(No Model.) 2 Sheets—Sheet 1.

E. R. LAWRENCE.

MAZE PUZZLE.

No. 556,152. Patented Mar. 10, 1896.

Fig. 1.

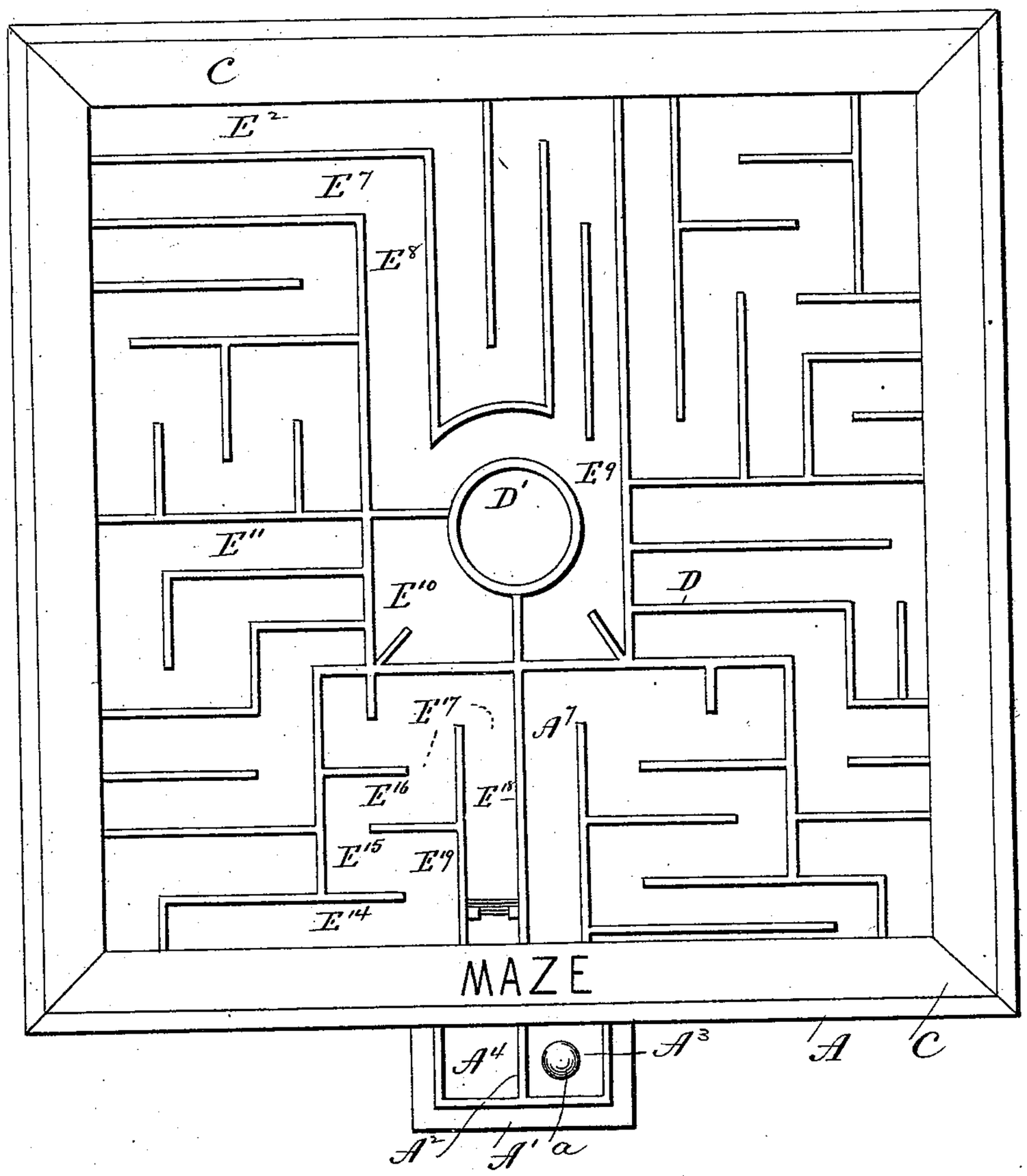
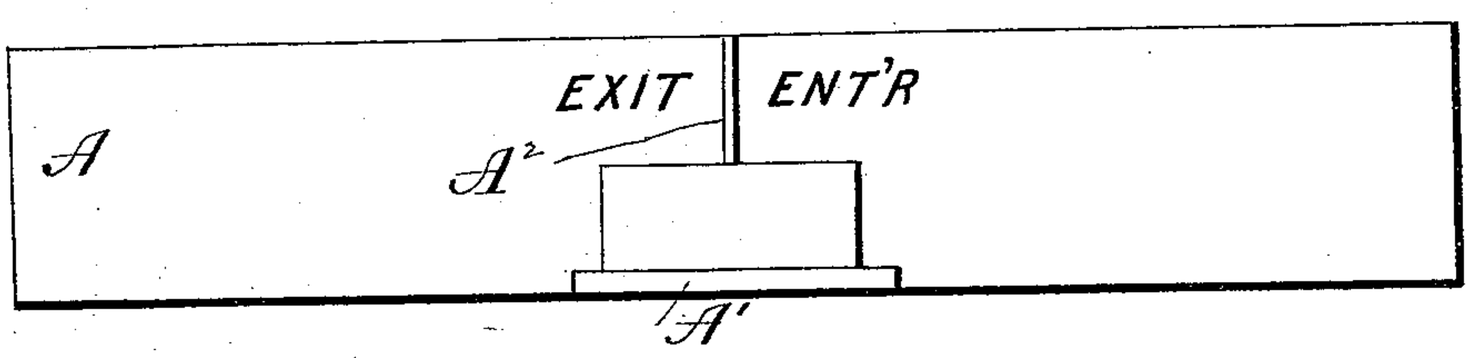


