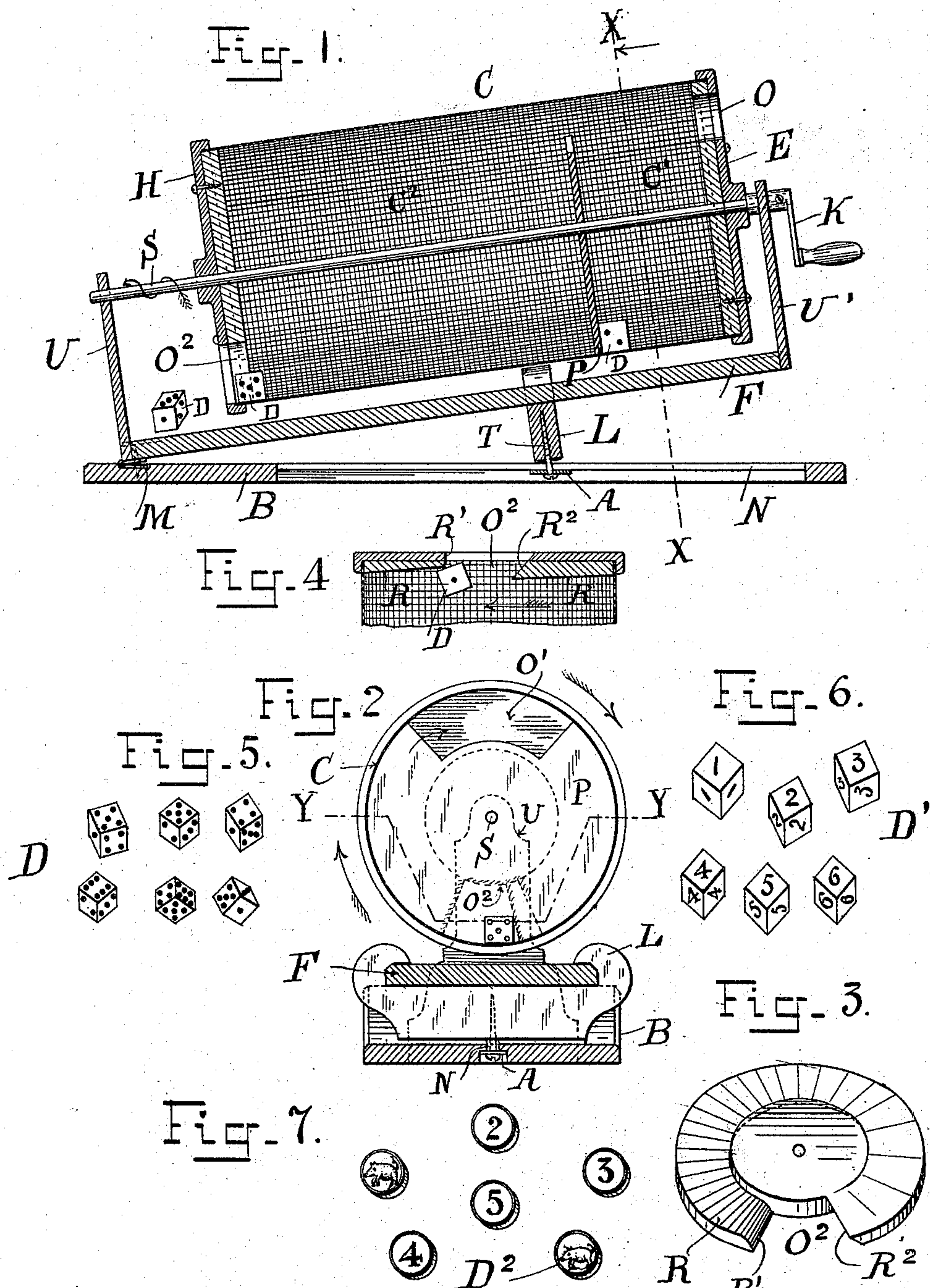


(No Model.)

E. D. AVERELL.
GAME MACHINE AND APPARATUS.

No. 557,938.

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Witnesses
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GAME MACHINE AND APPARATUS.

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To all whom it may concern:

Be it known that I, ELLCOTT D. AVERELL, a citizen of the United States, residing in the city of Brooklyn, county of Kings, and State of New York, have invented a new and useful Game Machine, Apparatus, and Revolving Chamber, of which the following is a specification.

My invention relates to improvements in machines for throwing dice and other articles similarly used in chance games; and the objects of my improvement are to increase the element of chance, diminish the possibilities of dishonest manipulation, and thereby increase the interest in the different games. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a part longitudinal vertical sectional view. Fig. 2 is a transverse sectional view cut on the line X X, Fig. 1. Fig. 3 is an inside end view of a part of the apparatus. Fig. 4 is a horizontal view cut on the line Y Y, Fig. 2, of the lower or outlet end of the apparatus. Figs. 5 and 6 are dice or cubes used in playing the games or some of them, and Fig. 7 shows blocks also used for the same purpose.

