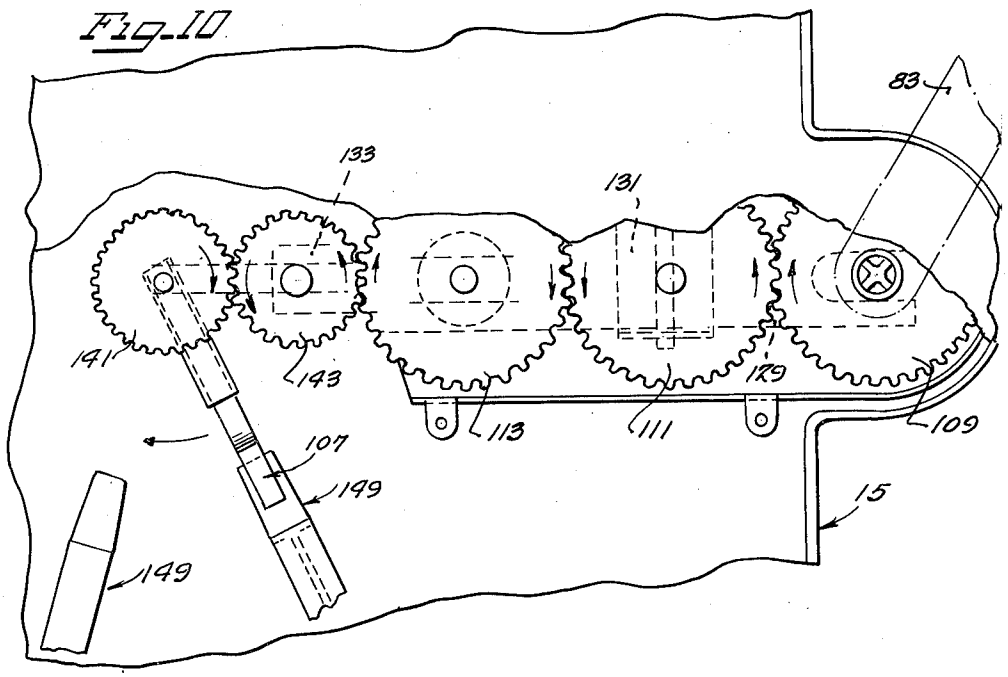


Fig. 13

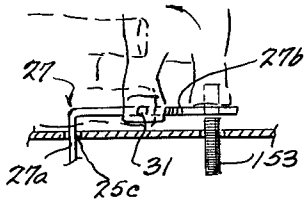
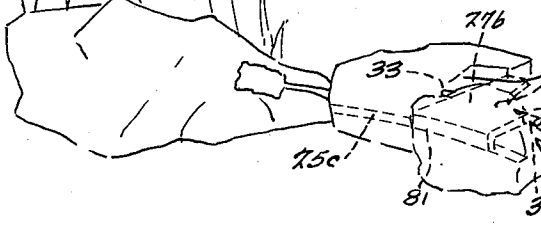


Fig. 11

Fig. 12



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3,211,456

TARGET GAME WITH SIMULATED PROJECTOR

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4 Claims. (Cl. 273—101.2)

The present invention relates generally to a game and is more particularly directed to a hunting game including a plurality of movable targets and means for firing at the targets by a player.

The usual form of target game involves primarily some degree of skill in firing a projectile at a target. There is ordinarily no suspense or uncertainty involved, and the primary concern of the player is with respect to properly aiming the projectile firing mechanism at the target. The present invention has for its principal object the providing of a target game wherein the targets are mounted for movement relative to the board, and the player is faced with some uncertainty with respect to the appearance and placement of the targets, in addition to a requirement for skill in aiming the firing mechanism in the direction of the target. A further object is to provide a target game in the form of a hunting scene, wherein the targets comprise movable animal figures which appear at random, and wherein the player is faced with the problem of properly aiming the firing mechanism at each figure as it appears in view.

