

(No Model.)

W. H. REIFF.

TOY PUZZLE.

No. 244,768.

Patented July 26, 1881.

Fig. 1

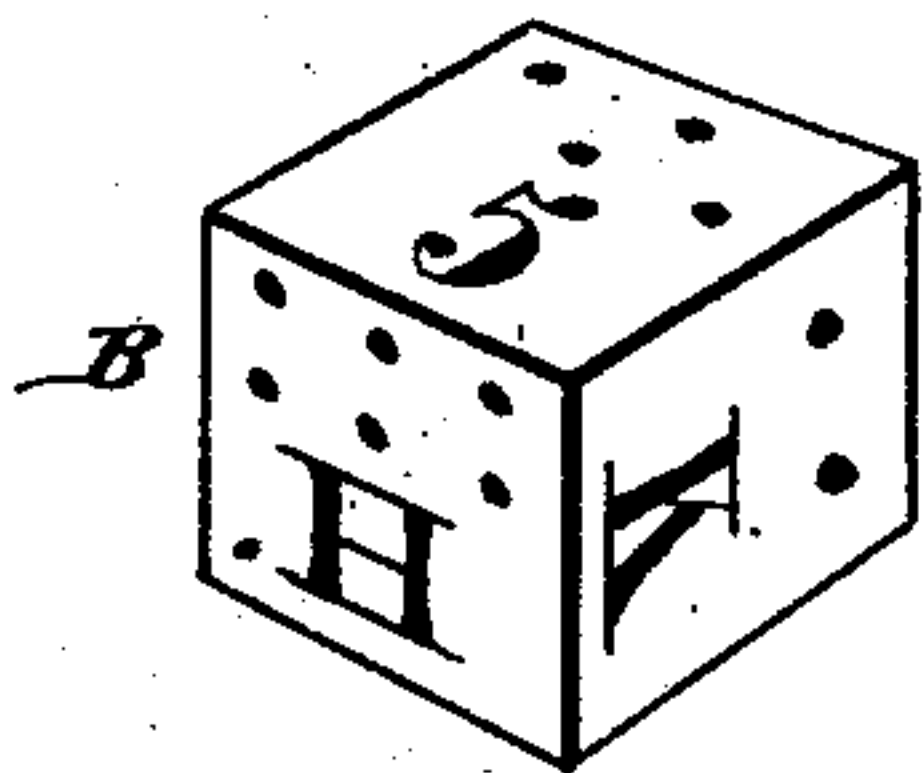
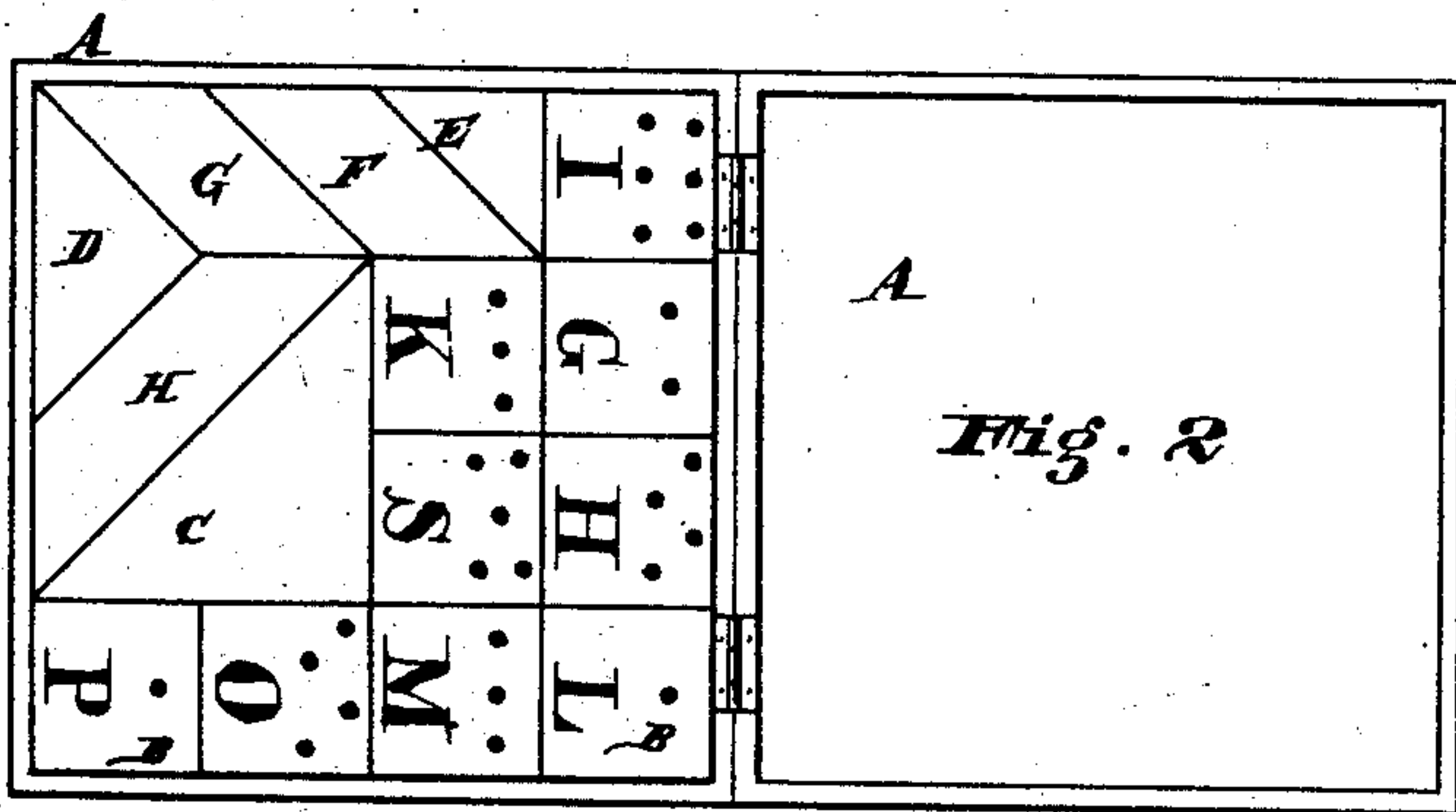
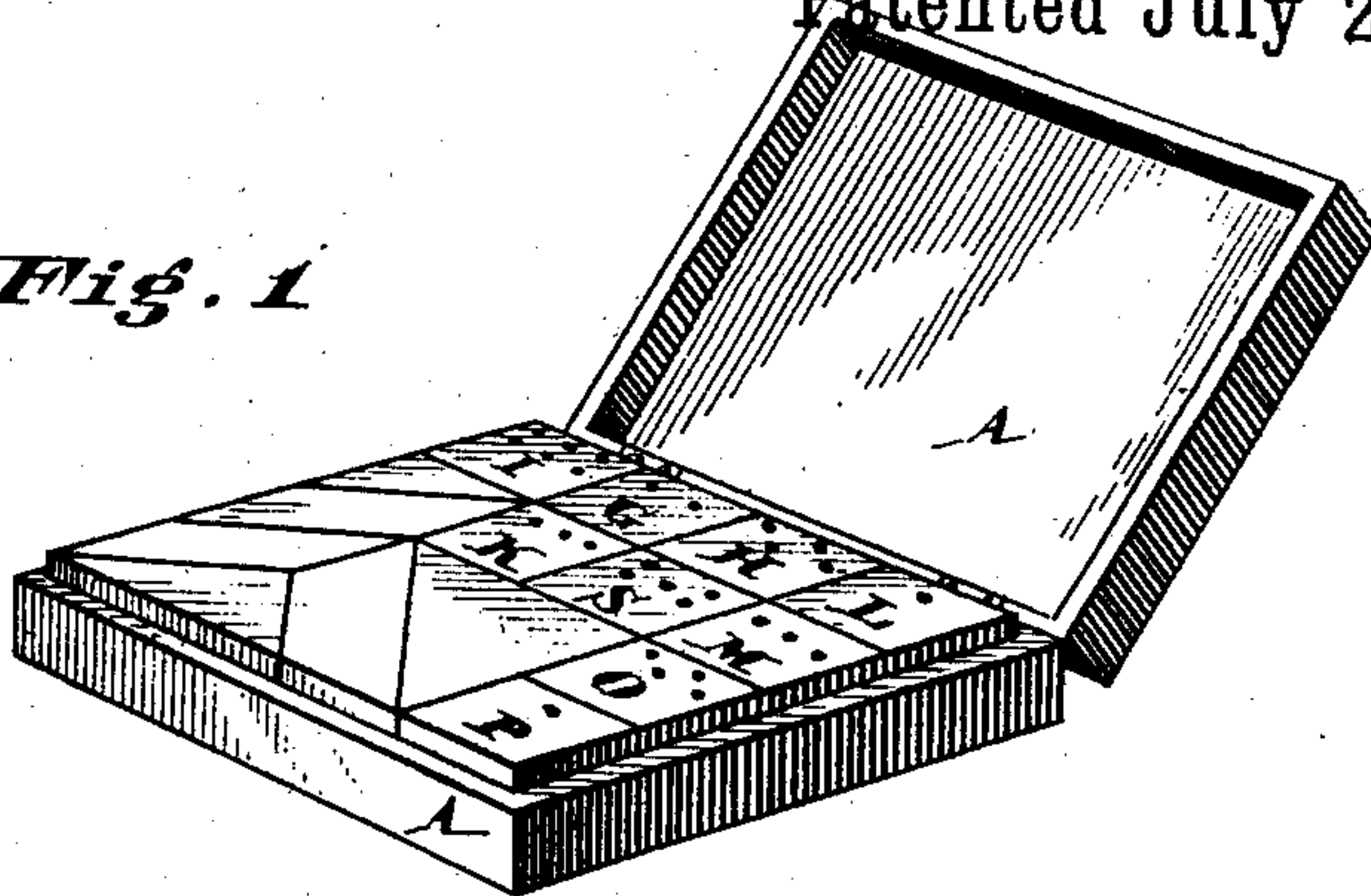