Fig. 2



Witnesses
J. H. Shumway.
Lillian D. Kelsey.

Edward R. Lawrence
Inventor.
By Atty Earle Seymour

(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

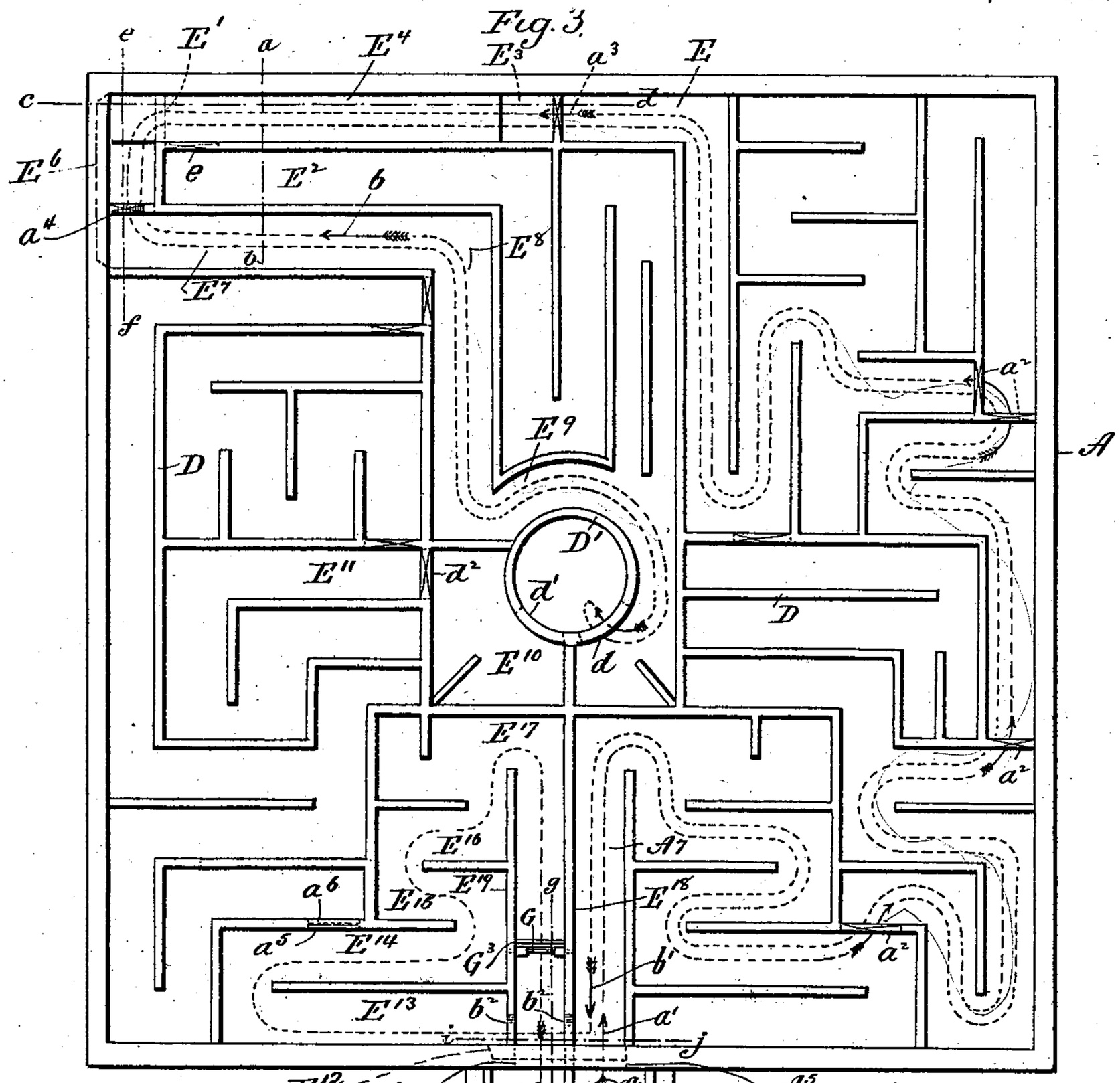


Fig. 7

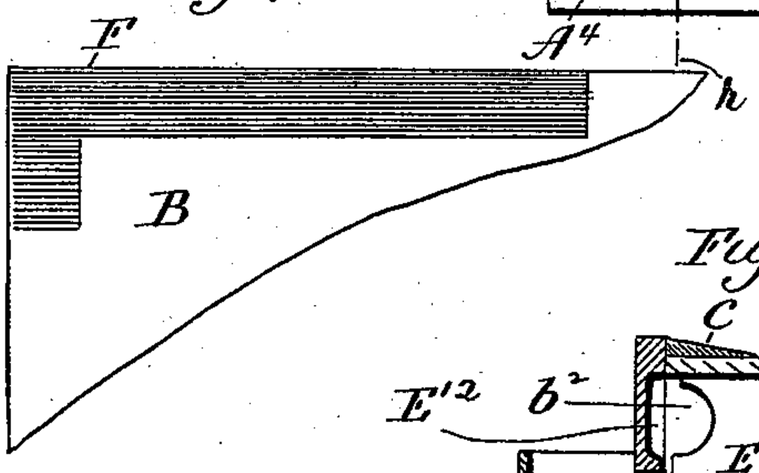


Fig. 4

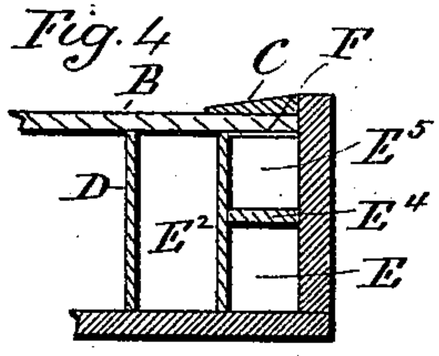


Fig. 8

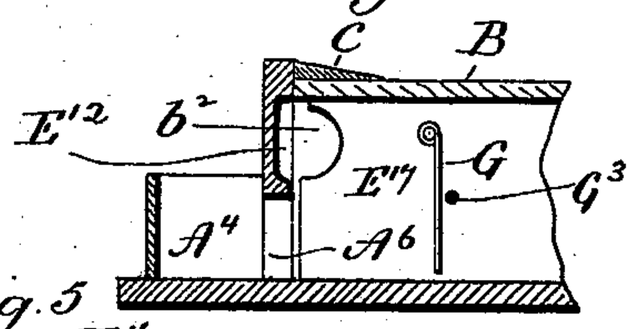


Fig. 6

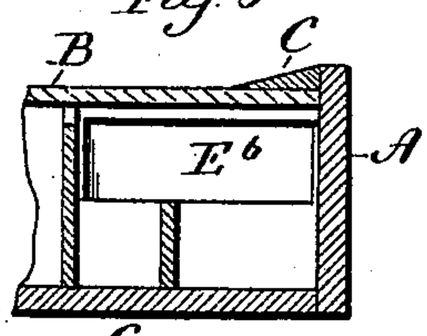


Fig. 5

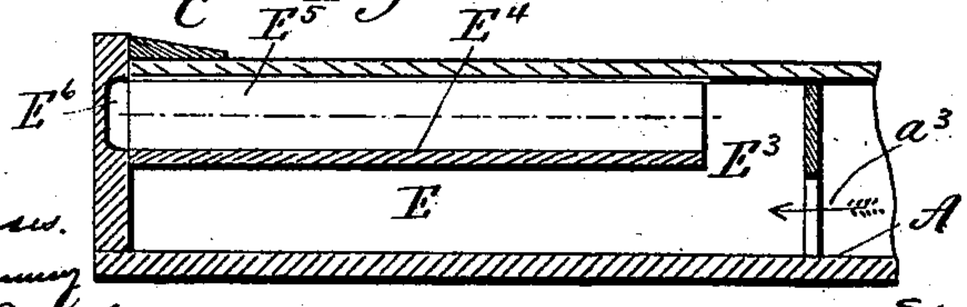
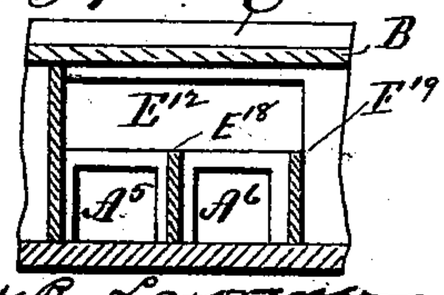


Fig. 9



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By atty's Earle Seymour

UNITED STATES PATENT OFFICE.

EDWARD R. LAWRENCE, OF NEW HAVEN, CONNECTICUT.

MAZE PUZZLE.

SPECIFICATION forming part of Letters Patent No. 556,152, dated March 10, 1896.

Application filed December 23, 1895. Serial No. 573,042. (No model.)

To all whom it may concern:

Be it known that I, EDWARD R. LAWRENCE, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Maze Puzzles; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a plan view of a maze puzzle containing my invention; Fig. 2, a front view thereof; Fig. 3, a view of the puzzle with the glass and strips removed; Fig. 4, a sectional view on the line *a b* of Fig. 3, and showing the main blind; Fig. 5, a sectional view on the line *c d* of Fig. 3, and also showing the main blind; Fig. 6, a sectional view on the line *e f* of Fig. 3, and also showing the main blind; Fig. 7, a view of that portion of the glass plate containing the paper buffer; Fig. 8, a view on the line *g h* of Fig. 3, showing the secondary blind; Fig. 9, a sectional view on the line *i j* of the same figure, showing another view of the secondary blind.

My invention relates to an improvement in that class of puzzles known to the trade as "maze puzzles," the object being to produce at a low cost for manufacture a puzzle of convenient form and interesting and exciting character.

With these ends in view my invention consists of a maze puzzle having certain details of construction and combinations of parts, as will be hereinafter described and pointed out in the claims.