Still another object of the invention is to provide a motor-operated target game including a plurality of animal figures which move at random between a concealed position and a position exposed to view by the player, with each animal appearing for a limited time during which periods the player must properly aim and fire at the animal, and wherein the operation of the firing mechanism, when properly aimed, results in knocking the animal down without actually firing a projectile. A further object of the invention is to provide a game of the type described above, wherein the target figures are disposed at various elevations on the board and the firing mechanism includes a rotatably mounted hunting figure having a gun which is operable by a player so that the gun is automatically elevated an amount corresponding with the elevation of the particular animal figure as the hunting figure is rotated to face the animal. Other objects and advantages will be apparent from the following description of the selected embodiment illustrated in the accompanying drawings, wherein:

FIGURE 1 is a perspective view of the game;

FIGURE 2 is an enlarged, top plan view of the game;

FIGURE 3 is a bottom plan view, illustrating the mechanism on the under surface of the board;

FIGURE 4 is an enlarged sectional view taken along line 4—4 of FIGURE 3;

FIGURE 5 is an enlarged, sectional view taken along the line 5—5 of FIGURE 4;

FIGURE 6 is an enlarged, sectional view taken along the line 6—6 in FIGURE 3;

FIGURE 7 is an enlarged, sectional view taken along the line 7—7 in FIGURE 2;

FIGURE 8 is an enlarged, fragmentary view of the mechanism in FIGURE 7, illustrating certain portions in different positions from those shown in FIGURE 7;

FIGURE 9 is a view similar to FIGURE 8, illustrating a different position for the elements;

FIGURE 10 is an enlarged, fragmentary plan view of the game with portions broken away to better illustrate certain of the mechanisms seen also in FIGURE 7;

FIGURE 11 is an enlarged, perspective view of the lion figure seen also in FIGURES 1 and 2;

FIGURE 12 is a view similar to FIGURE 11, showing the lion figure in its reclining position; and

FIGURE 13 is a sectional view taken along the line 13—13 in FIGURE 11.

With reference particularly to FIGURES 1 and 2, it will be noted that the selected embodiment of the invention comprises a three-dimensional game board **15**, including a terrain simulating a jungle and a plurality of animal figures which are mounted for movement on the board among the trees, rocks, etc. on the board. At the forward portion of the board, there is the figure of a man **17** carrying a gun, and the figure is rotatable to face any of the animal figures. As indicated in FIGURE 3, motor driven means **19** is provided for effecting random movement of the animals so as to cause each animal to move from a concealed position to an exposed position and then return to the concealed position within a predetermined time. Once the motor has been started by moving the control dial **21** on the forward edge of the game board, the movement of the animals is essentially continuous with each of the animals appearing in turn and for a predetermined time. The movement of the hunting figure **17** is under the control of the player by means of the firing mechanism **23** seen at the forward edge of the game board. As an animal appears in view, the player can rotate the firing mechanism **23** and thereby effect rotation of the hunting figure **17** to face in the direction of the exposed animal. The pulling of the trigger on the firing mechanism effects a hit of the animal only if the gun is properly aimed at the animal and the animal is in its forwardmost position on the board. Such hit is evidenced by the animal falling over and assuming a reclining position, as shown, for example, in FIGURE 12.

Thus, it is seen that the player is faced with several problems simultaneously, which must be properly solved in order to register a score. Since the animals appear at random, that is, there is no readily discernible pattern to the movement of the animals on the board, the player must be prepared to turn the hunting figure rapidly through an angle of varying magnitude, but which may be as great as approximately 180°, in order to face the hunting figure **17** in the direction of the animal appearing. Then too, the trigger on the firing mechanism **23** must be pulled at the proper moment, that is, when the animal is in its forwardmost position and has temporarily ceased moving. If the player fires prematurely or fires after the animal has started retreating toward his position of concealment, the animal will not be knocked down. To add further to the skill required in playing the game, suitable timing mechanism is provided in conjunction with the motor means, so that in a predetermined time, each of the animals has appeared an the motor **35** has then stopped. The player's skill is judged on the basis of how many animals he has knocked down during the operating period.

Looking now to the details of construction for this game, it will be noted that each of the animal figures is supported on the board for movement along an arcuate path (FIGURE 2) as defined by slots *25a*, *25b*, *25c*, *25d* and *25e* in the upper surface of the game board. With reference to FIGURES 11–13, it will be noted that the supporting means for each figure comprises an angularly bent U-shaped plate member **27**, with the bight section *27a* extending downwardly into the arcuate slot and one leg *27b* overlying the upper surface of the game board. The animal figure **29** is pivotally mounted on the upper horizontal leg section *27b*, as by means of pin and bore connections **31** and **33** at the forward and rearward portions of the animal, respectively. In this connection, it will be noted that the rear supporting pin **33** is located generally centrally of the animal, whereas the

forward pin **31** is off-set to one side. The reason for this will be more apparent later in the description.

