

Sept. 7, 1965

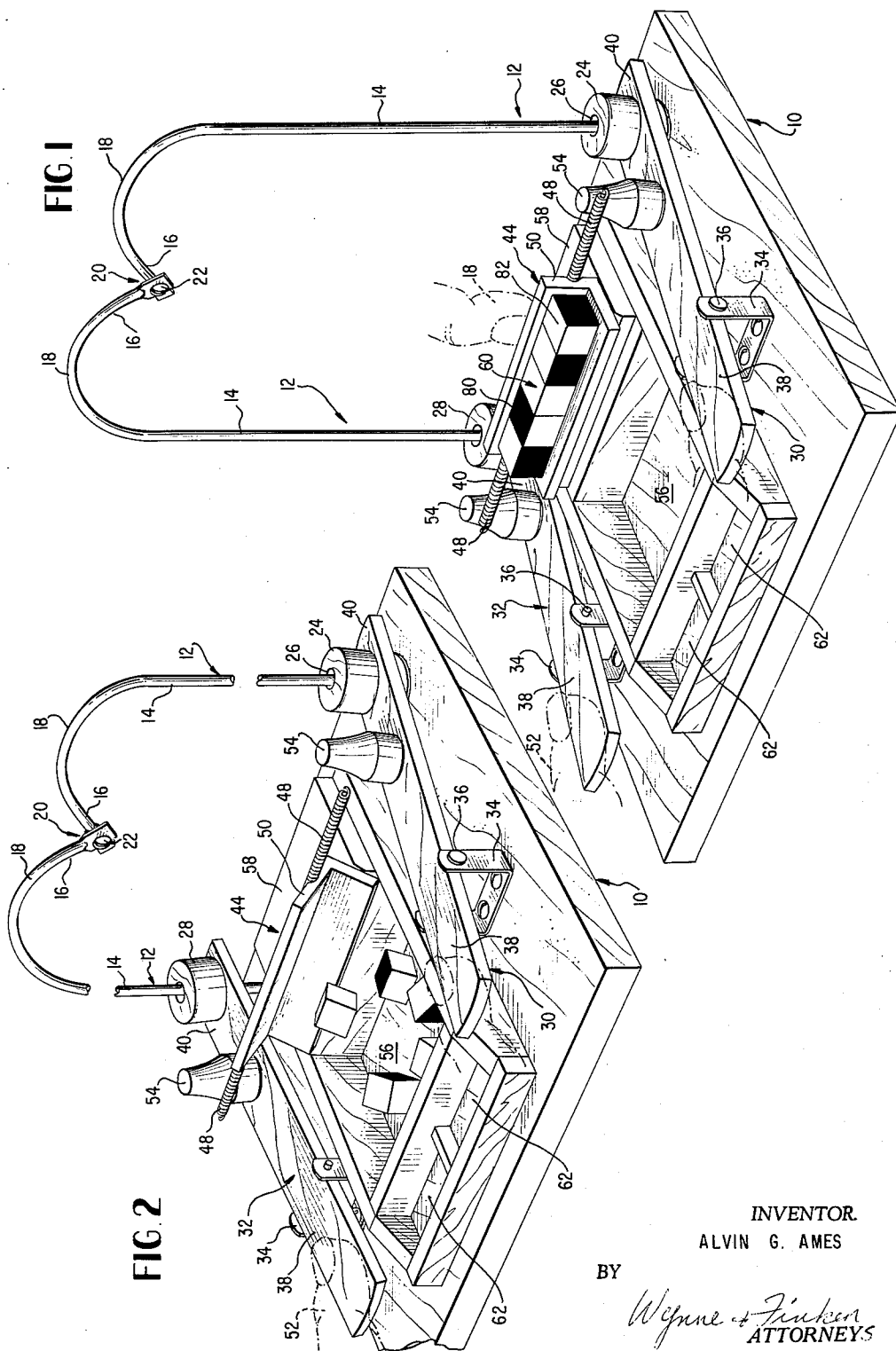
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GUIDED PROJECTILE GAME

