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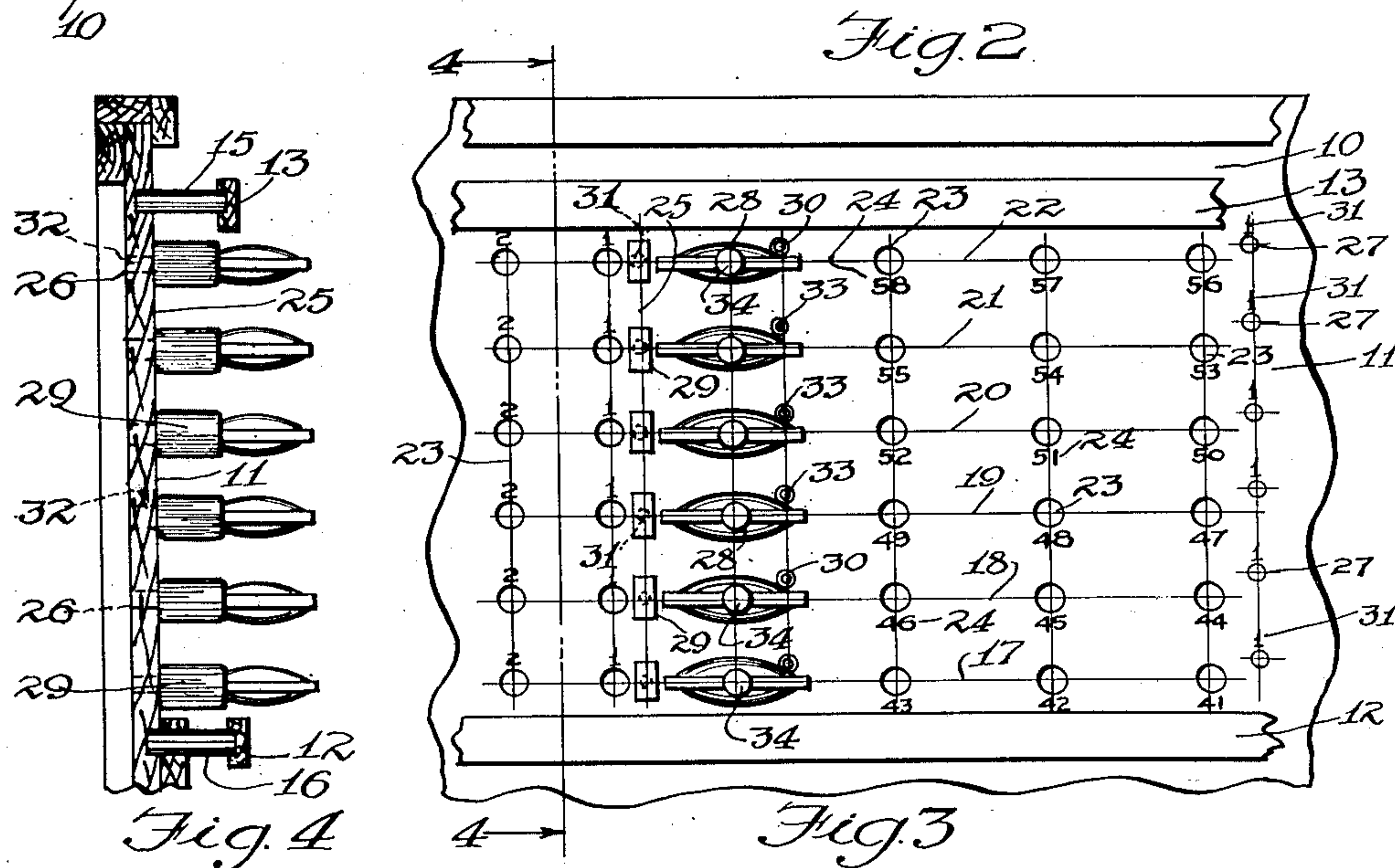
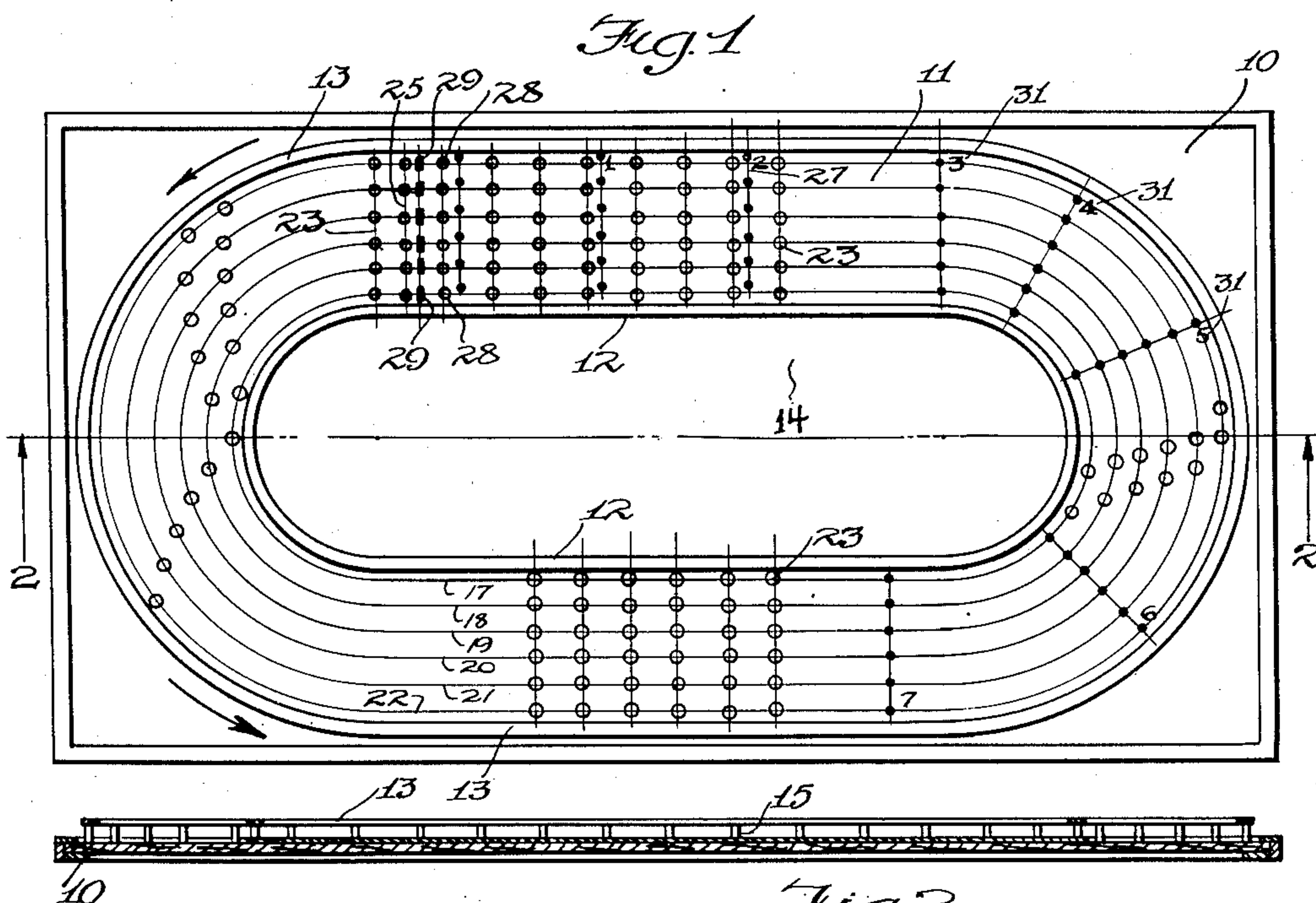
L. A. BACH ET AL