The mechanism for effecting the random movement of the animal figure is seen particularly in FIGURE 3. Such mechanism comprises a motor **35** which is electrically operated by a pair of batteries **37** connected to the motor through a first lead wire **39** secured to one battery terminal and a second lead wire **41** which is connected bebetween the motor and a metal base plate **43** comprising part of a timer switch which further includes a movable switch arm **45**, which is connected to a contact clip **47** engaging the base of the other battery. Switch member **45** engages clip **47** at all times and the electrical circuit to the motor is broken by depressing member **45** so as to move the latter away from contact with plate **43**, as shown in FIGURE 5. The motor includes a drive gear **49** which is suitably connected through a series of gears to a main driving gear **51** supported on a generally vertical shaft **53** carried on the under surface of the game board. The shaft **53** also includes a drive pulley **55** connected by a belt or cable **57** with a pulley **59** on the timer shaft **61**. As illustrated further in FIGURES 4 and 5, the timer shaft supports the circular dial **21** which projects through an opening in the forward edge of the game board. The exposed surface of this timer disc is suitably calibrated to mark the "off" and "on" positions, and also to indicate the amount of time which has expired during the operation of the game. As the player moves the disc to the "on" position, this permits movement of the timer switch arm **45** into contact with base plate **43**, thereby actuating the electric motor. As the game progresses and the timer disc approaches the "off" position, a cam **63** on the under surface of the disc engages the switch arm **45** and moves the latter so as to break contact with the plate **43**, thus shutting off the electric motor.

During the operation of the electric motor **35**, the drive gear **49**, of course, rotates, and this rotation is accompanied by rotation of the pulley **55**. Extending around this pulley **55**, and around three idler pulleys **65**, **67** and **69**, which are spaced around the outer portion of the game on the under side of the board, is a drive belt **71**. This drive belt may be of rubber or other suitably flexible material and includes a plurality of projecting lugs **73** which are disposed in predetermined, spaced-apart positions along the belt and which serve to move the animal figures as the lugs come into contact with operating mechanism for the individual figures.

As seen in FIGURE 3, each of the animal figures is supported on the U-shaped element **27** by a vertically depending shaft **75** which in three instances is also the supporting shaft for one of the idler pulleys **65**, **67** and **69**. The lower leg section **27***c* of the supporting plate structure for each animal comprises a generally horizontally disposed plate which is formed integrally with the portion extending into the arcuate slot and which is mounted on the rotatable shaft **75** in order to provide the desired arcuate movement of the animal. Each of the animal supporting plates is biased by means of a coil spring **77** so as to normally position the animals in their concealed position behind the rocks and trees on the game board. As the belt **71** moves around the pulleys, one of the projecting lugs **73** strikes against an ear or other projection **79** on the animal supporting plate and causes the latter to move about its axis. In this respect, the operating mechanism includes lugs which are so arranged on the drive belt that only one of the animals is actuated at a time. The lug **73** continues to engage the projection **79** for a given time and during this time, the animal moves to the forward edge of the associated guide slot. Continuing movement of the lug **73** relative to the ear **79** causes the former to move away from engagement with the ear, and the animal supporting structure is then released for rearward movement under the biasing action of the spring **77** to replace the animal in its concealed position.

During the short interval of time in which the animal is in its forwardmost, exposed position, the player has an opportunity to effect a hit on the animal and cause the animal to fall over on its side. This, of course, is achieved through the proper operation of the firing mechanism **23** in the form of a rifle or pistol grip **83** on the forward edge of the game board. As noted particularly in FIGURE 7, this firing mechanism is supported on the board for rotation about a vertical axis by engagement of a cylindrical section **85** with an opening in the board. The firing mechanism is generally in the form of a hollow handle which carries a double-acting trigger mechanism. This trigger mechanism includes the main trigger **87** supported on a pin **89** and having a portion projecting downwardly into the trigger guard for engagement by the player. The trigger **87** is biased toward a forward position by means of a coil spring **91** secured between the trigger and the trigger housing. A trigger lever or hammer **93** is also rotatably mounted in the housing on a transverse pin **95**, and includes at one end a cam surface **97** which is engageable by a ledge portion **99** on the main trigger. The other end of the trigger hammer **93** engages a vertically movable piston-like element **101** which is biased into a lowermost position by means of a leaf spring **103** mounted on the board and engaging an enlarged lower end portion **105** of the piston **101**. Therefore, as the trigger **87** is pulled, it raises the piston-like member **101**, and as the ledge **99** of the trigger falls off of the cam portion **97** on the hammer **93**, the piston-like member **101** is released for downward movement under biasing action of the leaf spring **103**. The action resulting from such downward movement of member **101** will be fully described after considering certain other operations attendant to the movement of the pistol grip.