Filed July 29, 1963

2 Sheets-Sheet 1



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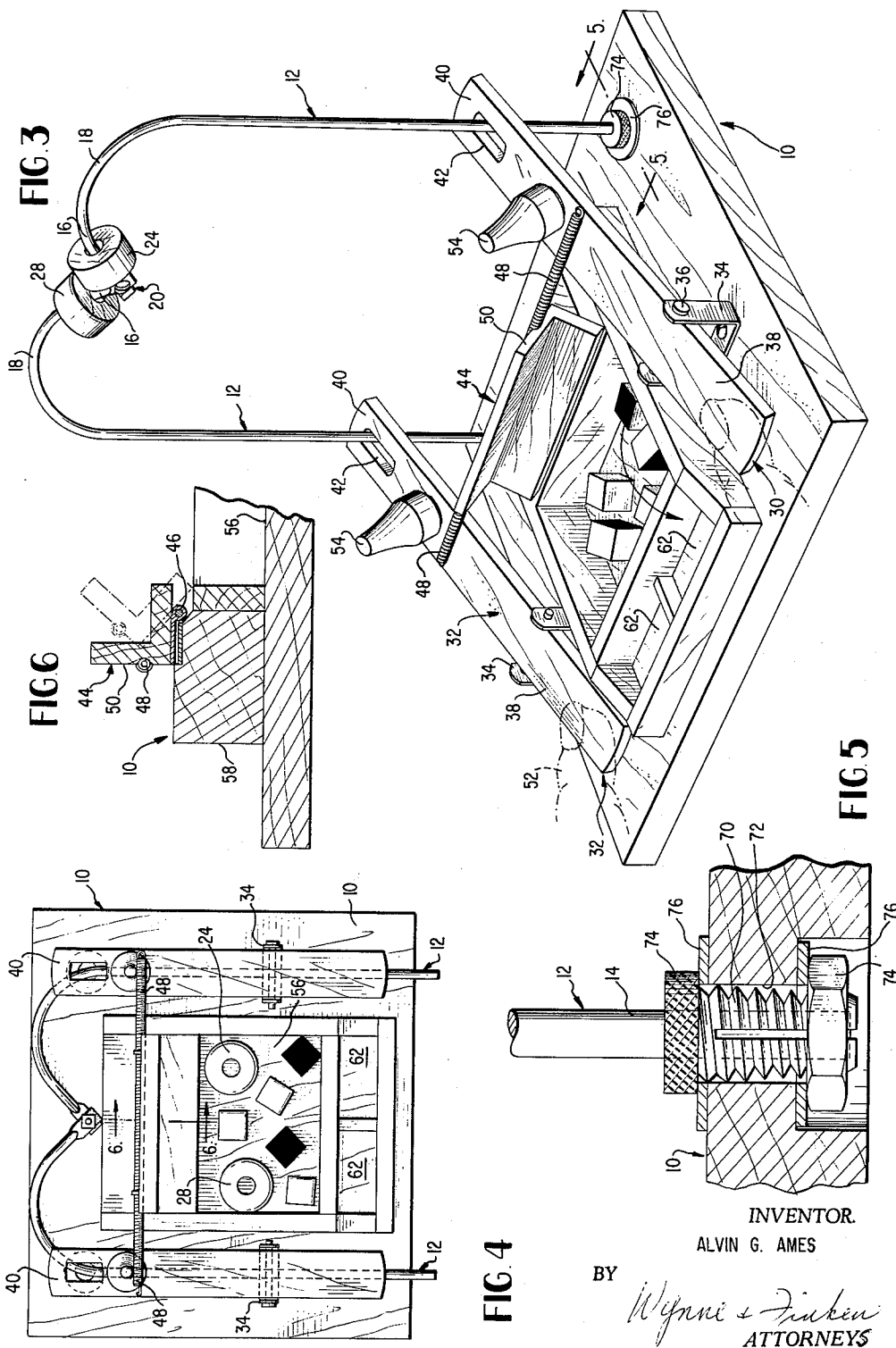
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GUIDED PROJECTILE GAME

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Filed July 29, 1963, Ser. No. 298,056

10 Claims. (Cl. 273-1)

This invention relates to a game apparatus, one of the objects being to provide a simple, inexpensive, but durable structure for a contest-type game of skill requiring quick physical reactions to visual recognition of a varying set of signals produced through chance. More particularly this invention relates to an apparatus for testing and developing abilities of recognition and swift reaction in an entertaining and challenging way on the part of two or more contestants. This is accomplished by providing a contest involving action, signal, and reaction on the part of the contestants. Perception, quick reaction, and a knowledge of the law of probability are helpful in playing the game. The apparatus is substantially built and the mechanism is fool proof in that no player has an advantage other than his natural facilities of perception and quick reaction.