2,629,602

RACING GAME SCOREKEEPING DEVICE

Filed July 28, 1948

2 SHEETS—SHEET 1



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2 SHEETS—SHEET 2

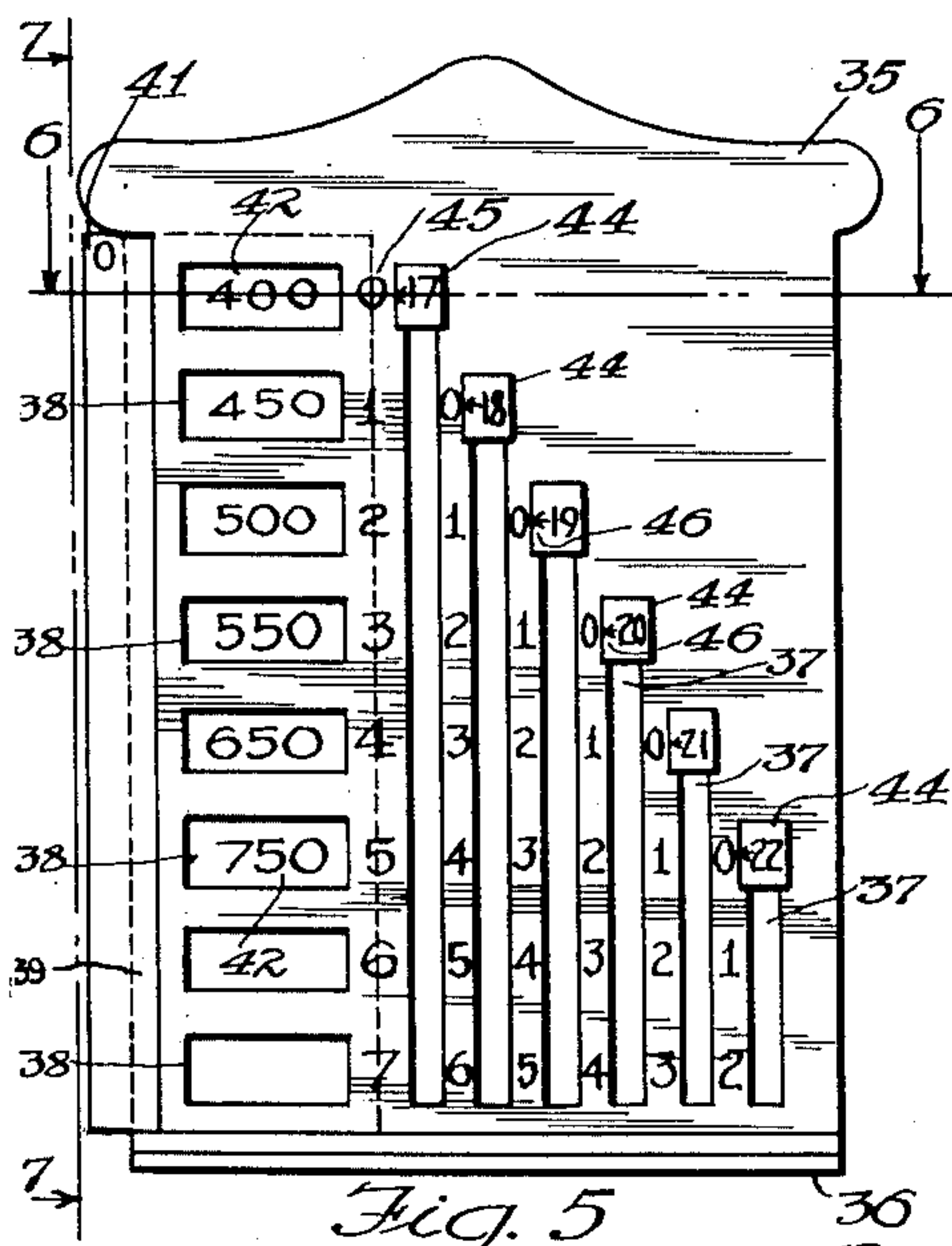


Fig. 5

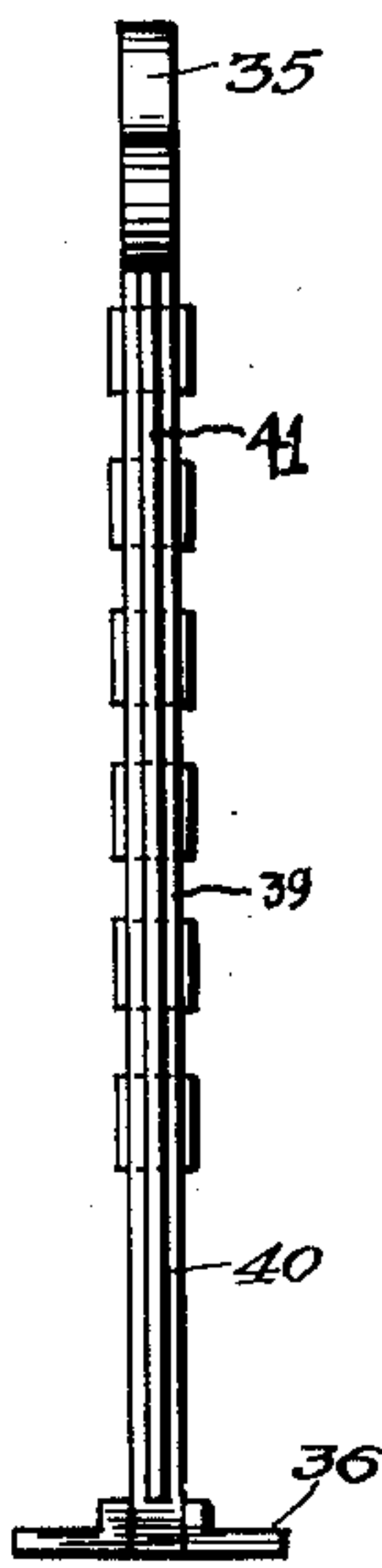


Fig. 7

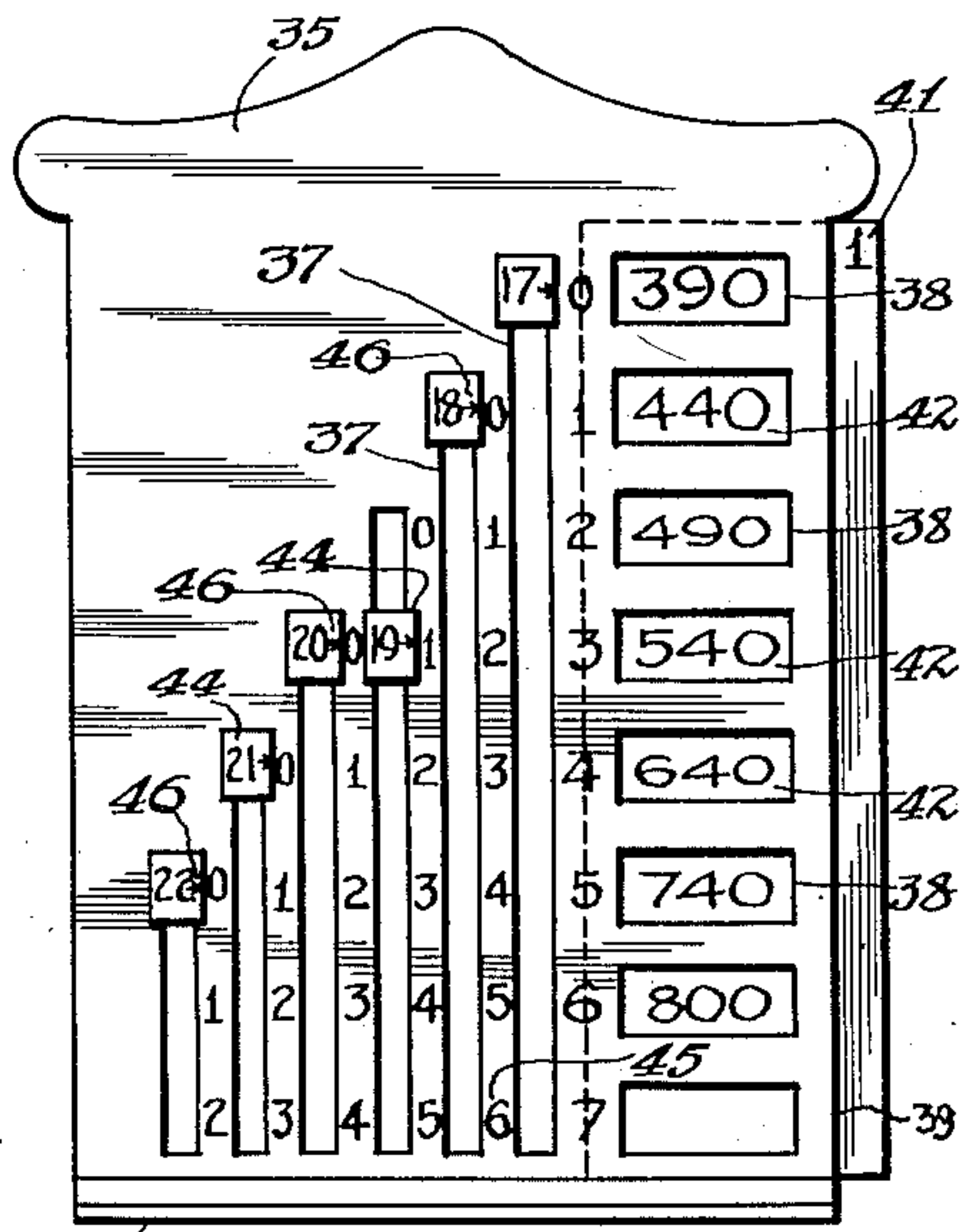


Fig. 9

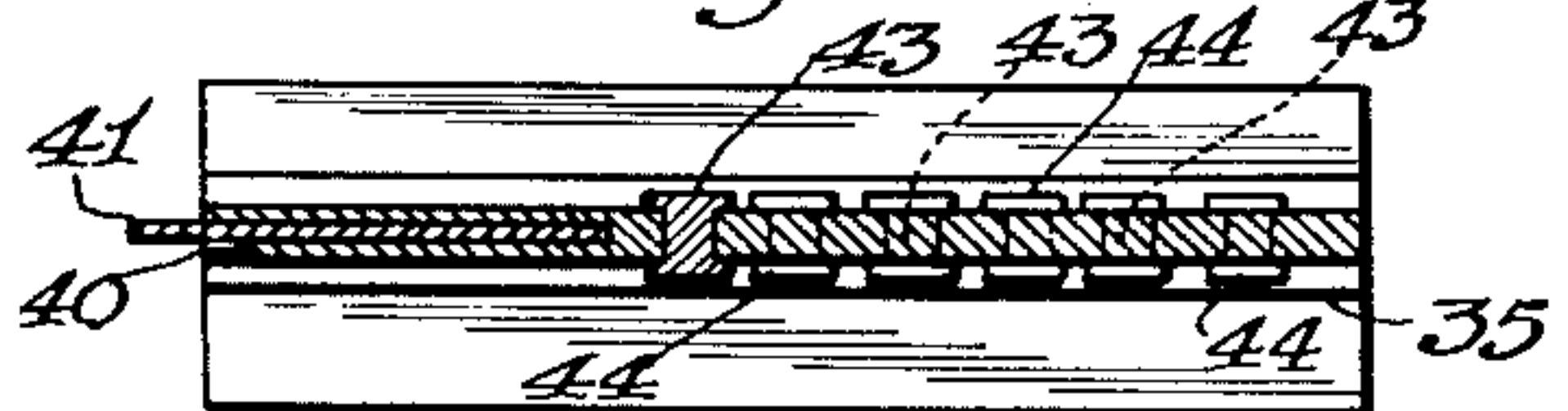


Fig. 6

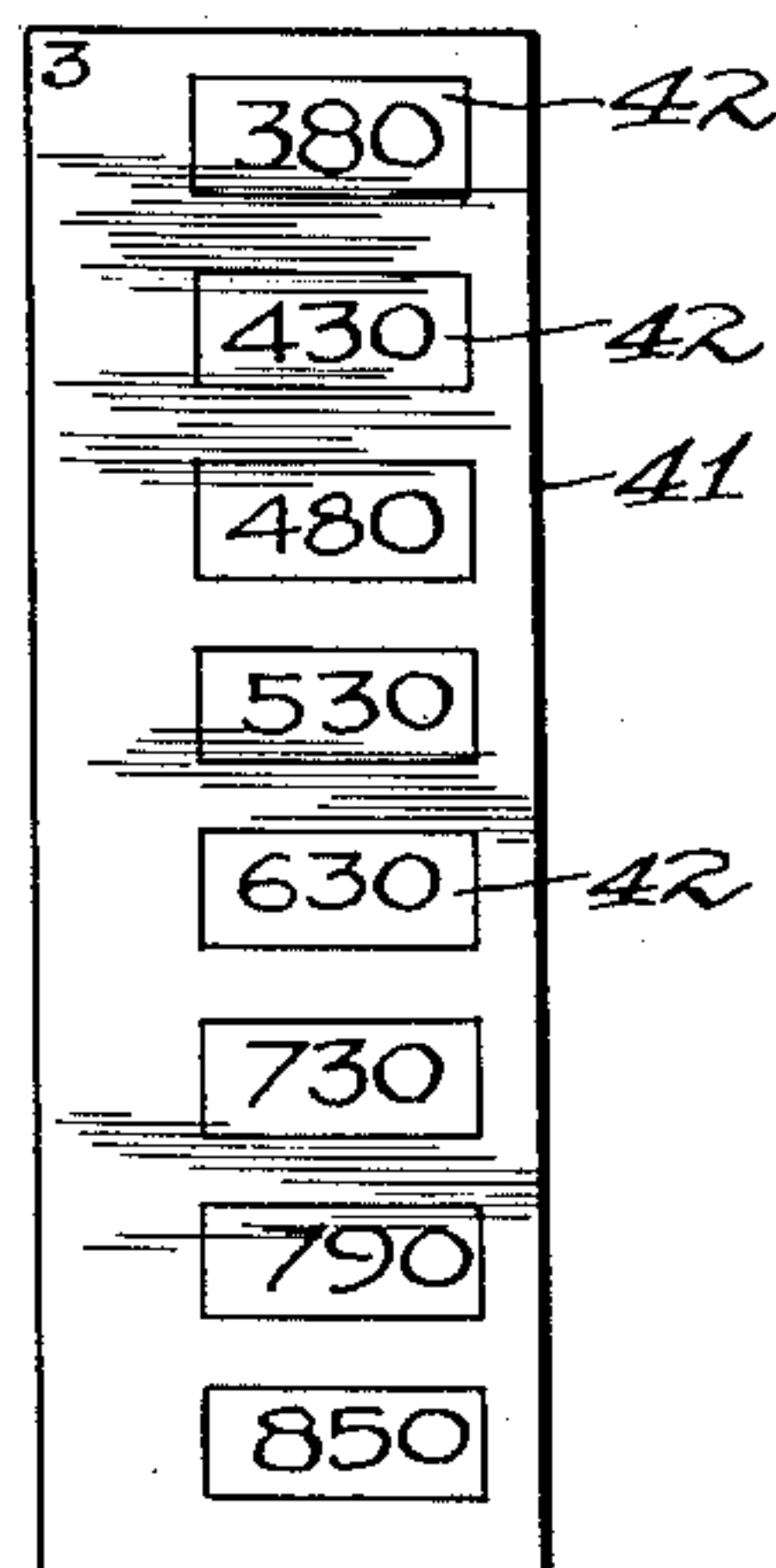


Fig. 8

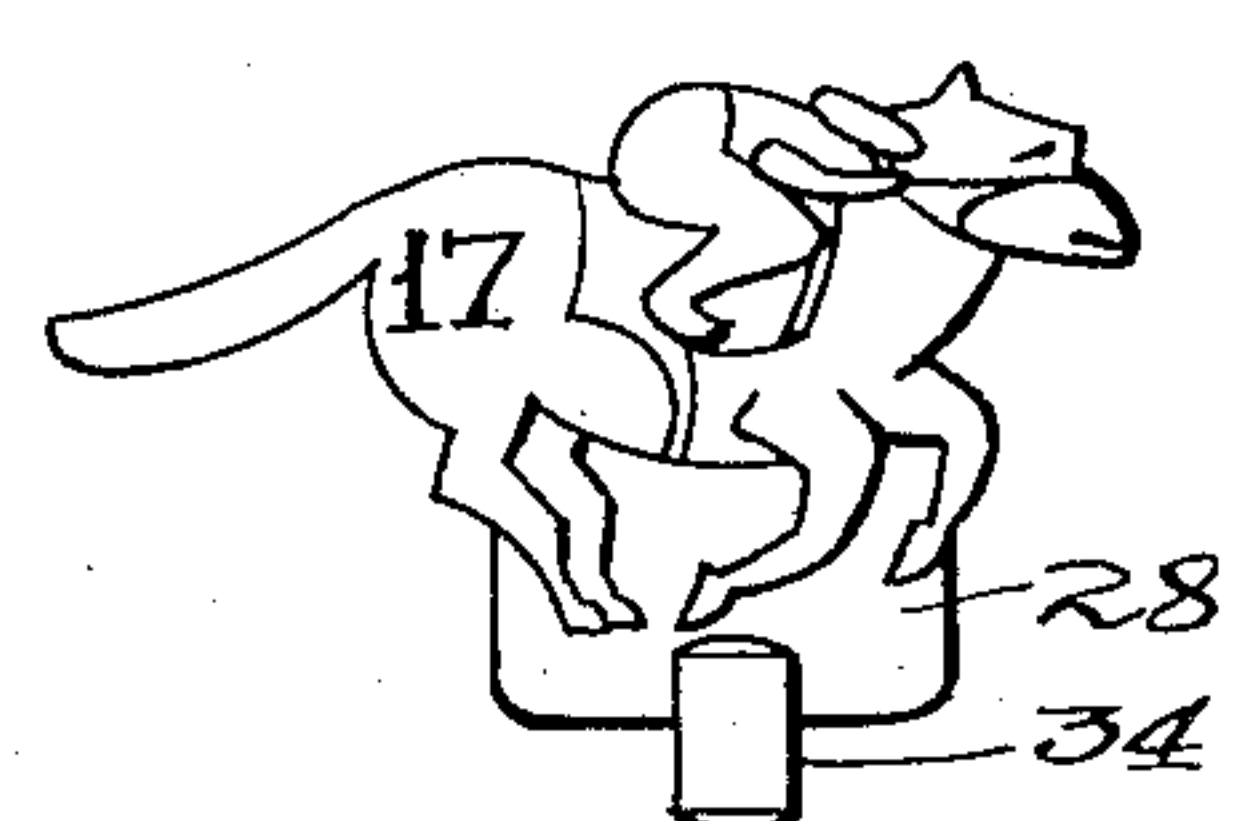


Fig. 10

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## UNITED STATES PATENT OFFICE

2,629,602

## RACING GAME SCOREKEEPING DEVICE

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4 Claims. (Cl. 273—148)

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This invention is directed to a new and novel game, which is played for amusement. However, coincident with its use as a game, our novel invention may be used in a variety of manners to demonstrate, in an effective manner, the operation of the law of probability.