With reference now to FIGURE 10 as well as FIGURE 7, it will be noted that the aiming of the gun **19** carried by the hunting FIGURE 17 is effected by rotation of the pistol grip **83** by the player, through means of a series of gears interconnecting the pistol grip and the hunting figure. More particularly, the lower portion of the cylindrical section **85** of the pistol grip, which is rotatably mounted in the game board, has fixed thereto a gear **109** for rotation with the pistol grip. This gear **109** is connected in turn, through an idler gear **111**, with a gear **113** disposed axially of the hunting figure and fixed thereto for simultaneous movement. Consequently, as the pistol grip is rotated by the player, there is an accompanying rotation of the hunting figure. In the illustrated embodiment, such rotation has a one-to-one ratio, but other ratios may obviously be selected.

It will also be noted in FIGURE 7 that the hunting FIGURE 17 is supported on a boss **114** projecting upwardly from gear **113**, and a generally vertically extending rod **115** passes downwardly from the figure through the axis of the gear **113** and through an underlying cam section **117**. The rod **115** is axially slidable relative to the hunter figure, and the upper end of the rod is fixed to a crank arm **119** interconnecting the body of the figure with a relatively movable arm **121** carrying the gun **19**. The rod **115** and the gun-bearing arm **121** are biased into a lowered position by means of a leaf spring **123** fixed to a lever **129** and having its free end portion provided with an opening to receive the rod. A lug **124** on the end of rod **115** prevents relative displacement of the rod and spring. The lower end portion of the slidable rod **115** includes an off-set section **125** in position to engage stepped cam surfaces **127** of various elevations corresponding with the different elevations provided for the animal figures on the board. As the hunter is rotated to face any one of the several animals provided on the board, the off-set portion **127** of the rod **115** is cammed vertically to provide for an accompanying vertical movement of the gun **19** to an elevation corresponding with that of the animal being faced by the hunter.

Having rotated the hunter by means of the pistol grip **83** in order to face a particular animal which has appeared

in view, the player is then in a position to pull the trigger **87** which produces the following action. As previously described, the trigger is a double-acting type and initial movement of the trigger is accompanied by an upward movement of the piston-like element **101** against the biasing of the leaf spring **103**. This upward movement causes a corresponding movement of lever **129** which is pivoted intermediate its ends on a bracket **131** carried by the board through means of a pin and slot connection. The free end of the lever **129** has fixed thereto a bracket portion **133** supporting a thin, metal member **135** which is generally in the form of a flat spring element. The free end of this flat spring **135** is positioned for engagement with the firing pin **107**, which is in the form of a bell crank supported by means of a pin **137** on a bracket or plate **139** depending from a rotatable gear **141**. This rotatable gear **141** is in engagement with an idler gear **143** which meshes with the larger gear **113** supporting the hunter. Further, there is provided a leaf spring **145** fixed to the bracket and having its depending free end portion in engagement with the lower section of the firing pin to bias the latter into the position seen in FIGURE 7. A small transverse pin **147** or the like is fixed to the upper portion of the firing pin in position for striking the leading edge of the depending bracket **139**, to thereby serve as a stop means for the firing pin.