The apparatus is useful in the medical field for testing, training, and developing skills involving the delicate combination of visual and motor sensibilities. The apparatus is also useful for improvement of skills vital in general areas such as driving an automobile, and in special areas such as sports where there must be split second decisions in action or restraint.

The entire apparatus is designed in a manner to facilitate disassembly for compact packaging.

The apparatus of the invention consists of a plurality of spaced guide means each having a starting zone at one end portion with their other end portions converging towards one another and providing a goal. A game piece or missile is mounted to move along each guide means. Missile projecting means and a chance signaling device to indicate when the missile projecting means should be actuated are provided. The guide means and missiles are operably arranged to enable only the first missile arriving at the goal to enter and be positioned at the goal. In this way the missile to reach the goal first is clearly identifiable.

In playing the game, a third party or one of the players operates the chance signaling device. If a "FIRE" signal is given by the chance signaling device, all players pump their missile projecting means as swiftly as they can, firing their missiles along the guide means. The player whose missile gets to the goal first wins the round. Due to the fact that the first missile arriving at the goal extends into and blocks the path of travel of another missile, the winner of the round is clearly indicated.

In the embodiment shown, the chance signaling device consists of a tilt bench on which cubes are placed at random, each of which has an indicating surface painted on one side. The missile projecting means consist of levers mounted adjacent each guide means. Each player places his fingertips on one of the levers waiting to pump the lever and fire his missile. As mentioned, a third party may dump the tilt bench or one player may depress his lever slightly by a squeezing or bumping action, to dump the tilt bench allowing the cubes to fall and roll into a pen. Operating the signaling device in itself requires development of some skill because the signaler must quickly become poised for the possible shot during the brief period in which the cubes stop falling and rolling. The signal for "FIRE" is one or more indicating surfaces face up. It is "DON'T FIRE" if no indicating surfaces face up. If one or more indicating surfaces face up, each player will quickly pump his projecting lever with his fingertips firing his missile towards the goal. The

missile which gets there first is clearly identifiable. The winner takes one cube and puts it in a score keeping bin in his corner and the game continues with the remaining cubes in the same manner. When no indicating surface appears the game continues with the same number of cubes. If no indicating surface faces up but one player fires his missile to the goal, a foul is committed and his opponent is awarded a cube. A foul takes place only if the missile goes all the way to the goal. If both players foul on the same play, neither wins a cube. A player wins the game by winning a predetermined number of cubes.

It will be noted that the chances of a "FIRE" signal coming up change as the game progresses. At the beginning, if five cubes are used, there is a slightly greater chance that the signal will be "FIRE." When only one cube is in play, the chances of a "FIRE" signal are one out of six.

The apparatus lends itself to a countless variety of alternatives. For instance, the "FIRE" signal for the first round, by agreement, may be two indicating surfaces instead of one. More than one color can be used. Dice can be used instead of cubes to introduce arithmetic. The "FIRE" signal then might be any number agreed upon from one to six; it might be a total odd number; it might be a total even number. The same number of cubes or dice might be used on each round and score kept with a pencil.

Other objects, advantages, and meritorious features will more fully appear from the following specification, claims, and accompanying drawings, wherein:

FIGURE 1 is a front perspective view of the game apparatus;

FIGURE 2 is a front perspective view of the game apparatus showing the signaling cubes being dumped;

FIGURE 3 is a front perspective view of the game apparatus showing how the first missile arriving at the goal extends into and blocks the path of travel of another missile to the goal;

FIGURE 4 is a top plan view showing the apparatus disassembled for packaging;

FIGURE 5 is a vertical sectional view taken on the line 5-5 of FIGURE 3; and

FIGURE 6 is a vertical sectional view taken on the line 6-6 of FIGURE 4.