Similar letters relate to similar parts throughout the several views.

The revolving cylinder or chamber C is held on and is revolved by the shaft S, which is in turn supported in the upright parts U U' of the frame F, which frame is hinged at M to the table or base B. The shaft S is operated by the crank-arm K. The cylinder or chamber is closed at one end by the cylinder-head E and at the other by the cylinder end H, and the head E is provided with an opening O, (shown at the upper side in Fig. 1,) and the end H is also provided with an opening O² on the lower side of the end H when the cylinder is in the position shown in Fig. 1. The dice D, cubes D', blocks D², or other blocks used in the different games, are to be inserted through the opening O and passed through the chamber C, while revolving, to and through the opening O² at the lower end by gravity.

To increase the element of chance, I preferably divide the chamber C into chambers C' and C² by inserting a partition P, provided

with an opening O' on the upper side when the cylinder is in the position shown in Fig. 1, where it may be held by any counterbalance or by the handle of the crank K used as a counterbalance. More than one such partition may be used, dividing the revolving chamber C into more than two subordinate chambers, if desired, to increase the elements of chance and interest.

The size of the opening O' may be regulated at will, so as to increase or diminish the facility with which the dice pass through on the way out of the dice-throwing device.

An object of the partition P and vestibule or entrance-chamber C' is to gather the dice as nearly as possible on a line, as in a horse-race, so as to make the start even or uniform.

A game like a horse-race or in imitation thereof may be played in the apparatus, the dice or tubes being marked by the colors of the horses or owners starting in any race, or in some other manner. The chamber C may, however, be used without any partition, and instead of revolving continuously it may be oscillated.

The base B is provided with a longitudinal guide-channel N, in which the support L of the frame F and cylinder C moves to and fro, thereby increasing or diminishing the angle of the cylinder or chamber C and frame F with the base or table B and also increasing or diminishing the speed of the downward movement of the dice.

As shown, the support L is held in place in the channel N by the plate A and screw T; but any other usual means may be adopted to perform that function instead. The inside surface of the end H is on and for a short distance from its circumference helicoidal in shape, as shown in Fig. 3.

I do not desire to limit my invention to the precise helicoidal form shown in Figs. 3 and 4. The object is to insure or facilitate the passing out of the dice or blocks without the necessity of slowing down too much, and this is accomplished by so shaping the opening O² that on its farther side the boundary of the opening O² will project farther into the chamber than on its hither side and thereby prevent the continuous rolling of the dice or blocks within the chamber without escape by engaging and diverting them through the

opening. The pitch and length, therefore, of the inner surface of the end H may be varied at will to more or less facilitate the escape of the dice or blocks.

5 The method of using the apparatus is as follows: The dice D being thrown into the chamber C' through the opening O falls to the bottom of that chamber in the position shown by the dice D, Fig. 1. On turning
10 the cylinder or chamber C by the crank K, the dice will roll and tumble constantly toward the bottom until, when the opening O' is at the bottom, one or more of the dice may pass through the opening O' into the cham-
15 ber C², provided the cylinder be not revolved too rapidly, in which case the dice will continue rolling in the chamber C' until the speed of revolution is sufficiently diminished to allow the dice, one or more, to pass along
20 by gravity through the opening O' into the chamber C². As the dice pass in turn into the chamber C² they are carried and rolled around in that chamber in the same way, being advanced rapidly toward the opening O²
25 by a slow turning and less rapidly by more rapid turning, the downward tendency being increased or diminished by the increase or diminishment of the angle existing between the frame F and the base B at any
30 given time. The cylinder C being turned in the direction indicated by the arrow coiled around the shaft S in Fig. 1, the dice will make contact with the helicoid surface R, say, just beyond the edge R², and will con-
35 tinue rolling with a downward tendency as the cylinder revolves in contact with the helicoid surface until it reaches the edge of the opening O² at R', at which point, the cyl-
40 nder being slowly turned, the dice will pass out and roll upon the table, as indicated by the dice D, Fig. 1, showing five spots on the side and the dice showing three spots on the top, Fig. 1, and rolling upon the table or re-
45 maining upon the frame F the dice may be read as usual when shaken from a dice-box. When thus used, the apparatus answers the purpose of a revolving dice-box in which the handling is mechanical, not subject to col-
50 lusive control and trickery, and making the throws more perfectly a matter of accident or chance.

When the dice reach the position, in turn, shown by the dice D, Fig. 4, if the cylinder be revolved rapidly the sharp or advanced edge
55 of the surface R² may strike the dice below the center of gravity, or at such an angle as to cause the dice to pass by instead of through the opening O², and in consequence traverse again or make another round or revolution
60 in the chamber. The number of these revolutions that may be made without dropping any or all of the dice through the opening O² will depend upon the speed of revolution, and the slower the revolution the more certainly
65 will the dice speedily pass out through the opening O². The surface or shoulder R² permits higher speed in revolving the cylinder C.

