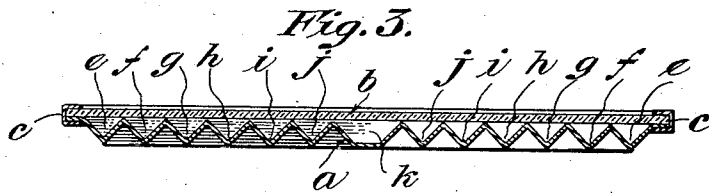
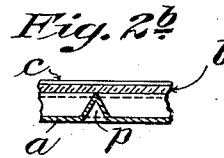
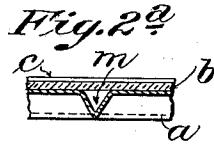
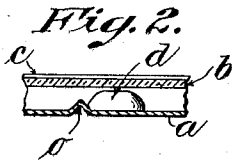
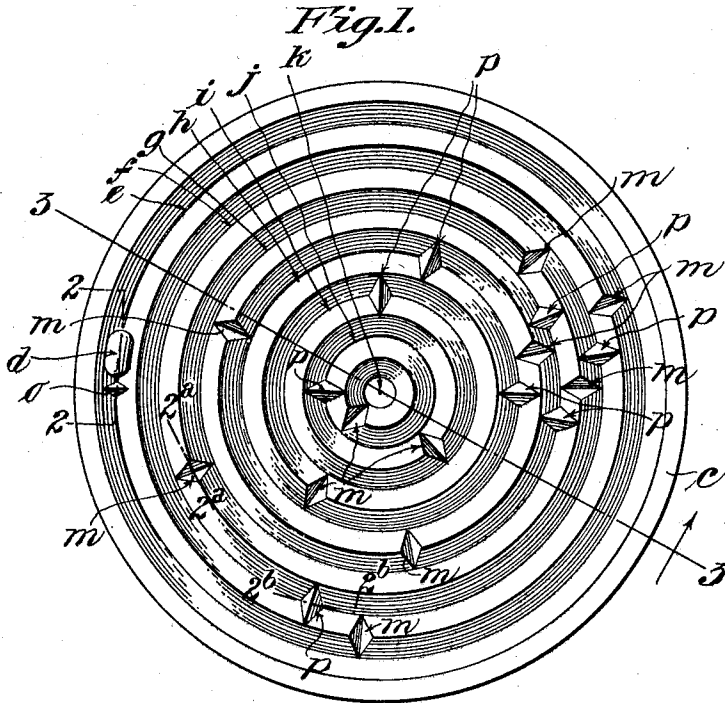


L. S. BURBANK.
PUZZLE.

APPLICATION FILED SEPT. 18, 1912.

1,062,953.

Patented May 27, 1913.
2 SHEETS—SHEET 1.



Witnesses:
G. K. Johnson
E. Batchelder

Inventor,
L. S. Burbank
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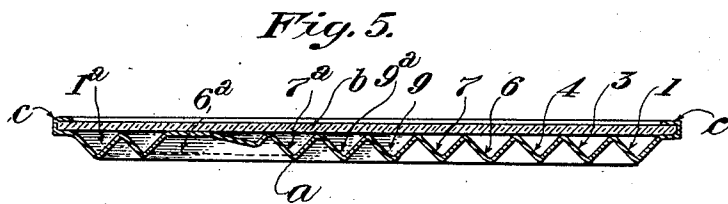
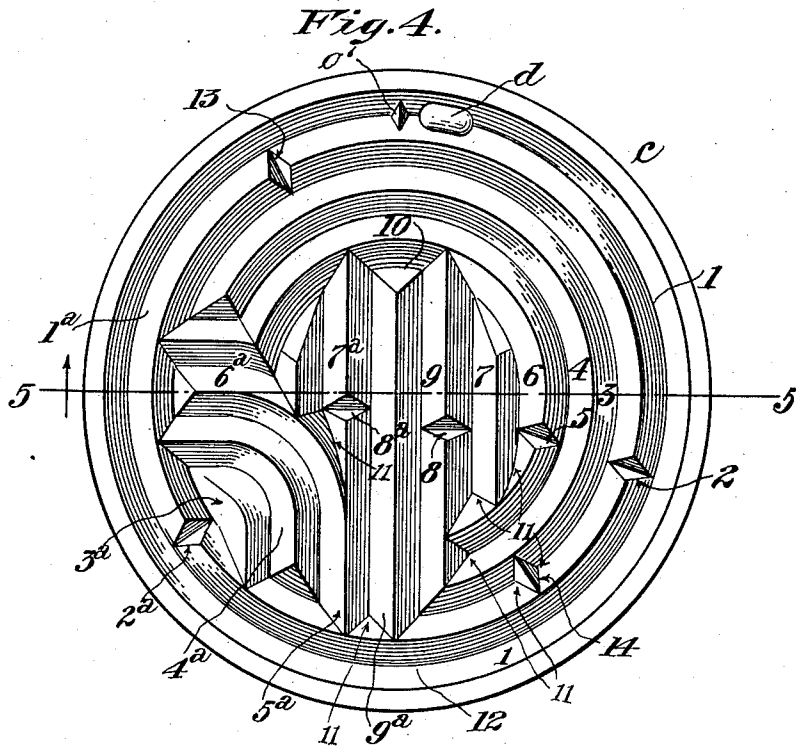
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UNITED STATES PATENT OFFICE.