As shown in FIGURES 1-3, the apparatus consists of a base 10 on which are mounted inverted J-shaped guide rods 12, each having a long leg 14 and a short leg 16 with a curved portion 18 therebetween, the long legs extending upwardly from the rearward portion of base 10, the short legs being joined at their ends to form a goal 20. The guide rods 12 may be joined together at the goal 20 by any suitable means, for example, the nut and bolt 22.

Cylindrical game pieces or missiles 24 and 28 are provided with a bearing hole 26 concentric with their axis of rotation and are slidably mounted on their respective guide rods 12. The length and diameter of bearing hole 26 are of predetermined dimensions to enable smooth free gliding passage of missile 24 along and around the guide rod.

Rearwardly extending missile projecting levers 30 and 32 are pivotably mounted on the base 10 by means of brackets 34 and lateral pins 36. Each lever has a forward operating end 38 and a rearward propelling end 40, the missile being seated on top of the propelling end when in down position. A longitudinal slot 42 is provided in the propelling end 40 to accommodate the guide rods 12 so that no interference therewith occurs during operation of a lever.

Tilt bench 44 is pivotally mounted by horizontal hinge 46 shown in FIGURE 6 to the base 10 through pedestal 58, the bench extending transversely between levers 30 and 32 and being positioned rearwardly of brackets 34

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and forwardly of guide rods 12. Flexible rod 48, shown as a coiled spring, is mounted on the back 50 of the tilt bench 44 and extends laterally over levers 30 and 32 to coact therewith to dump the tilt bench 44 which pivots forwardly and downwardly about its pivot hinge 46 when a lever is actuated by fingertip 52. Levers 30 and 32 include camming posts 54 positioned to engage flexible rod 48. Flexible rod 48 must have enough flexibility so that it does not interfere with further propelling movement of the lever (FIG. 3) after tilt bench 44 has been dumped. It will be appreciated that it is not necessary to pump a lever to dump the tilt bench as the tilt bench may be dumped by being pushed at its back 50 as by fingertip 18.

As seen in FIG. 2, the cubes fall into and roll in the pen 56.

The cube pen 56 is positioned forwardly of and sufficiently beneath the tilt bench to cause action by the signaling cubes 60. Pedestal 58 must elevate the tilt bench from the surface of pen 56 sufficiently to permit free fall of signaling cubes 60. An elevation of about the height of two signaling cubes has been found sufficient.

As shown in FIGURE 3 when levers 30 and 32 are pumped, missiles 24 and 28 are projected along guide rods 12 towards the goal 20. The outside diameters of the missiles and the curvatures of guide rods 12 are operably related to enable all missiles to glide along the curved portion 18 downwardly onto the short leg 16 of their respective guide rods and allow only the first or leading missile 24 to travel completely downward to goal 20, the first missile arriving at the goal extending into and thereby blocking the path of travel of another missile 28. Bins 62 are provided on the base 10 in which each player may place his cubes to keep score.

FIGURE 4 shows the game apparatus disassembled for packaging. Guide rods 12 are detached from base 10. Missiles 24 and 28 are removed from the guide rods and placed in pen 56. Guide rods 12 are then slid through brackets 34 between the levers and the base. In this way a compact unit is formed which minimizes damage to the apparatus and facilitates packaging for shipment.

FIGURE 5 shows the manner in which guide rod 12 is attached to base 10. The end of the long leg 14 of guide rod 12 threaded as at 70 is passed through a hole 72 in base 10 and is locked in position by lock nuts 74 and associated washers 76.

Five sides 82 of a cube 60 are preferably the color of pen 56 with the indicating surface 80 being a different color. It will be appreciated that constructions of the game apparatus other than as shown in the drawings are possible within the scope of the invention. For example, the guide means may be hollow tubes through which the missiles travel rather than guide rods. Similarly, projecting means other than levers may be used, such as fluid, electrical and spring devices as well as other mechanical devices. Shapes, such as cubic shapes, may be used for missiles.

Accordingly, it is to be understood that various changes may be made in the invention without departing from the spirit and scope thereof and the invention is not limited by that which is shown in the drawings and described in the specification but only as indicated in the appended claims.