With reference also to FIGURES 8 and 9, it will be seen that as the trigger is pulled, there is an accompanying downward movement of the forward end of the elongated lever **129**, causing the spring plate **135** to strike against the firing pin **107**. Initially, this striking engagement causes the firing pin **107** to rotate clockwise against the biasing action of the spring **145**, thereby storing energy for subsequent movement of the firing pin. As the lever **129** continues its downward movement, the flat spring **135** on the forward end thereof is flexed (FIGURE 8) to pass beyond the firing pin **107** and thereby release the latter for counter-clockwise rotation under the action of the curved leaf spring **145**. The counter-clockwise movement of the firing pin **107** causes the forward end portion thereof to strike against another pivoted lever **149** (see also FIGURE 6) which is pivotally mounted intermediate its ends on a bracket **151** carried by the game board. The forward free end portion of this pivoted lever includes a flexible, cylindrical element **153**, such as a coil spring, which is disposed to project upwardly through an opening **155** in the game board upper surface (FIGURES 11–13). It will be noted that there is provided a lever **149** for each of the animal figures (FIGURE 3), and the resilient element **153** on the end of each lever is adapted to engage the associated animal when the animal is in its forwardmost position. Such engagement causes the animal to move about its horizontal supporting axes and assume the reclining position shown in FIGURE 12. In this latter respect, it will be noted that the offset relationship of pins **31** and **33** provides stability for the animal during its movement along the board, leaves one of the front legs free to be struck by element **153**, and yet permits pivotal movement of the animal between an erect and a reclining position. The striking element **153** is made resilient or yieldable in order that it will not produce a jamming of the animal operating mechanism if such element is projected through the opening **155** in the board before the animal reaches the end of its path of travel. If such occurs, the animal will strike against the yieldable element and the latter will bend sufficiently to permit full forward movement of the animal.

The firing pin **107** (FIGURES 7–9) is rotatable with the supporting gear **141** and is indexed with respect to the hunting figure **17**, so that as the latter faces any one of the several animal figures the firing pin is poised with its forward section in position to strike against the adjacent end of the associated lever **149**. In this respect, it should also be noted that the width of the lower section of the firing pin **107** is sufficient to be in the path of movement of the spring plate **135** at all times, even though the spring plate is normally stationary while the firing pin **107** is subject to rotation with the hunter figure.

After one or more of the figures has been knocked down in the manner described, the figure is retained in its exposed position by virtue of the figure being blocked or wedged against a rock, tree or the like, appropriately disposed to the rear of the figure when the latter is exposed to view (FIGURE 12). Thus, such reclining figures can only be returned to their original position of concealment by manually raising the figure to its standing position, whereupon the associated coil spring **77** causes the animal to be withdrawn to its rearwardmost position.

After the drive motor **35** has ceased operating in response to action of the timer at the end of one revolution of the timer disc **21**, the animals knocked down can be returned to their concealed position in the manner described above, and the game is ready for another period of play which can again be started by turning the timer disc to the "on" position and thereby initiating operation of the electric motor. The primary object of the game is, of course, to knock all of the animals down during the prescribed period of play. As the player acquires skill in the game, it may be possible for him to achieve this result in less than the full period of operation of the motor and, therefore, the timer disc is preferably calibrated so as to indicate intervals of elapsed time. In this way, it can be determined which player has knocked all of the animals down in the shortest period of time.

It is seen, therefore, that there is provided a form of target game which is extremely interesting, both with respect to the realistic effect provided by the game board and with respect to the problems presented for the player. The suspense and uncertainty facing the player with respect to the random appearance of the animal figures, and the timing required for firing the gun at the exact moment the animal is in its forwardmost position, are particularly important in making this game attractive.

Although shown and described with respect to a particular embodiment, it will be apparent that various modifications might be made without departing from the principles of the present invention.

What is claimed is:

1. A hunting game comprising a board, a plurality of animal figures mounted on supporting means carried by the board for pivotal movement relative thereto and for movement with said supporting means relative to the board; terrain simulating means on the board including means for concealing each of said figures when in a first predetermined position and affording exposure of each figure to view when the movable figure is in a second predetermined position, motor driven means connected with each of said figures and operable to effect movement of each figure between said first and second positions, a hunting figure rotatably mounted on said board in position to face each of said figures, control means carried by said board in position for access thereto by a player and connected with said hunting figure to provide for selective rotation thereof, said control means including a trigger mechanism for firing by the player, and additional means carried by said board and operable to register a hit on one of said animal figures when the latter is exposed to view and said gun is directed at said one animal figure, said additional means comprising a plurality of pivotally mounted levers with each lever including a portion engageable with one of the animal figures when said one figure is in said second position to knock the figure down, and said additional means also comprising means for operatively connecting said trigger mechanism with one of said levers when said hunting figure is directed at the associated figure, so that the firing of said trigger mechanism results in knocking down the figure.

