June 4, 1935. J. A. KIMBALL 2,003,370

GAME APPARATUS

Filed Jan. 5, 1933 7 Sheets-Sheet 1

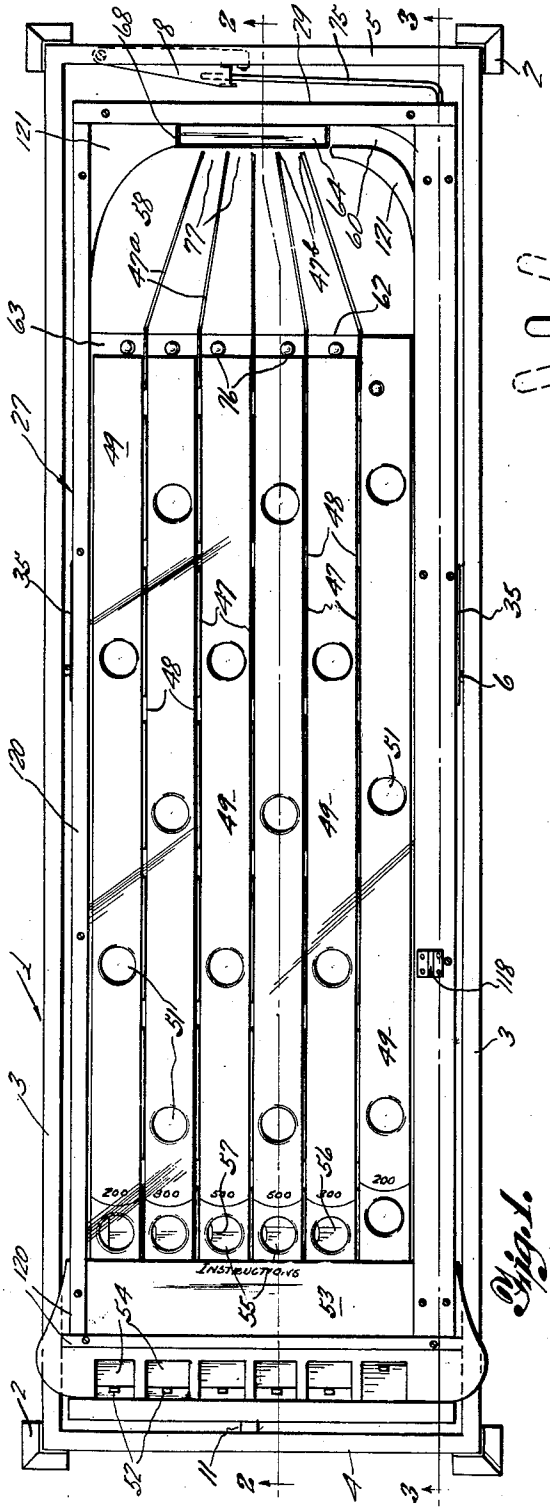


Fig. 1.

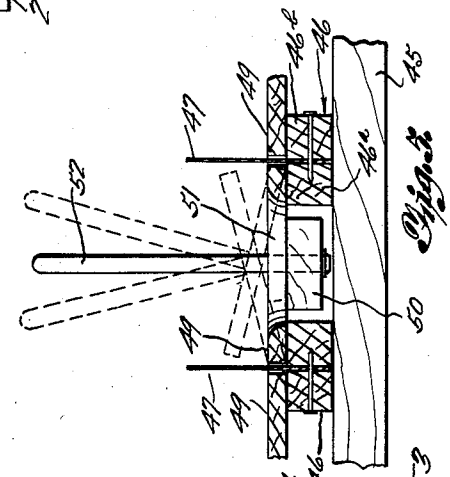


Fig. 3.

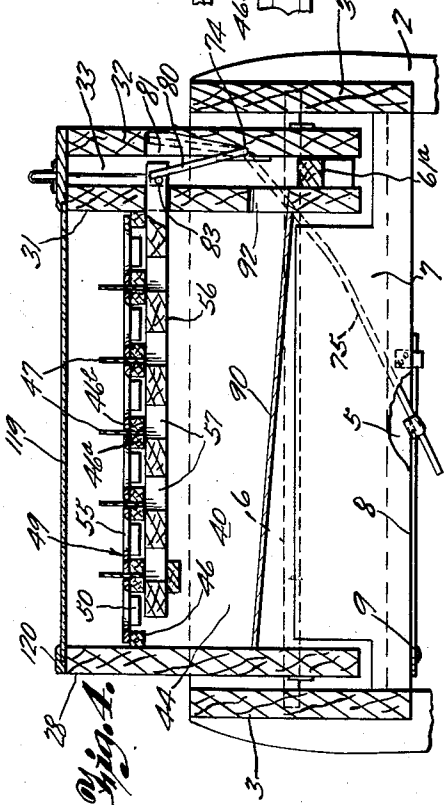


Fig. 4.

INVENTOR
JOHN A. KIMBALL
By Adam E. Fisher
ATTORNEY

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GAME APPARATUS

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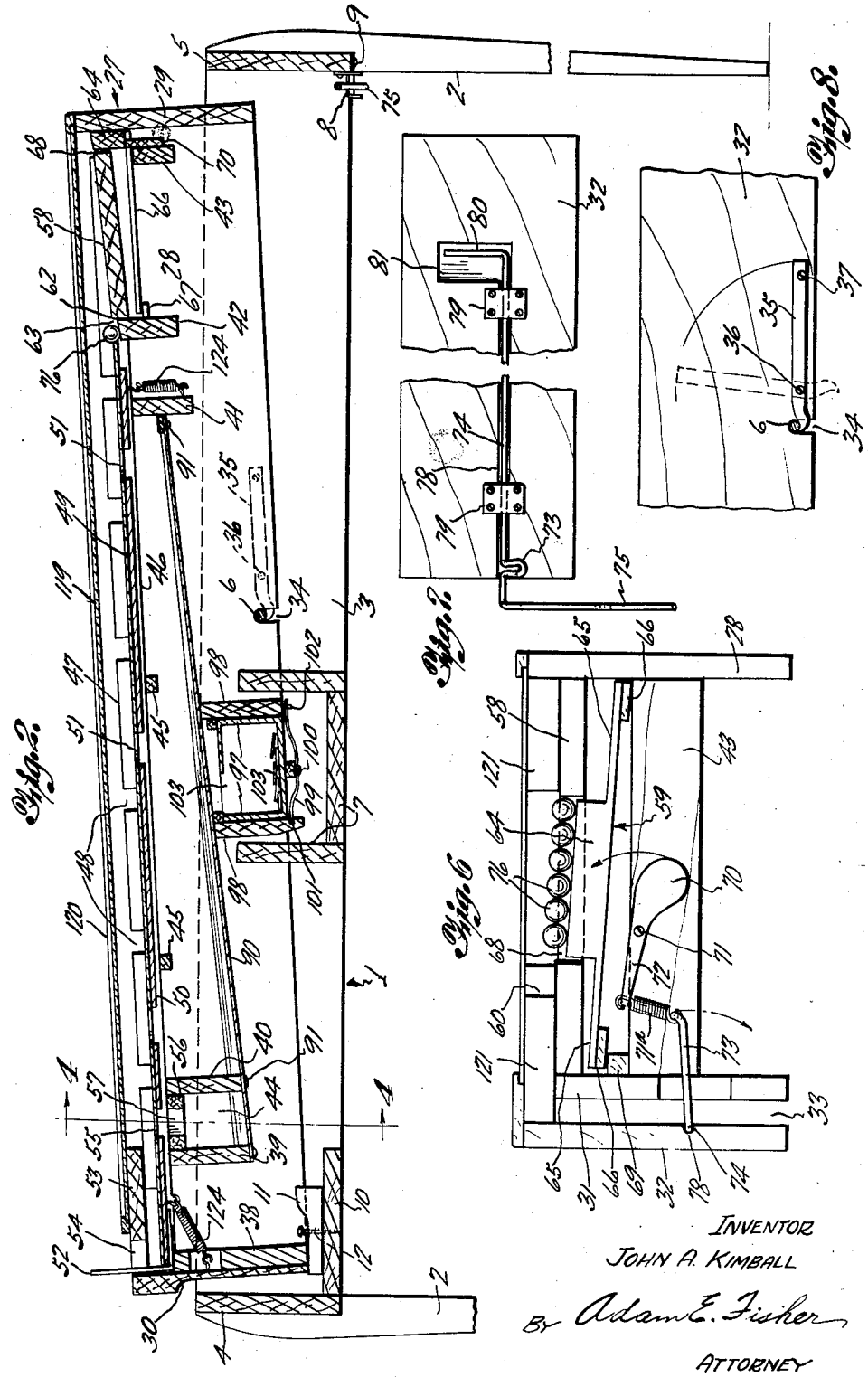


Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

INVENTOR
JOHN A. KIMBALL
By Adam E. Fisher
ATTORNEY

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GAME APPARATUS

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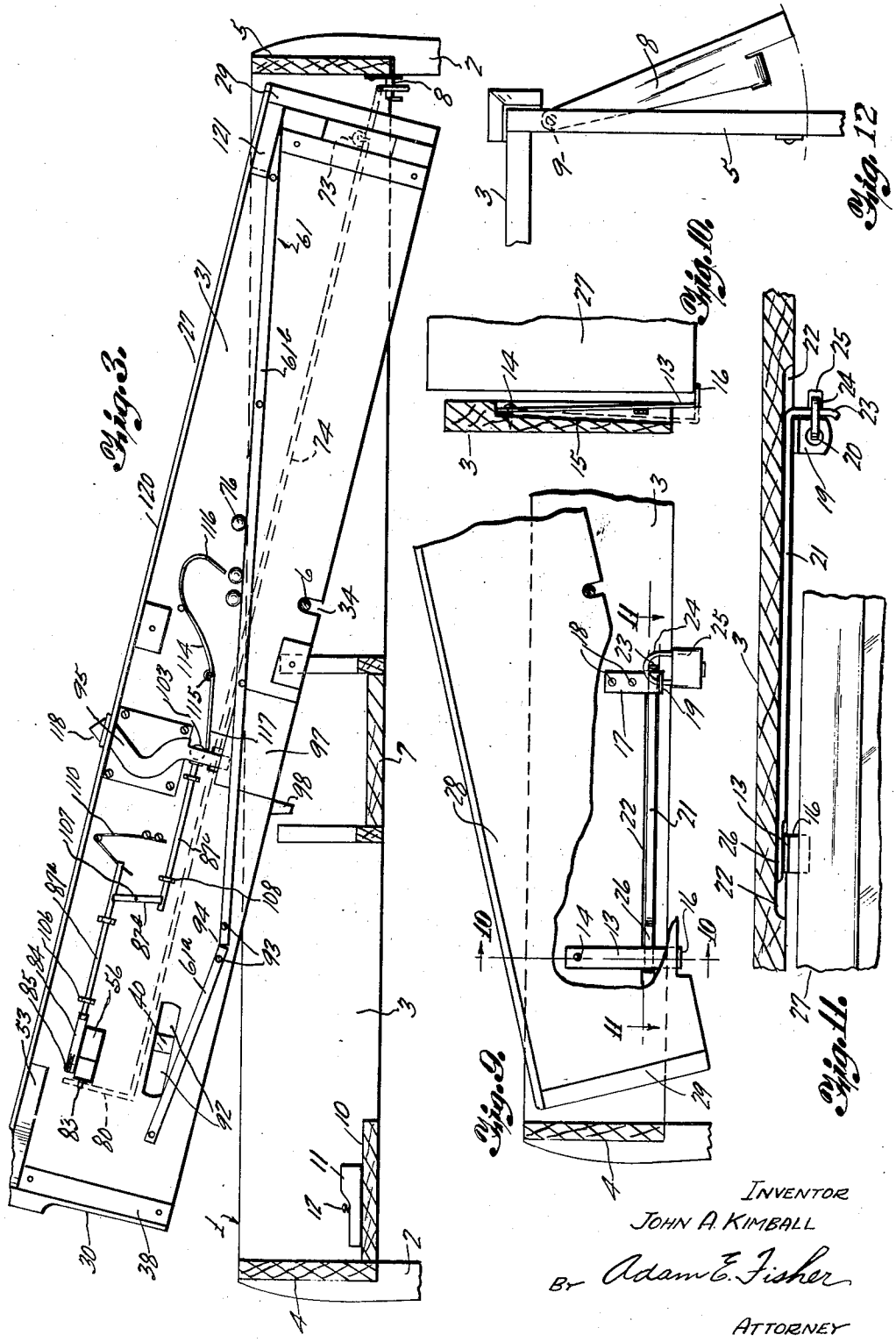


Fig. 3.

Fig. 12

Fig. 10.

Fig. 9.

Fig. 11.

INVENTOR
JOHN A. KIMBALL
By Adam E. Fisher
ATTORNEY

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GAME APPARATUS

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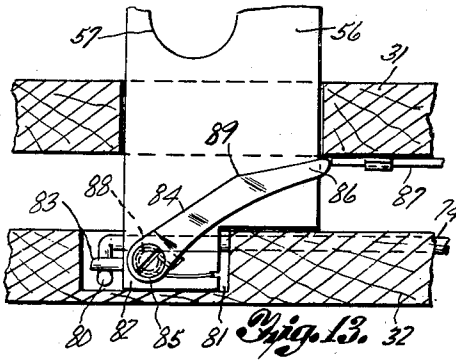


Fig. 13.

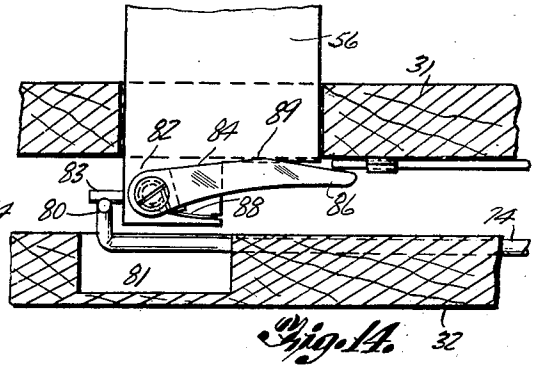


Fig. 14.

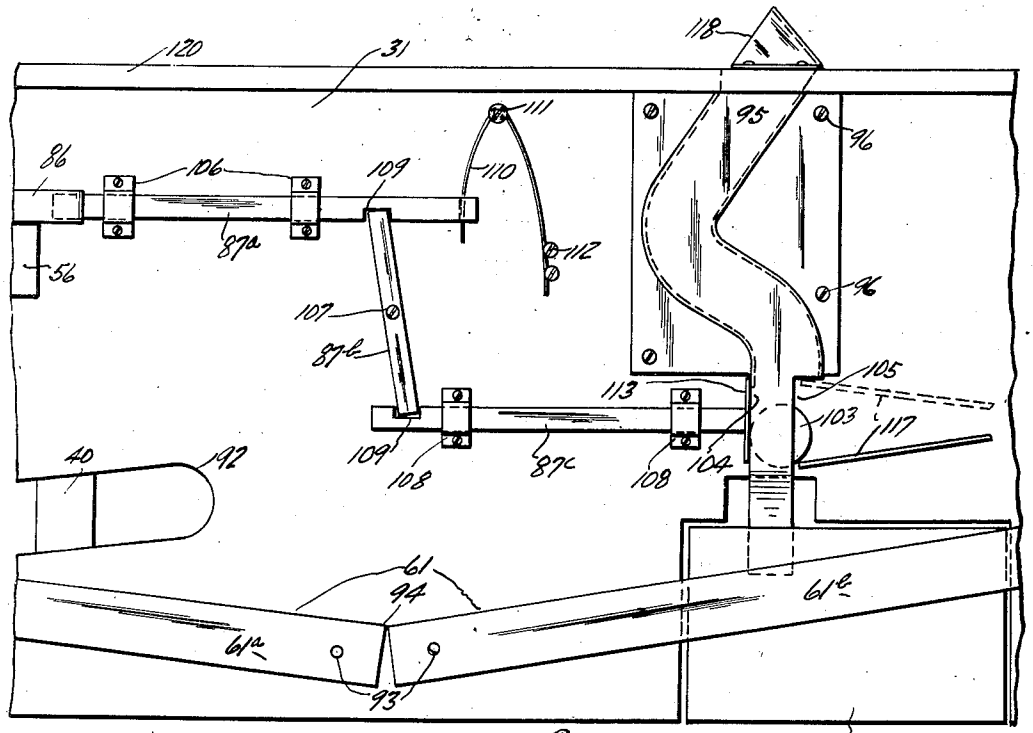


Fig. 15.