In carrying out my invention I employ a shallow box A, which, as shown, is square in form, its top being closed in by a glass plate B, the edges of which are overlapped by four strips C mitered at their ends and concealing those portions of the interior of the box lying under them. The body of the box is filled in with a great many upright fenders D, which may be arranged in an infinite variety of ways. As shown, they vary in length and in arrangement, and may be said to be grouped around a central goal D'. These fenders may be formed of any desired matertal, but I have found heavy pasteboard well adapted to the purpose. In the central portion of its forward edge the box is provided with a projection A', divided by an upright partition A^2 into an ingress-compartment A^3 and an exit-compartment A^4, these compartments respectively leading into the box through openings A^5 and A^6 formed therein. The feat of the puzzle is to enter the ball *a* seen in the ingress-compartment A^3 into the said compartment and then work it through the maze to the goal and out into the egress-compartment A^4. The working of the ball through the maze would be simply a matter of patience and time were it not for the "blinds" with which it is furnished and which it requires ingenuity and study to circumvent.

For convenience and lucidity of description I will follow the path which the ball must take in order to make the circuit, so to speak, of the maze. It will be understood, of course, that in doing the puzzle the ball will make innumerable deviations from its said path, but it would be practically impossible to describe all of those and would profit nothing. For the purpose of this description it will be assumed that the ball is confined to the path which it must take in going through the maze. Starting with the arrow *a'*, which is seen in Fig. 3 in the ingress-compartment A^3, the path of the ball is traced by the broken line leading from the point of the arrow around various fenders and through several ports a^2 formed therein and symbolically illustrated by a cross. When the ball has been worked along to the arrow a^3, it reaches the main or first blind. The natural tendency of the ball is to follow along through the runway E, but when it reaches the end thereof it meets the imperforate fender E' and will naturally be deflected through the port *e* into the runway E^2, which opens into other runways from which there is no exit. The ball must therefore be got back into the runway E; but the person struggling with the puzzle will work in vain to make any headway with the ball until he turns the puzzle upside down, with the ball in position to pass through the horizontal port E^3, after which the box must be tilted so as to cause the ball to move to the left and emerge upon the elevated horizontal glass fender or platform E^4, above

which an elevated runway E^5 is formed, the said glass platform E^4 and runway E^5 extending leftward to the edge of the box.

Glass is preferably used for the platform E^4, so that if the person working out the puzzle inverts the box he will hear the click of the ball against the glass and be led to the conclusion that the ball has merely struck the glass plate B near its edge. In a sense, therefore, the use of glass for the platform E^4 conceals, as it were, the existence of the platform, which the ball cannot be shunted or deflected upon, as described, unless the box is turned over, with the ball in position to glide through the horizontal port E^3, and then tilted so as to cause the ball to be deflected upon the platform E^4, down which it will roll if the box is further tilted and enter the elevated runway E^6, which is formed by recessing the inner face of the adjacent side of the box. One of the fenders is cut away, as at a^4, to give clearance to the ball in passing through the said runway E^6. From the opposite end of the said runway E^6 the ball drops down into the runway E^7, which opens into the runway E^8, the latter opening in turn into the runway E^9, from which entrance is had through the port d into the goal D', which also contains an opening d', which opens into the box-like runway E^{10}, from which access is had through the port d^2 into the runway E^{11}.

The person working at the puzzle will naturally infer from the provision of the goal with the port d' that by taking that lead and working the ball into the runway E^{10}, and from thence through the port d^2 into the runway E^{11}, he will find his way out in that direction; but the runway E^{11} only leads into a series of blind pockets, from which there is no way out, and the person working at the puzzle must finally learn that he must retrace the path by which he came, through the elevated runways E^7 and E^6 into the runway E, from which access is had to the runways on the right-hand side of the puzzle.