LOUIS S. BURBANK, OF HOPEDALE, MASSACHUSETTS.

PUZZLE.

1,062,953.

Specification of Letters Patent.

Patented May 27, 1913.

Application filed September 18, 1912. Serial No. 720,995.

To all whom it may concern:

Be it known that I, LOUIS S. BURBANK, a citizen of the United States, and resident of Hopedale, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Puzzles, of which the following is a specification.

This invention is embodied in a puzzle comprising a base having a labyrinthine passage extending from the outer portion to the center of the base, and a transparent top forming the outer wall of said passage, a pellet of fluid mercury adapted to move in said passage, the outer portion of the passage being provided with means whereby the pellet may be sub-divided, by manipulating or shaking the device, into two smaller pellets, a goal space being provided at the center of the base in which either of the two pellets may be deposited as the result of a race between the pellets caused by further manipulation, or in which the pellets may be reunited, the construction being such that considerable care and skill is required to prevent in one case the uniting of the pellets during the race, and in the other case, the premature uniting of the pellets before they reach the goal space.

Of the accompanying drawings forming a part of this specification:—Figure 1 represents a top plan view of a puzzle embodying my invention. Fig. 2 represents a section on line 2—2 of Fig. 1. Fig. 2^a represents a section on line 2^a—2^a of Fig. 1. Fig. 2^b represents a section on line 2^b—2^b of Fig. 1. Fig. 3 represents a section on line 3—3 of Fig. 1. Fig. 4 represents a top plan view showing a different embodiment of the invention. Fig. 5 represents a section on line 5—5 of Fig. 4.

The same reference characters indicate the same parts in all the figures.

In the drawings, *a* represents a base or body, which is preferably a disk of sheet steel, pressed to form corrugations or grooves, and short transverse grooves connecting adjacent elongated grooves, the whole being arranged to form a labyrinthine passage extending from the periphery to a goal at the center of the disk.

In Figs. 1 and 4 the heavy black lines indicate the apexes of the corrugations, which are all preferably located in the same plane, so that a transparent top plate *b*, which may be of celluloid, glass, or other suitable trans-

parent material, may bear on said apexes and form the outer wall of the passage. The transparent top *b* is preferably secured to the base by means of a marginal lip or flange *c*, formed by turning inwardly the margin of the base, said flange overlapping the margin of the top *b*. A drop or pellet *d* of fluid mercury is placed in the passage and retained therein by the top *b*, the pellet being adapted to be removed from the outer end of the passage to the goal by suitably manipulating or tilting the device. The outer portion of the passage is provided with means whereby the operator, by shaking or agitating the device, may sub-divide the pellet *d* into two pellets of substantially equal size, and the feat to be accomplished includes the progressive movement of the two pellets toward the goal without permitting the pellets to meet and reunite in transit.

In the embodiment of the invention shown by Figs. 1, 2 and 3, the feat to be accomplished is to cause one of the pellets to reach the goal, either in advance of the other, or without permitting the other to reach the goal, the pellets representing, for example, rival political candidates.

In the embodiment of the invention shown by Figs. 4 and 5, the feat to be accomplished is to cause the pellets to move separately to the goal and there unite.