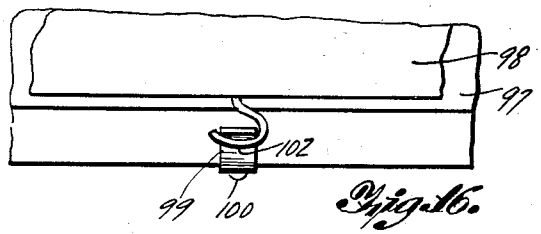


Fig. 16.

INVENTOR
JOHN A. KIMBALL
BY Adam E. Fisher
ATTORNEY

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GAME APPARATUS

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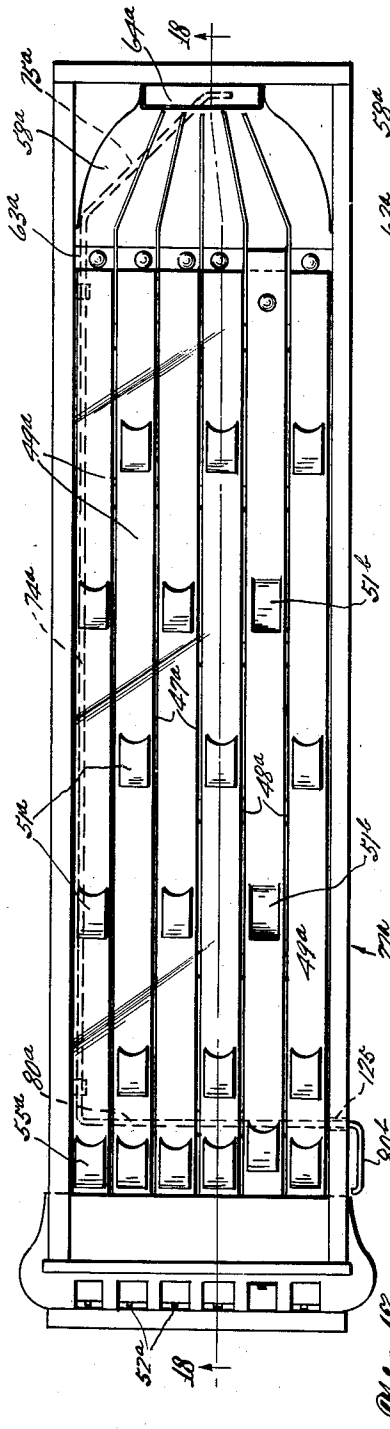


Fig. 17.

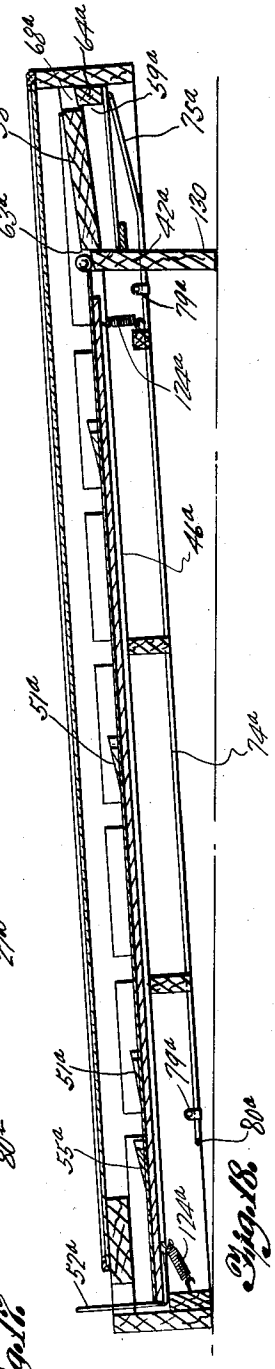


Fig. 18.

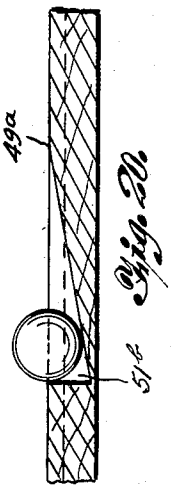


Fig. 20.

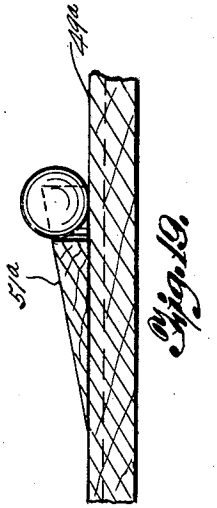


Fig. 19.

INVENTOR
JOHN A. KIMBALL
By Adam E. Fisher
ATTORNEY.

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GAME APPARATUS

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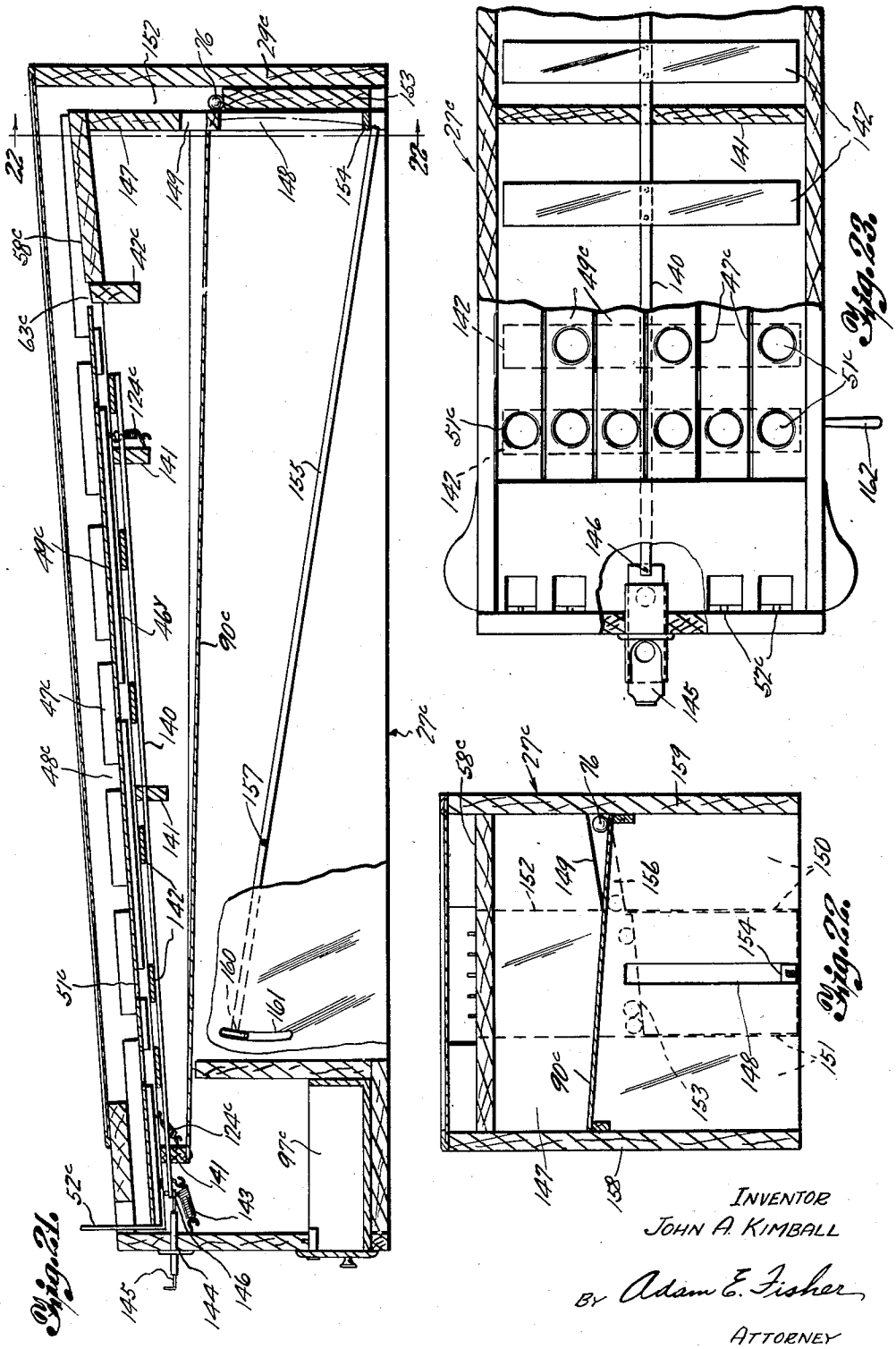


Fig. 21.