One of the objects of this invention is to provide a game for amusement which, because of the variety of colorful pieces which may be used in playing the game, will attract and hold interest.

It is a further object of our invention to provide, in a game, a series of reference or record cards reference to which will disclose the relative probability of each colorful indicator or racer to win any given race, said reference card having thereon a series of numbers predetermined by a mathematical law.

Other and further objects of our invention will be apparent from the following description and appended claims.

One embodiment of our invention is demonstrated in the accompanying drawings bearing the numbers of reference referred to in the accompanying specification.

On the drawings:

Fig. 1 is a top plan view of one form of our invention with fragmentary portions thereof completed.

Fig. 2 is a sectional view taken substantially on the line 2—2 of Fig. 1.

Fig. 3 is an enlarged top detail view of a section of the track, taken in the area of the starting line.

Fig. 4 is a sectional view taken substantially on the line 4—4 of Fig. 3.

Fig. 5 is a plan view of one face of the record board.

Fig. 6 is a sectional view taken substantially on the line 6—6 of Fig. 5.

Fig. 7 is a view looking at the side edge of Fig. 5 having a slot therein for removably retaining the numbered cards.

Fig. 8 is an elevational view of one of the modified numbered cards.

Fig. 9 is a plan view of the face opposite that seen in Fig. 5 after one race has been won.

Fig. 10 is one illustration of the shapes which the racer may assume.

Referring to the drawings, numeral 10 represents a suitable base or supporting element such as a table top, which is supported by legs or any other suitable supporting members (not shown). Preferably integral with the base an elongated circular or ovalescent endless path or

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track surface or track 11 is defined by means of an inner limiting rail or fence 12 and an outer limiting rail or fence 13.

The inner limiting fence 12 is preferably an endless fence preferably disposing itself in the shape of an oval and inwardly and centrally of which is defined an ovate area 14. The inner rail or fence 12 is preferably disposed concentrically from the outer fence or rail 13, said fence 13 being also preferably endless and disposed in the configuration of an oval.

The inner rail 12 is elevated from the base 10 by a plurality of preferably uniform and preferably equally spaced apart pegs, posts, or support members 16 which are disposed in a path beneath or under the rail 12. Said rail 12 is securely and rigidly mounted on the top of said posts. Said posts 16, at the lowermost end thereof are secured to the top of the supporting element 10 in any appropriate manner.