I may here pause to mention the deceptive port a^5, which is formed in a fender and closed by a bit of clear isinglass a^6. (Seen to the left in Fig. 3.) I may also mention here that when the ball is in either the runway E^5 or E^6 it is prevented from striking against the glass plate B by means of a paper buffer F, located upon the under side of the glass and clearly shown in Fig. 6. This buffer deadens the impingement of the ball upon the glass and assists in concealing from the person working the puzzle the real character of the blind.

Beginning with the arrow b, the return passage of the ball may be followed by the broken line leading from the point of the said arrow b to the arrow b', lying close to the arrow a' before mentioned. Before the ball has been worked back to the arrow b' the person working out the puzzle will have made many attempts to cross over to the left side of the box, where he will naturally look for some path to the egress-opening A^6, which can only be reached by circumventing the second blind, which is located where it would not naturally be looked for. The said second blind consists of an elevated runway E^{12}, formed in the inner face of the central portion of the front side of the box A, and corresponds in character to the elevated runway E^6 before mentioned. The said runway E^{12} connects the extreme forward end of the ingress-runway A^7 with the extreme inner end of the runway E^{13}, which in turn leads into the runway E^{14}, leading into the runway E^{15}, which communicates with the runway E^{16}, in turn leading into the outer end of the egress-runway E^{17}, which is parallel with the ingress-runway A^7. The forward ends of the two parallel fenders E^{18} and E^{19} are respectively cut away, as at b^2, to afford clearance for the ball through the said elevated runway E^{12}. When the ball reaches the arrow b' it will, if the box is tipped sufficiently, pass from the forward end of the runway A^7 into the elevated runway E^{12}, which it will traverse if the box is manipulated properly and drop down into the runway E^{13}, and thence follow the path of the broken line around to the arrow b^4, which is located in the egress-compartment A^4. A gate G, Fig. 8, located in the runway E^{17}, swings freely outward toward the opening A^4 and permits the ball to pass it in its outward passage through the runway, but is prevented by a stop-pin G^3 from swinging inward.

It will be seen from the foregoing that the ingress-runway A^7 is connected with the egress-runway E^{17} by the elevated runway E^{12} through the medium of the runways E^{13}, E^{14}, E^{15} and E^{16}.

It is apparent that in carrying out my invention one or both of the blinds may be employed, or that more than one of either or both may be used, and, furthermore, that their location and arrangement may be varied, as well as the location and arrangement of the various fenders and the ports therein. I would therefore have it understood that I do not limit myself to the construction shown and described, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a maze puzzle, the combination with a shallow box, of a plurality of fenders arranged in vertical planes therein and dividing the box into a maze of runways, a plate of glass closing the top of the box, means applied to the glass for concealing those portions of the box lying under the edges of the glass, and a blind comprising an elevated platform forming an elevated runway to which access is had by tilting the box, substantially as described.

2. In a maze puzzle, the combination with

a shallow box, of a plurality of fenders arranged in vertical planes therein and dividing the box into a maze of runways, a plate of glass closing the top of the box, means applied to the glass for concealing those portions of the box lying under the edges of the glass, and a blind comprising an elevated platform of glass, and forming an elevated runway to which access is had by tipping the box, substantially as described.

3. In a maze puzzle, the combination with a shallow box, of a plurality of fenders located in vertical planes therein and dividing the box into a maze of runways, a plate of glass closing the top of the box, means applied to the glass for concealing those portions of the box lying under the edges of the glass, and a blind comprising an elevated runway formed by an elevated platform and an elevated runway formed by grooving a portion of the box from the inside thereof, substantially as described.

4. In a maze puzzle, the combination with a shallow box, of a plurality of fenders located in vertical planes therein, and dividing it into a maze of runways including an ingress and an egress runway, a plate of glass closing the top of the box, a projection connected with the front of the box and containing an ingress and an egress compartment respectively opening into the said ingress and egress runways, and an elevated runway connecting the said ingress and egress runways, and formed by grooving the inner face of the forward side of the box, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

EDWARD R. LAWRENCE.

Witnesses:
ALBERT F. LAUDENSACK,
ARTHUR M. SYPHER.