Fig. 23.

Fig. 22.

INVENTOR
JOHN A. KIMBALL
BY Adam E. Fisher
ATTORNEY

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GAME APPARATUS

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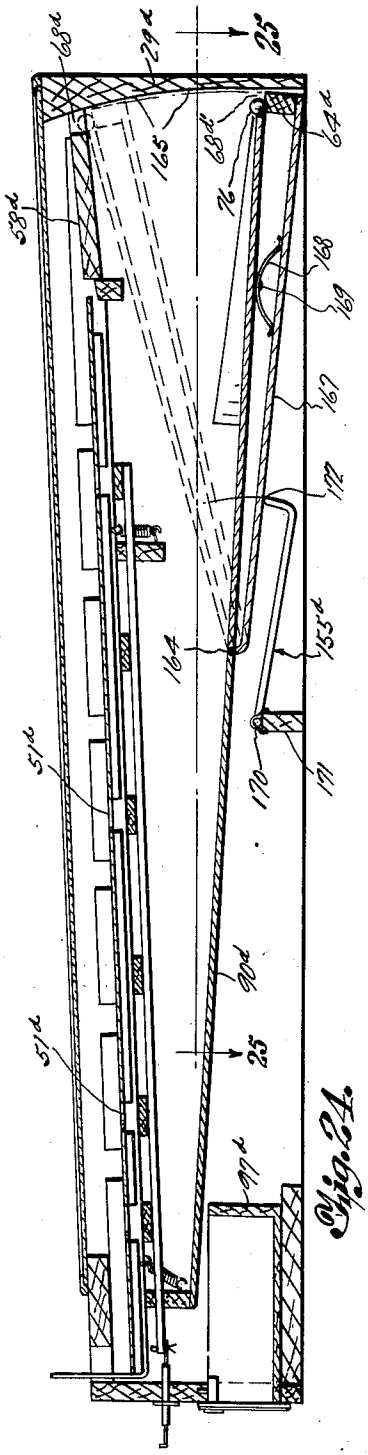


Fig. 2A.

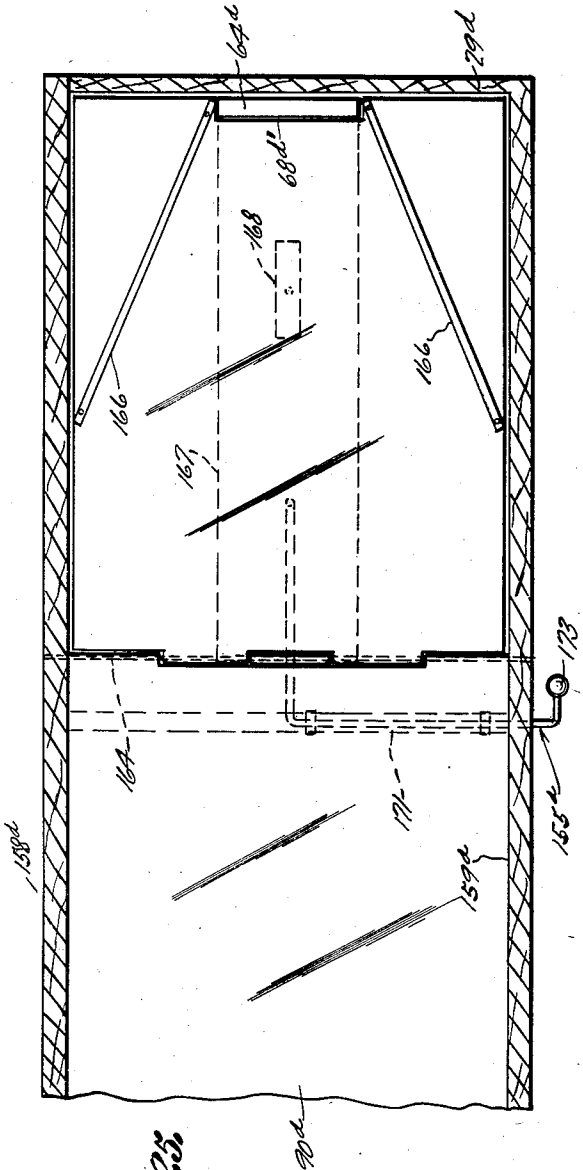


Fig. 2B.

INVENTOR
JOHN A. KIMBALL
BY Adam E. Fisher
ATTORNEY

Patented June 4, 1935 2,003,370

UNITED STATES PATENT OFFICE

2,003,370

GAME APPARATUS

John A. Kimball, Taylorville, Ill.

Application January 5, 1933, Serial No. 650,277

5 Claims. (Cl. 273—122)

This invention relates to games and game apparatus of the kind employing a marble play board, field, way or course and marbles for rolling thereover, there being provided a series of holes or pockets for the marbles to roll into and upon the relative values of which the scoring depends.

The prime object of the present invention is to provide a game apparatus of this kind, wherein the course of the marbles is not left entirely to chance but may be governed very largely by the skill of the players.

Another object is to provide in a game apparatus of this nature a form of marble play board or field made up of a plurality of flat shifter strips or slats assembled edge-wise, side by side, each being adapted for independent lateral or sidewise tilting for throwing the rolling marbles laterally from one slat to another in the course of the play, as may be required by the rules of the game for scoring purposes.

Another object is to provide in a marble game apparatus of the kind referred to a marble play board or field comprising a plurality of flat shifter strips or slats assembled edgewise, side by side, each slat having a number of hazards or marble traps arranged in spaced relation and each slat being free to tilt lateraly for rolling the marbles from one slat to another for avoiding the various hazards of the various slats, whereby the marbles may be finally brought to certain positions or pockets upon the board for scoring purposes.

Another object is to provide in a marble game apparatus of the kind referred to, a marble play board or play field normally inclined towards the player, whereby the marbles will normally roll from the opposite end of the board or field down towards the player and into scoring pockets or positions, the said marble board or field comprising a plurality of separate and independent shifter slats arranged edge-wise, side by side, each being adapted to independently tilt side-wise for the purpose of throwing the marbles laterally from one slat to another for avoiding hazards, or traps, with means for reconveying the marbles to the far end of the board after they are played down, means for aligning them up again at the far end for new plays, and means for starting the marbles down over the board or field from their line-up.

Another object is to provide in a game apparatus of the kind referred to, a marble play board or way normally inclined towards the player, the same comprising a plurality of independent shifter slats arranged edgewise, side by side, in a common plane, each being adapted to freely tilt laterally for throwing the marbles from slat to slat and also to slide lengthwise as means for starting the marbles from their line-up at the far or rear end of the board.

Another object is to provide in a game apparatus of the kind referred to, a marble play board or field or way, made up of a number of independent shifter slats arranged edgewise in a common plane and adapted both for lateral tilting movement and longitudinal sliding movement, the said slats being each provided with a number of spaced marble traps or hazards from end to end, the slats being separated by stationary and longitudinally spaced fence strips or sections immediately adjacent the hazards, whereby marble ports are provided between the ends of the fence strips at points intermediate the hazards, through which marbles may roll from one slat to another as the slats are tilted in the course of play, the said board being normally inclined towards the player, a distributor head at the opposite or rear end of the board for receiving and lining up the marbles for play, there being a transversely extended line-up recess between and formed by the forward margin of the distributor head and the aligned rear ends of the said slats, means for reconveying the marbles from the forward end of the apparatus, after they are played down over the board, back to the distributor head for replaying again, and means for lining them up again in the said line-up recess preliminary to playing them.

Another object is to provide in a game apparatus of the kind referred to, the combination of a stationary supporting frame, a tilting box or frame pivotally mounted therein and adapted normally to tilt down at its front or forward end to a position somewhat inclined below the rear end, a similarly inclined marble play board or field supported within the tilting frame and comprising a plurality of shifter slats provided with spaced hazards or marble traps, the slats being adapted each independently to tilt laterally or move longitudinally for controlling the course of marbles thereupon, the slats being separated by fence strips spaced longitudinally along between them, thereby providing marble ports through which the marbles may run laterally from slat to slat, a distributor head at the rear end of the tilting frame and marble board for receiving and lining up the marbles for play, a marble run-way fixedly mounted in the tilting frame and normally inclined downwardly similarly to the marble board, but adapted when reversely tilted with the tilting frame, to convey any marbles thereupon

back to the said distributor head for replaying, means for conveying the marbles to the run-way as and after they are played down over the marble board, a coin controlled marble stop mechanism arranged to control the rolling of marbles through the run-way towards the distributor head when the frame and run-way are tilted up at the front end for that purpose, the operation (and cyclic) of said mechanism and the consequent flow of the marbles depending upon the insertion of a coin and the subsequent tilting up and then back down again, of the tilting frame.