The outer rail 13 is elevated from the base 10, and by means of posts, pegs, or other support members 15, to the upper ends of which said rail 13 is secured, said rail 13 being securely and rigidly held in the proper position. The posts 15 are preferably uniformly spaced in a path beneath the rail 13, each of said posts at the lowermost end thereof being rigidly secured to the top of the supporting base 10 in an appropriate manner, such as gluing said lowermost ends into appropriately positioned apertures, not shown, in the base 10.

The area 14 may optionally be used as the playing area or place in which the dice or other appropriate bodies are cast. (One method of play is to be hereinafter described.) The area, if used in said manner, may be optionally covered with an appropriate material such as felt.

In one embodiment of our game, 6 courses or paths 17, 18, 19, 20, 21, and 22 are preferably concentrically placed respectively between the inner fence 12 and the outer fence 13 so that the inner course or path 17 is of a lesser length than the adjacent path 18, and the outer path 22 is longer than the adjacent path or course 21, and so on, each progressively outer course being of greater length than the adjacent inner course and each progressing inward course being of a lesser length than the adjacent outer course. It is preferable that all of the courses vary in length from the respective adjacent courses by substantially a common linear factor. Thus, the track 11 will be provided with substantially equally spaced apart courses. It is not necessary, however, that the courses or the track be ovales-



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cent and endless, nor is it necessary that the courses be of varying lengths. For example, the same may be straight or arcuate. To clearly mark each of the courses and differentiate them from the other courses, it is preferable that each course be indicated and marked for the entire length thereof with a distinguishing color or indicia.

Each course has a plurality of preferably equally spaced apart apertures or holes 23, respectively, as illustrated in Figs. 1 and 3. The distance between the apertures 23 in course 17 is substantially the same as the distance between the apertures 23 in course 18, the distance between adjacent apertures 23 in any given course being substantially the same as the distance between the apertures 23 of any other course. Consequently, because the courses are of varying lengths and have substantially equally spaced apart apertures, each course has a different number of apertures. Course 17 has for example, forty-four apertures 23, course 18 has for example, forty-seven apertures 23, and so on, each course having, for example, three more apertures therein than the course inwardly adjacent thereto so that course 22 has for example, fifty-nine apertures 23 therein. As illustrated in Figs. 1 and 3 each hole or aperture 23 is marked with an adjacent numeral 24 in any suitable position, to enable the progress of the game to be easily evident, said numerals 24 progressing from "1" to the largest number of apertures in a given course, each aperture in any given course bearing the numeral corresponding to the number of apertures said aperture is from the starting line 25. Consequently, the numeral "1" in any course would indicate that the aperture is the first removed from the starting line 25, and a numeral, for example, "27" in any course would indicate that the aperture adjacent thereto is twenty-seven apertures from said starting line.

The starting line 25 may be arbitrarily placed but it is preferable that it be well marked, for example, with a black line. In the herein described embodiment of our invention, we employ the line 25 as both a starting line and a finish line. The apertures 23 in each course "forwardly" adjacent said line 25 are marked with a numeral "1", and those apertures 23 which are "rearwardly" adjacent said starting line are marked with a numeral 24 corresponding to the highest number of apertures in said given course.

Along the starting line, and positioned in the track in each of said courses 17, 18, 19, 20, 21, and 22 is an aperture or hole 26 which is preferably of a diameter smaller than that of the apertures 23. Adjacent preferably every third aperture 23 "rearwardly" from the line 25, in each of the courses 17, 18, 19, 20, 21, and 22 is an aperture or hole 27 which is preferably smaller than the aperture 26. Said apertures 27, are preferably numbered consecutively from the numeral "1" rearwardly from the starting line 25, said numerals being preferably encircled, as illustrated at 31, to distinguish said numerals 31 from the numerals 24 which mark the apertures 23.

The apertures 23 releasably retain the manually movable pieces or objects 28 which are the objects or elements which race against each other. The apertures 26 provide the means for releasably retaining the pegged starting gates 29, and the apertures 27 provide the means for releasably retaining the handicap markers 30.

It is to be observed that the apertures 23 need not be spaced equally apart; however, the num-

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ber of apertures in each course, said number of apertures representing the distance which each racing object 28 in a given course will travel, varies in accordance with a predetermined mathematical law.

As illustrated in Figs. 1, 3, and 4, numeral 29 represents the starting gates. Integral with each of said gates is a downwardly extending shank or post 32 which is adapted to be rigidly releasably retained in the apertures 26. When it is in position, each of the gates 29 is preferably disposed at a right angle to its respective course 17, 18, 19, 20, 21, and 22.

As illustrated in Fig. 3, each of the handicap markers 30 may be releasably and rigidly mounted in any of the apertures 27 by means of a downwardly extending slidable shank or post 33 which is integral with each of the respective handicap markers 30. There is preferably one handicap marker for each course.

As illustrated in Figs. 1 and 3, there are preferably six racers or racing objects or members or racing pieces 28. Each of said racers 28 will race on one course or path. Preferably each racer 28 is colored or indicated in a sufficient manner to make it easily apparent on which of the course 17, 18, 19, 20, 21, or 22 said racing piece will race. Said racing pieces are preferably mounted on an integral downwardly extending shank or post 34, which is adapted to be rigidly but releasably retained in the apertures 23. To make the game more colorful, the racing object or pieces 28 are preferably shaped to simulate a figure, such as a mounted horse, as illustrated in Fig. 10, or a fish, or dog. To provide the proper color to the game, it is preferable to provide the proper environment. So, if the racers are fish, the track 11 should be made to simulate a pool, and the dice or other polyhedral bodies which are cast (to be hereinafter described) should be made to simulate pebbles. The area 14 should also be used to appropriately supply the proper elements of environment and color.