Fig. 3



Fig. 4

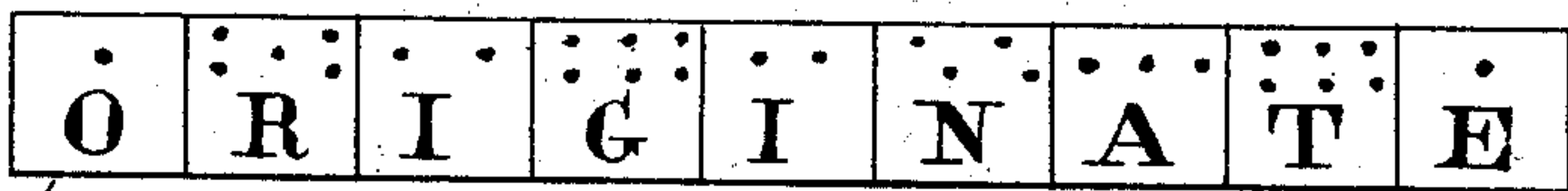


Fig. 5

Attests

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By his atty.

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UNITED STATES PATENT OFFICE.

WILLIAM H. REIFF, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF
TWO-THIRDS TO WILLIAM A. NICHOLS, OF SAME PLACE.

TOY PUZZLE.

SPECIFICATION forming part of Letters Patent No. 244,768, dated July 26, 1881.

Application filed June 22, 1881. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. REIFF, of the city and county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Toy Puzzles, of which the following is a specification.

My invention has reference to toy puzzles; and it consists in providing a number of cubes or other solids having flat faces or sides, with a figure upon one of the sides and letters upon those remaining; further, in providing said cubes with the usual dice-dots; and, finally, combining said cubes, or their equivalent, with a given number and of differently-shaped geometrical prisms, all of which are more fully set forth in the following specification and shown in the accompanying drawings, which form part thereof.