Another object is to provide in a game apparatus of the kind referred to, a tiltable marble play board, a marble run-way into which the marbles may run from the board after they are played thereover, a coin controlled marble stop mechanism for controlling the flow of marbles through the run-way, the operation and successive resetting of the said mechanism depending both upon the insertion of a coin and the subsequent tilting up and back again of the said marble board.

With the foregoing and such additional objects and advantages in view as may be developed in the course of the following specification, attention is now directed to the accompanying drawings as exemplifying certain practical embodiments of the invention, and which constitute a part of this specification, and wherein

Figure 1 is a plan view of one preferred form of the game apparatus which constitutes the subject matter of the present invention.

Figure 2 is a section on the line 2—2 of Figure 1.

Figure 3 is a section on the line 3—3 of Figure 1.

Figure 4 is an enlarged section on the line 4—4 of Figure 2.

Figure 5 is an enlarged, fragmental and sectional detail showing in end view an assembly comprising one of the tiltable shifter slats, lateral fence strips and supporting elements therefor.

Figure 6 is a view looking forwardly at the rear end of the tilting frame constituting an improved part of the embodiment now being described, the outer end plate or board of the tilting frame being removed to show the parts, including the marble elevator.

Figure 7 is an inside view or elevation of the side board of the tilting frame, an end view thereof appearing at the left in Figure 6, the said board carrying the operating rod controlling the marble elevator and other elements, a medial part of the said board and rod being shown as broken out.

Figure 8 is a detail of one of the latches for releasably securing the inner tilting frame to the outer supporting stand or frame, a pair of these latches being pivoted upon the side boards or plates of the tilting frame in transverse alignment, and adapted to engage a cross rod of the outer frame, the cross rod being shown in section and a medial fragment only of one of the side boards being shown.

Figure 9 is an enlarged detail of the locking mechanism for locking the inner tilting frame to the outer supporting frame, to prevent unauthorized access to the money box mounted at the under side of the tilting frame.

Figure 10 is a section on the line 10—10 of Figure 9.

Figure 11 is a section on the line 11—11 of Figure 9.

Figure 12 is an enlarged detail in plan of the contact bracket for the rear end of the operating rod, the same being shown pivotally attached to the under edge of the end plate or board of the outer frame, a fragment of the latter being shown.

Figures 13 and 14 are details in enlarged plan view of the outer end of the pocket shutter or slide, as slidably mounted through the front end of the tilting frame or box immediately below the marble scoring pockets (not shown in these views), showing the coin stop-lever operating trigger pivoted thereto. In Figure 13, this trigger is shown in its position as automatically assumed as the front end of the tilting frame is elevated, as shown in Figure 3. In Figure 14, the trigger is shown in the position it assumes as the front end of the tilting frame is again lowered to the position shown in Figure 2.

Figure 15 is a side elevation upon a greatly enlarged scale of a section of the inner side board or plate at the right hand side of the tilting frame and showing in detail the marble run-way, the forward end of the marble stop lever, the coin chute, and the spring-set coin stop levers.

Figure 16 is a detail in side elevation of a lower fragment of the coin box as supported in place under the tilting frame by means of a turn latch engaging cross pieces on the frame.

Figure 17 is a plan view of a modified and simplified structure or form of game apparatus, wherein the supporting frame is dispensed with, the apparatus being set upon any ordinary table and tilted at the forward end as desired for running the marbles back for realignment at the rear end. The separate marble run-way is dispensed with and forms of hazards are provided upon the shifter slats which permit the returning of the marbles back over the marble board itself. The coin controlled mechanism is also dispensed with.

Figure 18 is a section on the line 18—18 in Figure 17.

Figures 19 and 20 are enlarged detail views of two forms of hazards usable upon the forms of marble board shown in Figures 17 and 18, for permitting the direct return of the marbles over the boards, thereby dispensing with return chutes.

Figure 21 is a longitudinal vertical section through yet another form of apparatus, showing two reversely inclined marble decks or boards, the upper board constituting the marble play board proper and the lower constituting the return board for reconveying the marbles to the rear end of the structure for replaying.

Figure 22 is a section on the line 22—22 of Figure 21.

Figure 23 is a plan view of the forward portion of the form of apparatus represented in Figures 21 and 22, the rearward portion of the upper marble play board being further broken away to show the underlying structures.

Figure 24 is a longitudinal, vertical section through the final form of the apparatus as herein shown and described, the same being in fact more particularly a variation from the form or embodiment of Figures 21, 22 and 23.

Figure 25 is a section on the line 25—25 of Figure 24.

As exemplified in Figures 1 to 16 inclusive, the invention comprises a stationary, elongated, rectangular supporting frame 1 mounted upon legs 2 and including side plates or boards 3, a front end plate 4 and a rear end plate 5. A pivot rod 6 is extended transversely through this frame a little rearwardly of the center, and has its ends anchored in the side plates 3. A money box housing 7 is likewise extended transversely of the frame forwardly of the rod 6, its ends being also secured

to the side plates, this housing being left open at its upper side. An operating rod or lever contact bracket 8 is pivoted at 9 to the under side of the rear end plate 5, and a stop plate 10 is extended across the forward end of the frame at the under side thereof, having its ends secured to the side plates. A tilt regulator block 11 is pivoted at 12 medially at the upper side of the plate 10, the same being larger at one end than the other, as shown.