Referring to Figs. 1, 2 and 3, the labyrinthine passage is composed of the elongated concentric portions *e*, *f*, *g*, *h*, *i*, *j*, *k*, and the short transverse portions *m*, connecting said concentric portions at various points, as shown by Fig. 1, the inner portion *k* constituting the goal. The outer portion *e* is provided with a low ridge *o*, between which and the top *b*, is a contracted passage smaller than the diameter of the pellet *d*, as shown by Fig. 2, so that the operator, by shaking the puzzle when the pellet is near the ridge, may sub-divide the pellet into two smaller pellets located at opposite sides of the ridge *o*. The portions *f*, *g*, *h*, *i*, and *j*, are provided with higher ridges *p* which practically meet the top *b* and constitute barriers which prevent progressive movement of a pellet in either of said portions, and necessitate the movement of the pellet through an adjacent transverse portion *m* into another concentric portion, in order that it may proceed on its course to the goal.

The puzzle may be operated as follows: Name two of the three presidential candidates, Roosevelt, Taft, and Wilson. Separate the pellet *m* into two of nearly equal size, as above described. Then by variously tilting the puzzle, try to advance one or the other of the pellets to the goal. It may be understood that neither pellet is to advance more than one concentric portion beyond the other. A collision and reunion of the two pellets *en route* counts as a failure, and may be understood to mean that the third candidate will be elected. The relative arrangement of the short transverse passage portions *m* and barriers *p*, shown by Fig. 1, is such that much care and skill are required to perform the feat above indicated, said barriers and the adjacent parts of the elongated passage portions in which they are located forming numerous culs-de-sac, in which a pellet is liable to be pocketed, so that careful manipulation is required to advance the pellet on its course and at the same time prevent it from meeting the other pellet.

Referring to Figs. 4 and 5, the labyrinthine passage has two divisions, one of which includes the portions 1, 2, 3, 4, 5, 6, 7, 8, and 9, while the other division includes the portions 1^a, 2^a, 3^a, 4^a, 5^a, 6^a, 7^a, 8^a, and 9^a, said portions being preferably of the general form and arrangement represented by Fig. 4. The adjacent ends of the portions 1 and 1^a, are partially separated from each other by a low ridge *o'*, corresponding to the ridge *o* above described, and cooperating with the top *b* in forming a restricted passage which permits the subdivision of the pellet *d* in the manner described. The portions 9 and 9^a are connected by a short transverse passage constituting the goal. The portions 1, 3, 4, 6, 7 and 9, and 1^a, 3^a, 4^a, 5^a, 6^a, 7^a, and 9^a, are elongated, and the portions 2, 5, 8, 2^a and 8^a are short transverse grooves connecting adjacent elongated portions.

The feat to be accomplished after subdividing the pellet of mercury is to cause each pellet to move progressively along the division of the passage in which it is contained, without entering the other division, until it reaches the goal 10, and reunites with the other pellet. This feat is rendered difficult of accomplishment, first, by means of culs-de-sac 11, formed at different points, these being adapted to arrest the progress of a pellet and requiring delicate manipulation

of the puzzle to cause the arrested pellet to continue on its course to the goal, and, secondly, by connections between the two passage divisions permitting a pellet to move from one division into the other, where it is likely to meet the other pellet before reaching the goal. 12 represents one of the said connections, the same being of segmental form, and connecting the portions 1 and 1^a. 13 represents another connection which is a transverse groove connecting the portions 1^a and 3.

14 represents a ridge in the portion 3, forming the ends of two culs-de-sac.

I claim:

1. A puzzle comprising a base having a labyrinthine passage, a transparent top, a pellet of mercury, means whereby the pellet may be subdivided, and a goal connected with the passage.

2. A puzzle comprising a base having a labyrinthine passage, a transparent top forming the outer wall of the passage, a pellet of mercury, means in the outer portion of the passage whereby the pellet may be subdivided, and a goal communicating with the inner end of the passage, said passage having culs-de-sac adapted to pocket a pellet or pellets moving therein.

3. A puzzle comprising a base having a labyrinthine passage composed of elongated portions and shorter transverse connecting portions, said passage having barriers forming the ends of culs-de-sac, a pellet of mercury, means in the outer portion of the passage whereby the pellet may be subdivided, and a goal communicating with the inner end of the passage.

4. A puzzle comprising a base having a labyrinthine passage composed of two divisions, a transparent top forming the outer wall of said passage, a pellet of mercury, the outer ends of the passages being adjacent to each other, means whereby the pellet may be subdivided in the outer portion of the passage into two smaller pellets, one located in each division, a goal communicating with the inner ends of the divisions, and connections between portions of the divisions through which a pellet may pass from either division into the other.

In testimony whereof I have affixed my signature, in presence of two witnesses.

LOUIS S. BURBANK.

Witnesses:

MORTIMER C. DENNETT,
CLARENCE E. ARNOLD.