It extends inwardly beyond the opposite sur- face and side R' of the opening O², and con-
70 sequently engages and diverts or directs, through the opening O², the contents of the cylinder or chamber C, when they reach the helicoidal surface R, unless the cylinder is
75 revolved too rapidly, and it does so all the more certainly and positively in proportion to the extent of the inward projection of R² and the rate of speed at which the cylinder is
80 revolved. The inwardly-projecting shoulder consequently promotes certainty and rapidity of discharge of whatever is passed through the cylinder.

In Fig. 6 are shown six cubes D', marked with figures the same on the six different sides, with which games may be played in the same way. Still another game may be played
85 by the round blocks, (shown in Fig. 7, and marked D²,) and, indeed, a variety of other games may be played with blocks—as, for in-
90 stance, blocks containing the letters of the entire alphabet, for the purpose of spelling out words, and thereby amusing and instructing children and others in spelling-games. A crib-
95 bage-game may also be played in the apparatus, fifty-two cubes, marked accordingly, being used instead of cards.

If the inner side of the end H be made flat like its center, instead of being helicoidal at and near its circumference, the dice or blocks
100 would less easily find an outlet at the opening O²; but I do not desire to limit my invention to either of such surfaces, as by enlarging the opening O², or by revolving the cham-
105 ber more slowly, the dice will be caused to fall out through that opening, even when the inner surface of the lower end is not spiral or screw-formed, but is left flat.

The whole apparatus is intended to increase the chance element in all such games to a maximum and to prevent collusive manipu-
110 lation of the dice or blocks used in any game that may be played in or by the apparatus.

As shown, the cylinder is provided with a circumference or barrel composed of wire- gauze material; but any other suitable ma-
115 terial may be used instead—as wood, paper, or papier-mâché, sheet metal, or other suitable material.

The apparatus may be made of costly material or of cheap material, with adornment or without it, to any desired extent, and a great
120 variety of additional games may be played therewith.

As shown, and preferably, the chamber C is made in the form of a cylinder; but it may be made in any other form—four, six, eight, or
125 more sided—without avoiding my invention.

Instead of a transverse partition, as shown, a spirally-formed partition may be substi-
130 tuted, extending from the inlet to the outlet, along which the dice may be caused to roll and tumble to and through the lower outlet.

The inclined or tilting and revolving dice box or chamber may be used for throwing cubical game-blocks of any known or suitable

variety. Fig. 7 shows round blocks, with the representation of a pig on one side and a number on the other side, which may be used in the same way as dice or other cubical blocks, but to play a game that may be known as "Pigs in a bag." The inclined revolving dice-chamber may be also used to stimulate invention, on the part of children and others, of a variety of other games. The revolving barrel, with its circumference composed of wire gauze or netting or other suitable material, may also be used to roll, tumble, and pass through the same any other suitable objects or articles besides the dice and the cubical and other blocks shown.

I claim as my invention—

1. As a dice-box, the inclined revolving chamber C divided into the subordinate chambers C' and C² provided with the inlet O at one end and with the outlet O² at the other end and with the opening O' in the partition P.

2. A dice-box consisting of a revolving chamber C suspended in a tilting frame F substantially as shown and described and provided with the inlet O and outlet O² substantially as shown and described.

3. In combination, an inclined revolving dice-chamber C suspended in the tilting frame F and supported by a base B.

4. In a dice-box, an inclined revolving chamber C provided with the head E, and inlet O, and with the end H and outlet O², the latter having an inner helicoidal surface R.

5. The inclined revolving dice-chamber C, shaft S, subchambers C' C², provided with inlet O and outlet O² and the frame F and base B hinged together and provided with a movable support L, in combination.

6. In combination, a tilting revolving box

provided with suitable inlet and outlet openings and cubical game-blocks.

7. An inclined revolving dice-box suspended in a movable frame hinged to or upon a supporting-base, in combination with six-sided game-blocks.

8. As a dice-box, an inclined revolving chamber provided with an inlet and an outlet opening at either end, respectively, and divided into two or more subordinate chambers by one or more partitions each provided with a suitable opening for the passage of cubical game-blocks.

9. In combination, a revolving tilted box provided with suitable inlet and outlet openings and game-blocks, substantially as shown and described.

10. An inclined revolving chamber or barrel, the circumference of which is composed of wire gauze or netting or other like suitable material, having an inlet and an outlet opening at either end respectively, and divided into two or more subordinate chambers or barrels by one or more partitions each provided with a suitable opening or passage through them.

11. The inclined revolving chamber C provided with a head having an inlet-opening therein, at one end, and with a lower end or closure having an outlet-opening therein, at the other end, which outlet-opening has, at one side, an inwardly-extending shoulder or surface R² advanced beyond that of the opposite side or edge R' of the opening O².

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Witnesses:

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