A stop hanger 13 is hinged at 14 to the inner face of the right hand plate 3, near the rear end thereof within a recess 15 formed therein, and extending down ends in an inwardly turned stop foot 16 which may be thus swung inwardly or outwardly upon the hinge 14. Forwardly of the hanger 13, a lock bracket 17 is secured at 18 to the plate 3 and has an inwardly turned foot 19 pierced with a hole 20. A flat lock bar 21 is slidably extended within a longitudinal recess 22 formed in the inner face of the right hand plate 3 between the hanger recess 15 with which it communicates, and the lock bracket 17 which overlies the forward end of the recess 22, the bar 21 passing back of the bracket 17 and ending in an inturned foot 23 adapted to coact with the apertured foot 19 of the bracket 17 for engaging the looped bolt 24 of a padlock 25. The bar 21 is long enough that its rear end 26 may slide back of the lower part of the hanger 13 when the latter is swung outwardly from its recess 15, thus locking the foot 16 to its out-thrust position for a purpose which will be later pointed out. Obviously, too, when the padlock is removed, the bar 21 may be slid forwardly and the foot 16 may then be swung back. An elongated, rectangular tilting box or frame 27 is tiltably mounted within the frame 1. The frame 27 comprises a left side plate 28, a rear end plate 29, front end plate 30, and two spaced apart, right side plates 31 and 32, which may be referred to as inner and outer side plates. The terms "right" and "left" as herein used, have reference to the operator standing at the front end of the apparatus as indicated by the end plates 4 and 30 and looking rearwardly towards the plates 5 and 29. The end plates are preferably made long enough to cover the ends of the side plates 28, 31, 32, leaving the working space 33 between the plates 31 and 32. The inner frame 27 is notched or slotted in transverse alignment, as shown at 34, at points upon the lower edges of the side plates thereof somewhat rearwardly of the center and so as to substantially register with the pivot rod 6 of the frame 1. The frame 27 is thus pivotally mounted within the frame 1 by positioning the notches or slots 34 over the rod 6. In this position the forward end of the frame 27 will normally tilt down upon the block 11, and the degree of such tilt may be regulated somewhat by reversing the block 11 end for end. At the opposite end of the apparatus the foot 16 of the hanger 13, while in its out-thrust position already referred to, will serve to limit the downward tilt of the rear end of the frame 27, the arrangement being such that the said frame may have such normal tilting radius or movement as may be necessary for the intended operation of the game and as will be later described. The frame 27 may be locked to the rod 6 by means of hooked latches 35 pivoted at 36 to the outer faces of the side plates 28 and 32 and adapted to close over the notches 34, as clearly shown in Figure 8. By passing screws 37 through the ends of the latches into the plates, the two frames may be securely locked together. Six major cross braces or supports 38, 39, 40, 41, 42, 43, are extended across the upper portion of the frame 27, their ends being secured to the side plates 28, 31, with the upper edges of all except the rearmost brace 43, aligned in a common plane somewhat below the upper edges of the frame itself. The first named support 38 is mounted at the extreme forward end of the frame and serves also to reinforce the end plate 30 thereat. The next two supports 39 and 40 are spaced somewhat back of the support 38 and are themselves spaced apart to provide a marble-way 44. The next or fourth support 41 is spaced substantially rearwardly towards the rear end of the frame, as shown in Figure 2. The remaining supports 42, 43, are located in spaced relation at the rear end of the frame, the support 42 being also spaced from the support 41, as shown. A number of minor cross supports 45 may also be provided if desired. A marble play board or field is arranged at the upper sides or edges of the cross supports including the supports 38 and 41, the same comprising a plurality of stationary, longitudinally extended and transversely and regularly spaced bearing strips or slides 46 for the shifter slats to slide upon in manner later to be described. Thin fence strips 47 of sheet metal or the like are set upright in longitudinal alignment along the median lines of the several slides 46 and these fence strips are also spaced apart longitudinally, so as to provide marble ports 48 between their ends. As shown in Figure 5, the strips or slides 46 may be each made up of two halves 46*a*, 46*b*, holding the fence strips 47 pinned between them. A plurality of thin, flat shifter slats 49 are mounted for longitudinal sliding movement between the several sets of longitudinally aligned fence strips 47, the slats being of a length to extend from the end support 38 to the forward edge of the rearwardly spaced support 41, and being reinforced at their under sides by the added center strips 50, as shown in Figures 2, 4 and 5. A plurality of marble trap holes or hazards 51 are formed through the slats 49 and strips 50, the same being arranged in spaced relation from end to end of the slats, and being preferably so disposed as to fall oppositely to the fence strips 47 and not oppositely to the ports 48, as clearly shown in Figure 1, so as to enable marbles to be shifted from one shifter slat to another, through the fence or marble ports 48, without falling through the holes 51. The forward ends of the slats 49 carry upstanding operating pins 52, as shown in Figures 1 and 2. A cover plate 53 is mounted over the forward ends of the slats 49, the same having spaced recesses 54 along the forward margin to accommodate the pins 52 in the manipulation of the slats 49 and their longitudinal sliding and lateral tilting action, the plate 53 clearing the ends of the slats sufficiently to allow for such action. The slats 49 are resiliently held to their seats and to their forwardmost positions, by means of coil springs 124 connecting the ends of the slats with adjacent cross parts of the frame 27, the forward springs being angularly positioned as shown in Figure 2 for normally drawing the slats forwardly. Immediately back of the plate 53, a series of transversely aligned scoring holes or pockets 55 are formed through the slats 49, and immediately across the under side of these holes is slidably mounted a scoring hole shutter 56, the same sliding through the upper part of the marble-way 44, as shown in Figures 2, 3, 13 and 14. This shutter is also pierced with marble holes 57 adapted to register with the scoring holes 55 when the shutter is moved outwardly to the position shown in Figure 13, but closing over those holes when the shutter is moved

inwardly, as shown in Figure 14. A distributor head 58 is rigidly mounted at the rear end of the frame 27, the same being extended rearwardly from and somewhat above the upper edge of the cross brace 42 and being anchored at its ends to the side plates 28, 31, as shown in Figures 1, 2 and 6. This head is arranged substantially in the same plane with the upper marble play board, and the raised forward margin 62 forms in conjunction with the aligned rear ends of the shifter slats 49, which as stated normally extend only to the forward upper corner of the brace 42, a transversely extended marble aligning recess 63, which is inclosed at its rear side by the frame end plate 29, into which marbles may roll from the head 58 and become automatically aligned for playing. An elevator recess 68 is formed medially in the rear end of the head 58 for the reception of the block 64 of the marble elevator 59, as will later be described in detail. The head 58 is provided with a set of flaring fence strips 47*a* radially extending from the elevator 59 to and connecting with the main fence strips 47 which are extended rearwardly across the recess 63. Corner blocks 121 are mounted on the rear corners of the head 58, a curved or inturned marble run-way 60 being cut in the right hand block and leading out into the elevator recess 68, the curved run-way 60 being a continuation of the main marble run-way 61 later to be described. The marble elevator 59 comprises a relatively short block 64 having the laterally extended arms 65 and forwardly extended frame 66 which has a free bearing at its forward end upon a ledge 67 projected from the rear face of the cross brace 42. The block 64 is adapted to play up and down freely within the clearance 68 provided for it at the rear end of the distributor head 58 and in its lowered position, as shown in Figure 6, is in alignment with and forms a continuation of the inturned end 60 of the marble run-way 61, the adjacent end of the block 64 being held slightly raised by means of a prop 69 arranged upon the cross brace 43, whereby the marbles will readily run into place upon the lowered block. This elevator is raised and lowered by means of a cam 70 pivoted at 71 to the rear face of the brace 43 below the elevator, a spring 71*a* having an end secured to the cam arm 72 and the opposite end of the spring being connected with the rear, inturned loop 73 of the operating lever 74. After forming the loop 73, the inturned end of the lever 74 is extended angularly downward, as shown at 75, and passes slidably under the contact bracket 8 already referred to, whereby the spring 71*a* is normally drawn taut or tensioned when the forward end of the tilting frame 27 is lowered, thus turning the cam 70 up against the elevator 58 and raising same to the level of the distributor head 58, as shown in Figure 2, and allowing any marbles 76 to run off onto the head. The relation between the size or diameter of the marbles used and the spaces 77 separating the converged ends 47*b* of the fence strips 47*a*, and the length of the elevator block 64, is such that the block will just carry the entire number of marbles used with the apparatus, that is to say, a number equalling the number of shifter slats 49, and so that as the elevator is raised in manner described, the ends 47*b* of the strips 47*a* will exactly separate the marbles as they roll off of the block 64, thus directing a marble down over each of the shifter slats 49 between the fence strips 47. The main portion of the operating lever or rod 74 extends along within a groove 78 formed longitudinally in the inner face of the outer side plate 32 of the frame 27, being rotatably locked therein by screw plates 79. The forward end of this lever is turned upwardly as shown at 80 and disposed within a recess 81, a continuation and lateral enlargement of the groove 78, at a point laterally adjacent the outer extremity 82 of the shutter 56, which extremity is adapted to pass in and out of the recess 81, as best shown in Figures 13 and 14. A pin 83 is extended from the forward margin of this outer extremity of the shutter 56, athwart the upturned end 80 of the lever 74. Thus the inward movement of the lever end 80 caused by the rotation of the main lever rod 74 serves to force the shutter 56 inwardly. A coin stop mechanism operating trigger 84 is pivotally pinned, as shown at 85, to the upper side of the extremity 82 of the shutter 56, the inner end or toe 86 of the trigger having a sliding bearing upon the outer face of the inner side plate 31 rearwardly of the pivot point 85 and immediately in front of the forward end of the upper coin stop operating lever 87*a*. A spring 88 is coiled around the pin 85 and has its ends braced or anchored to the trigger and said extremity respectively, the spring being set and tensioned to normally project the shutter 56 outwardly to the position shown in Figure 13 and with the holes 57 of the shutter in registry with the scoring holes or pockets 55 and so that such of the marbles 76 as may run into those pockets, will then fall down through the holes of the shutter and into the marble-way 44 beneath. The trigger 84 is formed with an angle 89 medially of its length and upon the side adjacent the side plate 31, which coming in contact with the plate as the shutter 56 is pressed inward serves as a fulcrum against the plate, causing the toe 86 to snap out and over the end of the lever 87*a* as the frame 27 is lowered at its forward end, this action resulting from the shutter 56 being simultaneously pressed inward by the lever end 80, as clearly shown in Figure 14, the said lever being springset to normally slide forwardly, in manner later to be described.