2. A hunting game comprising a board, a plurality of animal figures mounted on supporting means carried by the board for movement relative thereto, said figures being pivotally mounted on said supporting means for move-

ment between an erect and a reclining position with the several animals disposed at different elevations on the board, terrain simulating means on the board including means for concealing each of said figures when in a first predetermined position and affording exposure of each figure to view when in a second predetermined position, motor driven means connected with each of said figures and operable to effect individual movement of each figure between said first and second positions, a hunting figure rotatably mounted on said board in position to face each of said figures, said hunting figure including a gun which is movable vertically, means carried by said board which is operable to move said gun to a position corresponding with the particular elevation of any one of said figures as said hunting figure is rotated to face said figure, control means carried by said board in position for access thereto by a player and connected with said hunting figure to provide for selective rotation thereof, said control means including a trigger mechanism for firing by the player, and additional means carried by said board and operable to register a hit on one of said animal figures when the latter is exposed to view and said gun is directed at said one animal figure, said additional means comprising a plurality of pivotally mounted levers with each lever including a portion engageable with one of the animal figures when said one figure is in said second position to knock the figure down, and said additional means also comprising means for operatively connecting said trigger mechanism with one of said levers when said hunting figure and gun is directed at the associated figure, so that the firing of said trigger mechanism results in knocking down the figure.

3. A hunting game comprising a board, a plurality of animal figures supported on the board for linear movement along the board through a predetermined path and for movement between an erect position and a reclining position, terrain simulating means on the board including means for concealing each of said figures when in a first predetermined position on said path and affording exposure of each figure to view when in a second predetermined position, motor actuated means connected with each of said figures and operable to effect individual movement of each figure from said first to said second positions and then return to said first position, said motor driven means also being effective to cause each animal figure to pause momentarily at said second position, timer means connected with said motor driven means and operable to provide operation of the latter for a predetermined period, a hunting figure rotatably mounted on said board in position to face each of said figures, control means carried by said board in position for access thereto by a player and connected with said hunting figure to provide for selective rotation thereof, said control means including a trigger mechanism for firing by the player, and additional means carried by said board and operable to register a hit on one of said animal figures when the latter is exposed to view in said second position and said gun is directed at said one animal figure, said additional means comprising a plurality of pivotally mounted levers with each lever including a portion engageable with one of the animal figures when said one figure is in said second position to move the animal from its erect position to its reclining position, and said additional means also comprising means for operatively connecting said trigger mechanism with one of said levers when said hunting figure and gun is directed at the associated figure, so that the firing of said trigger mechanism results in knocking down the figure.

4. A hunting game comprising a board, a plurality of animal figures mounted on the board for movement relative thereto, means on said board for concealing each of said figures when in a first predetermined position, drive means connected with each of said figures and operable to effect individual movement of each figure between said first position and a second, predetermined position wherein the figure is exposed to view by a player, a hunting figure including a gun rotatably mounted on said board and a movable gun control means carried by said board and connected with said hunting figure so as to provide for controlled rotation of the figure by a player, said gun control means including means for firing the gun, and additional means carried by said board and operable to register a hit on one of said animal figures when the latter is exposed to view at said second position and said gun is directed at said one animal figure and fired, said additional means comprising a first lever means carried by said board for movement with said gun control means and operable by said gun firing means, a second lever means associated with each of said second positions for said figures, said first and second lever means being constructed and arranged so that said first lever means is positioned for operating engagement with one of said second lever means only when said gun is aimed at said second position for the associated figure, and means responsive to the actuation of said firing means for effecting movement of said first lever means in a direction to strike the second lever means.

References Cited by the Examiner

UNITED STATES PATENTS

1,324,189	12/19	Bremer	273—101.2
1,546,284	7/25	Helling	273—101.2
1,705,172	3/29	Berger	273—101.2 X
1,743,201	1/30	Fey	273—101.2
2,805,064	9/57	Glass et al.	273—101.2

FOREIGN PATENTS

898,456	6/62	Great Britain.

DELBERT B. LOWE, *Primary Examiner.*