Referring to Figs. 5, 6, 8, and 9, numeral 35 represents a vertical or upright member 35 or record board with an appropriate preferably integral base 36. A series of elongated vertically extending slots 37 are horizontally spaced in said member 35, as illustrated in Figs. 5 and 9, one of said slots 37 corresponding to each of the courses 17, 18, 19, 20, 21, and 22. A series of apertures or slots 38, are vertically disposed in a plane normal to the plane of the member 35 toward one lateral edge 39 of the member 35, said apertures being substantially equally spaced apart, as illustrated in Figs. 5 and 9.

The lateral edge 39 has a vertical slit or slot 40 therein which extends centrally to the central edge of the apertures 38. As illustrated in Figs. 5 and 6, the portion of the lateral edge 39 along one face of the slot 40 is preferably recessed. Said combination adapts said member 35 to releasably retain any one of a series of cards or thin members 41 between the faces of the upright member 35.

Numbers 42, the purpose of which will be hereafter described, are marked on each face of said card 41 so that said numbers are visible through the apertures 38. The cards 41 are of an adequate and appropriate size to snugly fit in the slot 40 without slipping out.

A slidable member or block 43 is positioned in each of the slots 37. Each of said members 43 is adapted to be frictionally retained by means



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of a flange 44 on each end thereof, said flanges normally frictionally abutting the respective faces of said member 35, as illustrated in Figs. 5, 6, 7, and 9. Each flange of each member 43 is preferably appropriately marked to correspond to the one of the courses which said slot 37 represents.

It is to be understood that the lengths of the slots 37 are preferably graduated inversely proportionately to the length of the course (number of apertures 23) which it represents, so that the slot representing the shortest course 17 is longest and that representing the longest course 22 is shortest. Preferably adjacent each of the slots 37 is a row of vertically disposed successively downwardly increasing numbers 45 which correspond to the number of races which have been won on each course. Said numbers 45 are preferably in substantially horizontal alignment with the vertically disposed apertures 38. Said arrangement results in the no races won on any course with an "0" in horizontal alignment with the highest of the apertures 38 for course 17, and an "0" in horizontal alignment with the sixth highest aperture 38 for course 22, and respective "0"'s in alignment with the respective intermediate apertures for the intermediate courses respectively as illustrated in Figs. 5 and 9. The numbers 45 are preferably positioned, as described, on both faces of the upright member 35.

As illustrated in Figs. 5 and 9, preferably each of the members 43, on each flange 44 thereof, has an arrow 46 adjacent each of the numbers on said flanges. Said arrows indicate the number of races which have been won on the respective courses for which said arrows act as indicators, said arrows being capable of being horizontally aligned with respect to the respective numbers 45 and the apertures 38.

As illustrated in Figs. 5, 7, and 9, there are a plurality of cards with numbers 42 thereon, said numbers being vertically disposed on both faces of said cards, so that when any of said cards 41 is inserted into the slot 40 in the upright member 35, each of said numbers 42 may be seen through one of the apertures 38. The numbers 42 on each of the cards 41 indicate the probability of any of the respective racing members 28 of winning the race. Said numbers 42 are preferably computed by using a formula based upon the law of probabilities.

It will be apparent that innumerable variations of the method of play are possible, and that the rules for playing may be greatly modified without departing from the concepts herein embraced. It should be understood that we anticipate these modifications.

We shall now describe one preferable method of play. Preferably six dice (not shown) are used. However, any polyhedral bodies or their equivalents may be used, and any number of dice may be used. Preferably one of the dice is a multiplying die, the remaining five being indicator dice. If the game played employs six racing members 28, the numbers on the five indicator dice will be used to designate which of the racers is to move, each of the six numbers on the dice representing a different racing member 28. The number of times any single numeral appears in a given cast or throw of the dice is multiplied by the number appearing on the multiplying die, and the racer 28, which said number of the indicator dice represents, is moved "forward" a corresponding number of apertures 23 from that

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aperture in which said racer is presently positioned.

In the one method of play we have chosen to describe, a given racer 28 will not be permitted to move "forward" unless the number which represents said racer appears at least twice in any given cast of the dice, or unless the number representing said racer is the only absent number in an arithmetic progression of numbers in which the number corresponding to all of the other racers 28 is present. For example, if the dice are cast and a "5" appears on the multiplying die, and the numbers "4," "4," "4," "2," and "5" appear on the indicator dice, the racer 28 represented by the numeral "4" will move  $3 \times 5$  or 15 apertures in the respective course, and none of the other racers will move; or if the dice are cast and a "6" appears on the multiplying die, and the numerals "1," "3," "4," "5," and "6" appear on the indicator dice, only the racer represented by the missing numeral "2" will move 6 apertures "forward" on the respective course. In this manner the dice are cast and recast until one of the racers has completed its respective course and becomes the winner.

It should be observed that if the herein described method of play is used, the probability of any racer 28 of winning a race would be the same as that of any other if the respective course which each of said racers were to run was the same length. However, by varying the lengths of the courses according to a predetermined mathematical law, the probability of each of said racers winning will vary accordingly.

As the game is begun, an appropriate card 41 is put into the slot 40. Each of the racers 28 is behind the starting line 25 on its respective course. Each of the members 43 is positioned so that the arrows 46 point to the "0" or no races won figure 45 for its respective course, as illustrated in Fig. 5. A handicap marker 30 is placed in the aperture 27 indicating the initial starting position on each course. Just before the first race begins the starting gates 29 are removed. Then, the dice are cast and movement of the racers occurs as described.

For the purpose of illustration, assuming the racer 28 on course 19 finished the race first, the probability of his winning may be determined by reading in the aperture 32 which is third from the top, and which is indicated by the arrow 46 on the flanges 44 of the member 43 representing said racer 28.

For the next race, the racer 28 on track 19, having won, must now be handicapped. The handicap marker 30 representing the racer 28 on course 19 will be moved "backward" to the next "rearward" aperture 27 for said marker so that said racer will now begin the new race with, for example, a distance of three more apertures 23 to travel in order to win. Since the courses preferably vary in length by three apertures, the probability of the racer on course 19 winning will be the same as for the racer 28 on the next longest course 20.