Interiorly of the frame 27 and below the marble play board or field already described, is mounted a marble return board 90 which covers all the space between the side plates 28 and 31 and between the cross braces 39 and 41, being secured in place by nails 91 through its margins or in any conventional manner. This board 90 is inclined downwardly both towards the front end of the frame 27 and the right hand side thereof or towards that side carrying the operating lever 74, the braces 39 and 40 being tapered endwise for this purpose, as shown in Figure 2, so that the frame 27 in its normal or playing position, with its front end lowered as in Figure 2, marbles falling down through the trap holes 51 or through the pockets 55 and shutter holes 57, will roll out through the marble exit 92 provided for that purpose through the inner side plate 31 at the lower most point of the board 90, and onto the marble run-way 61 already referred to. This run-way comprises strips 61*a*, 61*b* angularly secured to the outer face of the inner side plate 31, by nails 93 or the like, in such relation as to form a marble pocket 94 at their abutting ends, the strip 61*b* being directed upwardly and rearwardly, as shown in Figures 3 and 15, and leading to the inturned portion of the run-way 60 already referred to. The outer side plate 32 constitutes the outer wall of the run-way 61, which leads rearwardly as stated and communicates with the inturned portion 60 leading onto the marble elevator 59. A coin chute 95 is fastened as shown

at 96 to the outer face of the inner plate 31, and leads down into a coin box 97, which is removably inserted within spaced cross pieces 98 mounted upon the under side of the marble board 90, being removably locked therein by means of a latch 99 rotatably pinned at 100 to the under side of the box, the ends of the latch when turned out being adapted to engage a slot 101 cut in one of the pieces 98 and a hook 102 mounted upon the other piece 98. The upper side of the box is left open for the removal of coins, such as represented at 103. Access is had to the under side of the frame 27 for the removal of the coin box, by removing the padlock 25, and drawing the end of the bar 21 from behind the hanger 13, allowing that hanger to swing back into its recess. The frame 27 may then be turned upside down upon the rod 6, thus bringing the coin box uppermost. The front and rear margins of the coin chute are cut away, forming aligned openings 104, 105, at a point immediately above the coin box 97 and above the marble run-way 61. A train of coin stop levers 87a, 87b, 87c, already referred to, are respectively slidably, pivotally and slidably mounted at 106, 107 and 108 upon the face of the plate 31 forwardly of the chute 95, the levers 87a and 87c being longitudinally extended in overlapping and vertically spaced relation as shown in Figure 15, and being operatively connected by means of the pivoted lever 87b having its ends engaging notches 109 cut in the ends of the levers. A looped spring 110 secured at 111 to the plate 31 and braced at its ends between a screw 112 and the rear end of the upper lever 87a, normally urges that lever 87a forwardly into contact with the aligned rear end or toe 86 of the trigger 84 in a manner heretofore pointed out, and of course simultaneously urges the lower lever 87c rearwardly. The lower lever 87c is horizontally aligned with the openings 104, 105 of the coin chute and the rear end of this lever carries a shoe 113 adapted to close over the adjacent opening 104 as the lever slides rearwardly through the action of the spring 110. A hooked marble stop lever 114 is pivoted at 115 to the plate 31, the rear hooked end 116 thereof slightly overbalancing the opposite straight end 117 which is disposed within the rear opening 105 of the coin chute. Thus the hooked end 116 normally falls down upon the run-way strip 61b in such manner as to prevent and stop the run of marbles rearwardly through the run-way even when the the frame 27 is tilted for that purpose. However, the arrangement is such and the mechanism is so nicely adjusted, that the weight of a coin 103 inserted into the coin chute through the mouth 118 thereof and falling upon the end 117 of the stop lever 114, will suffice to depress the end 117 and raise the hook 116, releasing the marbles 76 which will then roll rearwardly again and out upon the depressed elevator 59 when the front end of the frame 27 is raised for that purpose. The act of so raising the front end simultaneously turns the lever end 80 outwardly into the recess 82, thereby permitting the shutter 56 to move out under the action of the spring-set trigger 84, and permitting any marbles in the pockets 55 to escape into the run-way, in manner already set forth. During this time the operating coin 103 has remained poised upon the lever end 117, being held there by the shoe 113, and coincidently the toe 86 of the trigger 84 has been drawn forwardly and snaps down close to the plate 31 against the forward end of the lever 87a in readiness to shove that lever rearwardly coincidently with the lowering again of the front end of the frame 27. Therefore, as that end is lowered, the lever end 80 again forces the shutter 56 inwardly and simultaneously the lever toe 86 pushes the lever 87a rearwardly and the lever 87c and shoe 113 are drawn forwardly, thus releasing the coin 103 and allowing it to fall down into the coin box. A glass cover 119 is mounted upon the top of the tilting frame 27 and secured in place by marginal strips 120.

In the operation of this game apparatus as so far shown and described, the scoring pockets or holes 55 may be valued and numbered as may be desired or as indicated in Figure 1. Additionally, the margins of these pockets may be variously colored to correspond with the colors of the marbles used in play and added or increased scores given to the players who succeed in playing the colored marbles into pockets of the same color. Any such special rules or instructions may be printed upon the cover plate 53. The player first inserts a coin 103 in the coin chute 95. He may then raise the front end of the tilting frame 27 and run the marbles rearwardly and out onto the block 64 of the elevator 59 which at this time is depressed for the reasons hereinbefore stated. The player then lowers the front end of the frame 27, which act raises the elevator and allows the marbles to run out each through its separate fenced run-way down into the aligning recess 63. The upper edge of the block 64 is beveled off forwardly as shown to facilitate this action. The player then takes hold of the operating pins 52 one at a time, and by pushing same rearwardly causes the rear end of the slat 49 to push in under the marble 76 which rests at that end in the aligning recess, thereby raising the marble onto the slat and allowing it to run by gravity down that particular slat 49 and towards the first trap hole 51 thereon. Before it reaches and falls through that hole, the player by tilting the pin 52 laterally may cause the marble to run laterally through the adjacent marble port 48 and onto an adjacent slat 49. The marble then runs down that slat towards the next trap hole and the player may prevent its falling through same by then tilting the pin of that slat and causing the marble to run laterally through still another port onto the next adjacent slat 49, and so on repeatedly until the marble is either successfully landed in one of the scoring pockets 55, or falls through one of the trap holes 51 before reaching such pocket. Thus the game continues until all the marbles are played out from the aligning recess 63.

In Figures 17 to 20 are provided a modified form of game apparatus and modified forms of marble pockets and hazards, it being here contemplated that the marbles, after they are played down to the front end of the board, will be realigned at the rear end for replaying, by merely tilting the board up at the forward end, allowing the marbles to run back rearwardly over the play board itself. This action necessitates different forms of marble traps or hazards, than trap holes through which the marbles fall. The frame 27a takes the place of the frame 27, and is provided at its rear end with a cross brace 42a corresponding to the brace 42, except it is extended down through the under side of the structure to form a foot 130 serving to raise the rear end of the apparatus for running the marbles forwardly over the play board. This play board or field is constructed and arranged similarly to that of the first structure and as indicated by

shifter slats 49a. However, the marble traps or hazards as well as the scoring pockets, here take the form of marble stops 51a or 51b, the former being raised wedge-shaped stops tapering forwardly and the latter wedge-shaped depressions tapering rearwardly. In the use of either, it will be seen that while they will serve to stop the marbles in their forward course, they will not prevent them running rearwardly again. The distributor head 58a forms with the slat ends an aligning recess 63a atop the brace 42a. The marble elevator 59a carries a block 64a which plays into the recess 68a at the rear end of the head 58a. This elevator is operated by means of a hand lever 74a which is extended through supports 79a from end to end of the frame, the rear end being bent inward as shown at 75a and disposed under the elevator, the forward end 80a of the lever being also bent inward and extended across under the frame, out through a slot 125 formed through the side of the frame, and ending in the handle 80b. Raised scoring pockets 55a are provided at the forward ends of the shifter slats 49a. Springs 124a hold the slats to their seats. The provision of fence strips 47a, marble ports 48a, slide bearings 46x separate the fence strips and the shifter slats, and the latter are manipulated by means of the pins 52a, as set out in the description of the first apparatus. It is thought that the operation of this apparatus will be fully understood from the foregoing description taken in connection with the description of the apparatus shown in the Figures 1 to 16.