I claim:

1. In a game apparatus, a base, a plurality of inverted J-shaped guide rods each having long and short legs with a curved portion therebetween, said guide rods connected to and extending upwardly from the rearward portion of said base and joined together at the ends of their short legs to form a goal, cylindrical missiles each having a bearing hole for slidably mounting the missile on its respective guide rod, said bearing hole being concentric with the axis of rotation of said cylindrical missile, the length and diameter of said bearing hole being of predetermined dimensions to enable the smooth free gliding

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passage of said missile around the curved portion of said J-shaped guide rod, the outside diameters of said cylindrical missiles and the curvatures of said guide rods being operably related to enable all missiles to pass along the curved portion downwardly onto the short leg of their respective J-shaped guide rods and allow only the first missile to travel completely downwardly to the goal, the first missile arriving at said goal extending into and thereby blocking the path of travel of another of said missiles, missile projecting levers, horizontal pivot means pivotally mounting said levers on the base, each lever having a forward operating end and a rearward propelling end on which the cylindrical missile seats when on the long leg of its guide rod, each of said levers being provided in its rearward propelling end with an elongated slot through which one of said guide rods extends, a tilt bench, horizontal hinge means pivotally mounting said tilt bench on said base between said levers, said tilt bench being adapted to tilt forwardly and downwardly about its pivot towards the front of said base, one or more signaling cubes each of which has an indicating surface thereon being positioned on said tilt bench so as to be thrown off said tilt bench when tilted, said base having a cube pen positioned beneath said tilt bench to receive said cubes.

2. A game apparatus as defined in claim 1 wherein said horizontal hinge means for said tilt bench is mounted on said base transversely between said levers and rearwardly of the pivot means of said levers and forwardly of said guide rods, a flexible rod mounted on the back of said tilt bench extending over at least one of said levers to coact with the lever to tilt said tilt bench forwardly and downwardly about its pivot when said lever is actuated.

3. A game apparatus as defined in claim 2 and wherein each of said levers includes a camming post positioned to engage said flexible rod.

4. In a game apparatus requiring quick physical reaction to recognition of a starting signal, a plurality of game pieces, a common goal means, a guide means for each game piece having a starting zone,

independent substantially instantaneously operable projecting means for each game piece for causing said game piece to move with respect to its respective starting zone toward said common goal means, the guide means and game pieces being operably arranged with respect to said goal means to enable only the first game piece arriving at said goal means to assume a predetermined condition therein, the path of travel of each game piece being of such short length that the game piece moves from its starting zone to the goal means substantially instantaneously, whereby no player has an advantage other than his natural facilities of perception of the starting signal and quick reaction in the projection of his respective game piece.

5. In a game apparatus requiring quick physical reaction to recognition of a visual starting signal produced through chance,

a plurality of game pieces, a common goal means, a guide means for each piece having a starting zone, independent substantially instantaneously operable projecting means for each game piece for causing said game piece to move with respect to its respective starting zone toward said common goal means, each of said projecting means including a projecting lever, each guide means and its respective game piece being always in contact with each other, the guide means and game pieces being operably arranged with respect to said goal means to enable only the first game piece arriving at said goal means to assume a predetermined condition therein whereby the order of arrival of the game pieces will be established,

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the path of travel of each game piece being of such short length that the game piece moves from its starting zone to the goal means substantially instantaneously, whereby no player has an advantage other than his natural facilities of perception of the starting signal and quick reaction in the projection of his respective game piece.

6. In a game apparatus as defined in claim 4 each guide means being a rod, and each game piece having a bearing hole for slidable mounting on its respective rod. 10

7. In a game apparatus as defined in claim 4 and including a base, each of said projecting means including a projecting lever pivotally mounted on said base, each guide means being an inverted J-shaped guide rod having long and short legs with a curved portion therebetween, said guide rods connected to and extending upwardly from the base and joined together at the ends of their short legs to form said common goal means, each game piece having a bearing hole for slidable mounting on its respective guide rod. 15 20

8. In a game apparatus as defined in claim 7 and including a chance signaling device operable to produce the starting signal.

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9. In a game apparatus as defined in claim 8 and wherein said chance signaling device includes cubes and means for dumping said cubes, and wherein said base includes a cube pen for receiving said cubes when dumped.

5 10. In a game apparatus as defined in claim 9 and wherein said guide rods are removably connected to said base to enable removal for compact packaging.

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