Before the start of the second race a different card 41 replaces the card 41, in the slot 40, which was used for the prior race. Because of the change in the distance each racer will have to go to win with respect to all of the others, the new card 41 for the second race will express the new probability of winning. For the second race the member 43 representing the racer on course 19 will be moved down so that the arrow 46 will indicate one race won as illustrated in Fig. 9.



The racer 28 on any given course which wins a race will preferably begin the next following race from a position 3 aperture 23 behind the aperture from which said racer began the race it won. Also each time a race is won by any given racer the slidable member representing the course on which the race is won will be moved down to indicate one additional race won on the respective course.

It is to be observed that the ratios and probabilities of winning changes after each race and an appropriate card 41 is preferably made up for each race in a game. Regardless of the racer which has won the prior race, the card for the following race will preferably be the same.

It should be noted that because of the method of handicapping used, all the gates 29 are preferably not removed at the start of any race except for the first in a series. Rather, the gates 29 are removed from the respective courses as the racer 28 on any of said courses reaches the starting line for the first time in the current race. This method will avoid confusion concerning which handicapped racers have not yet reached the starting line 25 from the handicapped position, and which are reaching the line 25 in completing the race.

The present invention has been described herein more or less as to details; yet it is to be understood that the invention is not to be limited thereby, as changes may be made in the arrangement and proportion of parts and equivalents may be substituted without departing from the spirit and scope of the invention.

We claim:

1. In a score keeping device adapted for use with a racing game having a plurality of racing courses and having a plurality of racers adapted to race on each of said courses respectively, the lengths of said courses being unequal and established in accordance with some selected mathematical law, a record board adapted to record the number of races of a given series, which are won on each of said courses, said record board having a plurality of parallel vertical slots spaced horizontally, the lengths of said slots ranging according to said mathematical law, a plurality of slidable blocks, each of said blocks being adapted to be manually moved in a respective vertical slot, each of said slots and said block therein representing one of said courses respectively, said board having indicia representing the number of races won, arranged vertically adjacent each of said slots, said blocks being alignable with said indicia to indicate the number of races in a given series of races which have been won on the course represented by said block, said board having a plurality of vertically disposed apertures, a series of indicia bearing members, said board being adapted to releasably retain any one of said indicia bearing members, each of said members having a vertical column of numbers, each of said numbers being adapted to be visible when one of said indicia bearing members is appropriately positioned in said record board, each of said numbers being an expression of the probability of winning on one of said courses, each of said blocks being adapted to indicate to which number on said indicia bearing members reference is to be made to determine the probability of winning a race by the racer represented by the blocks respectively.

2. In a scoring means adapted for use with a racing game in which the racing elements must travel different distances and in which the dis-

tance which the racing element winning the previous race must travel with respect to others changes after each race of a series, a plurality of indicia bearing members, each of said members having inscribed on both faces thereof a mathematical expression of the probability of success of a particular racing element to win in relation to all the other racing elements collectively, an apertured upright member provided with means for releasably retaining any one of said members, said numerical expressions being visible from opposite sides of said upright member through the apertures formed therein, said upright member having a plurality of vertical slots, a plurality of slidable members, each of said slidable members representing a respective racing element racing on a particular course, each of said slidable members being receivable in a respective vertical slot and being adapted to frictionally engage said upright member to be maintained in any vertical position in its respective slot, resistently to gravity, but yieldingly to force, a numerical character formed, on each end of each slidable member corresponding to the number of a particular course, whereby the probability of winning a race by any racing element, in a given race of a series of races wherein the relative distance which said racing element is to travel to win said given race changes with respect to the distance to be traveled by the racing element winning the previous race of said series, can at any period be symbolically indicated by moving the particular slidable member into alignment with an appropriate aperture.

3. In a scoring means adapted for use with a racing game in which the racing elements must travel different distances and in which the distance which each racing element must travel with respect to the winning racing element of the previous race changes after each race, an upright member provided with a vertically disposed slit formed in one side thereof, said member having a plurality of apertures formed therein normal to the plane thereof and on the same side of the member as said slit, a plurality of thin members, each of which is adapted to be inserted into said slit and be securely and visibly positioned therein within the planes of one of said apertures, each of said members having inscribed on both faces thereof a mathematical expression of the probability of success of a particular racing element in relation to all the other racing elements collectively, said upright member being provided with a plurality of longitudinal slots, a plurality of slidable members, each of which is receivable in a respective longitudinal slot and being adapted to frictionally engage the upright member whereby said slidable member can be maintained in any desired longitudinal position in its respective slot, resistently to gravity but yieldably to manual force, a numerical character formed on each end of each slidable member corresponding to the number of a particular course, whereby the probability of winning a race by any racing element, in a given race of a series of races wherein the relative distance which said racing element is to travel to win said given race changes with respect to the distance to be traveled by the racing element winning the previous race of the series, can at any period be symbolically indicated by moving the particular slidable member into alignment with an appropriate one of said apertures.

4. In a scoring means adapted for use with a



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racing game in which the racing elements must travel different distances and in which the distance which each racing element must travel with respect to the winning racing element of the previous race changes after each race, a record board, means on said board for indicating the number of races won by each of said racing elements in a given series of races, a plurality of thin indicia bearing members, each of said members being adapted to be individually releasably retained in said board, said indicia bearing members having a series of numbers thereon, said means for indicating the number of races won adapted to cooperate with said indicia bearing members to indicate the relative probability of winning by any of said racers, said record board having a plurality of elongated parallel vertical slots spaced horizontally and a series of vertically extending slots, said means including indicia representing the number of races won arranged adjacent each of said elongated slots on said board and a plurality of slidable blocks adapted to be moved in said elongated slots and being alignable with said indicia on said board, said vertically extending slots being adapted to render visible said numbers of said indicia bearing members, said blocks each

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representing a particular racing element and being alignable with said indicia on said board adjacent said slots to indicate the number of races won by its associated racing element, in a given series of races.

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