Still another form of the game apparatus is shown in Figures 21, 22, 23. In this form the entire casing frame or housing 27c remains stationary at all times. A marble play board or field is employed which is generally similar to the described boards of the preceding forms, in that they are made up of a plurality of shifter slats 49c slidably mounted upon slide strips 46y, where they are held by the springs 124c. The forward ends of these slats carry operating pins 52c and their rear ends are aligned at the forward upper corner of the cross brace 42c to form the forward margin of the marble aligning recess 63c, the rear margin being formed by the distributor head 58c. Similarly spaced fence strips 47c are arranged between the slats 49c, there being left the marble ports 48c between the ends of the fence sections. However, in this form all or any part of the trap holes 51c may be used as scoring pockets and may be numbered and colored as desired. In furtherance of such use, the holes 51c are arranged in longitudinally spaced, transversely extended rows, as shown in Figure 23, and a slidable shutter frame is provided and mounted immediately below the holes 51c. This frame comprises a flat bar 140 which is slidably mounted through cross braces 141 and carries upon its upper face a number of spaced cross slats 142 adapted to cover the under sides of the holes 51c when the frame is moved back to its front-most limit, so that marbles rolling down the play board and falling into the holes 51c will be held there for scoring purposes. However, by merely pushing this shutter frame rearwardly, the holes will be open so that any marbles resting therein will fall through and upon the marble return board 90c. A coil spring 143 normally draws the shutter frame forwardly to its hole closing position. A coin controlled mechanism 144 including an operating lever 145 of conventional structure, is mounted through the front end plate 30c and the inner end of this lever is connected, as shown at 146, with the forward end of the bar 140. Thus the insertion of a coin in the mechanism 144 enables the player to push back the shutter frame and release marbles for a new play, after which the spring 143 functions to draw the shutter frame forwardly again to its locked position at the under side of the holes, and the board is ready for use again. The marble return board 90c is tilted both rearwardly and laterally as shown, the forward end being secured to the cross braces 141 and the rear end connecting with the inner end plate 147, which is provided medially at its lower side with the elongated elevator rod slot 148, and laterally at a point immediately above the meeting line of the board 90c with the wedge-shaped marble aperture 149. The outer end plate 29c of this structure is spaced from the inner plate 147, and side blocks 150, 151, are mounted therein at each side, thereby forming a medial, vertical elevator way 152 in which is slidably mounted the elevator block 153 provided at its lower margin with the outstanding recessed stud 154 for engaging the rear end of the elevator operating rod 155, the said stud protruding into the slot 148. The side block 150 is provided with a marble slot 156 aligned with the aperture 149 at their outer ends. The marble slot 156 is inclined inwardly and downwardly and leads to the top of the elevator block 153. Thus marbles 76 rolling down the board 90c will roll through the aperture 149 and down the slot 156 onto the elevator 153, as shown. This elevator is raised and lowered by means of the operating rod 155 which extends forwardly and is rigidly connected at a point substantially spaced from its forward end to the pivot rod 157, the ends of which are journaled transversely in the opposite sides 158, 159 of the casing. The forward end 160 of the lever is extended out through a slot 161 in the side of the housing and ends in the handle 162. A mere downward pressure upon the handle serves to raise the elevator block 153 and marbles 76 to the level of the distributor board 58c over which they run and fall into the lining up recess 63c through the fence strips 47c in manner as already pointed out for the other forms of structure. The marbles are played from the lining up recess in the same manner as already described with reference to the preceding structures. The coin box 97c of this structure is mounted just inside the front end of the frame.

The embodiment of the apparatus represented in Figures 24 and 25 is substantially similar to that of Figures 21, 22, 23, except for the devices for elevating the marbles or balls to the play board or field after they have been played through the scoring holes 51d and fall upon the return board 90d. This board is made in two end sections hingedly connected by a hinge rod 164, the forward end of the board being fixed stationary and the rear end being tiltable up and down as represented in dotted lines in Figure 24, so that the rear margin describes an arc, the rear end plate 29d being arcuate upon its inner side on a vertical section, as shown at 165, so as to accurately and nicely accommodate the oscillatory movement of the rear end of the board 90d. This rear end of said board is also provided at its upper side with a pair of marble guide bars 166 which converge rearwardly to a marble recess 68d' adapted to register with the elevator recess 68d of the distributor head 58d. Immediately below the movable rear end of the board 90d, an elevator supporting strip 167 is mounted,

the forward end thereof being turned up and also hinged upon the rod 164 and the rear end being extended beneath the elevator recess 68d' of the movable rear end of the board 90d. An elevator block 64d is transversely mounted at the rear end of the strip 167 and adapted to freely pass into the recess 68d'. An arcuate leaf spring 168 is pinned at 169 to the under side of the rear end of the board 90d, the extremities of the spring being turned up and having a sliding bearing upon the strip 167. The action of this spring is normally to repel the strip 167 from the board 90d, thereby maintaining the marble recess 68d' substantially open for the inflow of the marbles 76. An angular operating rod 155d, in the nature of a bell crank lever, has one leg pivoted as shown at 170 upon the upper side of a block 171 extended transversely across between the sides 153d, 159d of the frame, the perpendicular leg thereof being extended rearwardly along the under side of the strip 167 and having a free bearing up against the strip as shown at 172. An end of the rod 155d is extended out through a side of the frame and continues in the form of an upright operating handle ending in the knob 173. In the use of this form of the apparatus, the marbles will roll down the board 90d into the recess 68d'. A forward pull upon the handle 173 elevates the strip 167 which carries the movable rear end of the board 90d and also the block 64d and marbles 76 up into the recess 68d of the head 58d. A further and relatively strong pull upon the handle then serves to force the block 64d on up through the recess 68d so that the marbles 76 will roll out and down over the distributor head 58d, in manner as heretofore pointed out in respect of the other forms of apparatus. In other respects than as above differentiated, this structure is substantially like that of Figures 21, 22, 23. It will be noted however, that by virtue of the hinged sections of the marble return board 90d, a shallower frame or box may be used than is the case with the other arrangement.

While I have herein shown and described certain forms and embodiments of my invention, it is understood that I am not limited in structural details to the various forms shown, but that the same may be varied as desired, within the scope of the appended claims. Also, while the invention is here referred to as a marble game apparatus, it is apparent that the same may be used with balls of larger size if desired, by constructing the apparatus accordingly. In fact, this game apparatus may be constructed to a size commensurate with bowling alleys and the same principles applied and used therein.

I claim:

1. In a game apparatus employing a spherical play element, supports, a number of rigid shifter slats arranged side by side thereon and forming a play field, each slat being independently adapted both for longitudinal sliding movement and lateral tilting movement as means for manipulating the play element positioned thereupon means for trapping the play element arranged upon the shifter slats, and fence sections arranged between the slats, the sections being spaced apart at their ends to provide ports for the play element to run through.

2. In a game apparatus employing a spherical play element, supports, a number of rigid shifter slats extended flat-wise side by side thereon and adapted each for independent longitudinal sliding movement and lateral tilting movement as means for manipulating and directing the play element positioned thereupon means for positioning the play element at one end of the slat assembly for transference to an adjacent slat through the longitudinal movement thereof, and fence strips arranged lengthwise between the slats for directing the course of the play element, there being ports thru the fence strips for permitting the play element to roll laterally from one slat to another.

3. In a game apparatus employing a spherical play element, a number of rigid shifter slats arranged side by side and forming a play field for the element to roll over fence strips between the slats for directing the course of the play element, automatic means for directing and stationing the play element at one end of the play field, means for trapping the play element arranged upon the slats, the slats being each independently slidable and tiltable for engaging the play element and manipulating and directing it to avoid the said trapping means.

4. In a game apparatus employing a number of spherical play elements, a number of rigid shifter slats assembled freely edgewise and forming a play field for the element to roll over means for trapping the play elements arranged upon the slats, fence sections between the slats, the sections being separated at their ends to provide ports for the play elements to run through from slat to slat, and automatic means for lining up the play elements at the rear end of the play field, the said slats being independently slidable lengthwise for picking up the play elements and being independently tiltable laterally for rolling them through the said ports from slat to slat.

5. In a game apparatus employing a definite number of co-equal, spherical play-elements, an inclined play-field for the elements to roll over by gravity, a distributing field at the upper side of and inclined towards the play field, a starting station transversely arranged at the upper margin of the distributing field, the starting station being formed to exactly contain the play elements in a straight line arrangement, fences extended from the starting station out over the distributing field to the play field, the ends of the fences at the starting station being each located exactly between two contiguous play elements as in their lined up positions, so as automatically to separate the play elements as they roll out from the starting station, and means for releasably retaining the play elements in the starting station.

JOHN A. KIMBALL.