The object of this invention is to so construct and figure the blocks that when the same are set with their numbers uppermost in a given order they can then be turned about without changing their relative order or positions to spell a word, and to adapt said cubes or blocks to be used as dice; and, further, in arranging the geometrical prisms with the cubes so that various geometrical figures may be made, said figures being both instructive and interesting to young and old alike. The number of games or puzzles to the set of blocks referred to above and hereinafter described is almost infinite.

In the drawings, Figure 1 is a perspective view of my improved puzzle arranged within a box with its lid open. Fig. 2 is a plan of same. Fig. 3 is a perspective view of one of the cubes. Figs. 4 and 5 illustrate the use of the cubes in one form of a puzzle.

A is the low-sided or shallow box adapted to contain the blocks or prisms.

B are nine cubes provided on the sides with the usual dice-dots to enable them to be used for any game in which dice are necessary. These blocks are further provided on one side with a figure or number, and on the remaining sides are letters selected from the alphabet and varied in manufacture at pleasure to suit a different set of words.

One use of the blocks B by themselves and

independent of the geometrical prisms is illustrated in Figs. 4 and 5. Here the cubes are set with the figures on top in the order given in the key to the puzzle, and when this is done it remains to spell a word, using all of the cubes without changing their relative positions. When set up as shown in Fig. 4 the word which may be spelled is "originate," as shown in Fig. 5. This at first sight appears to be very simple, but when the number of variations which can be made with the nine cubes, each having five letters thereon, is considered it is seen that an hour or more might be spent before the word could be found. By merely arranging the figures in other orders other words can be spelled. Of course it will be readily understood that I can use more or less of the cubes as desired, as the principle would remain the same, and in place of cubes any other solid having sides or faces may be used. There are many other games which may be played with these cubes by themselves.

The prisms C, D, E, F, G, and H, with the cubes, complete a square which fits into the box A. These prisms are constructed as follows: Prism C has a triangular base, said triangle being right-angled, and having its base and altitude equal to twice the length of one of the sides of the cubes. Prism D is a triangular prism homologous with prism C, only it has but one-half the area; or, in other words, it has a right-angled triangular base, the hypotenuse of said triangle being equal to twice the length of the side of cubes B. Prism E is homologous with prisms C and D, and its base has one-quarter the area of that of prism C and one-half the area of the base of prism D; or, in other words, its base and altitude are equal to the length of one side of cubes B. Prisms F and G have trapeziums for bases, and are equal in area to twice the prism E, and have their shortest sides equal in length to the side of cubes B. Prism H has a base in the shape of a quadrangle, and in area is equal to prism F, with the addition of a prism, E, to one of its short sides, has an area equal to three times the triangular prism E, and its shortest side is equal to the side of cubes B.

These prisms, in combination with the cubes, enable a hundred or more changes to be made, forming geometrical figures which are difficult to solve, and are both interesting and instructive. For instance, the blocks may be placed in the box to form a square in four different ways, four squares of different areas may be set up, and the same may be said of rectangles and trapeziums. A jumping-jack may be clearly outlined both before and after pulling the string, a head may be formed, &c. In fact, the figures which these blocks will form are numerous, some being exceedingly difficult to set up. The variations in games and puzzles which can be played with it render it a combination-puzzle of great value.

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

20 1. In a puzzle, two or more blocks having sides or faces thereon, one of said sides being provided with a figure or number and the remaining sides with letters, substantially as and for the purpose specified.

2. In a toy puzzle, two or more cubical blocks 25 provided upon their sides with the usual dice-dots, one of said sides being provided with a number and the remaining sides with letters, substantially as and for the purpose specified.

3. In a toy puzzle, the combination of three 30 right-angled triangular prisms in the ratio of 1, 2, and 3, two prisms with trapezium bases, said bases having an area equal to twice the area of the smallest triangular prism, and one prism having an area equal to three times the 35 area of the small triangular prism, and having a quadrangular base, substantially as and for the purpose specified.

4. In a toy puzzle, the combination of the cubes B with prisms C, D, E, F, G, and H, 40 all constructed and shaped substantially as shown and described.

In testimony of which invention I hereunto set my hand.

WILLIAM H. REIFF.

Witnesses:

LOUIS J. MÁTOS,
LISLE STOKES.