J. U. Mueller,

Puzzle Blocks,

No. 37,763, Patented Feb. 24, 1863.

Fig. 1.

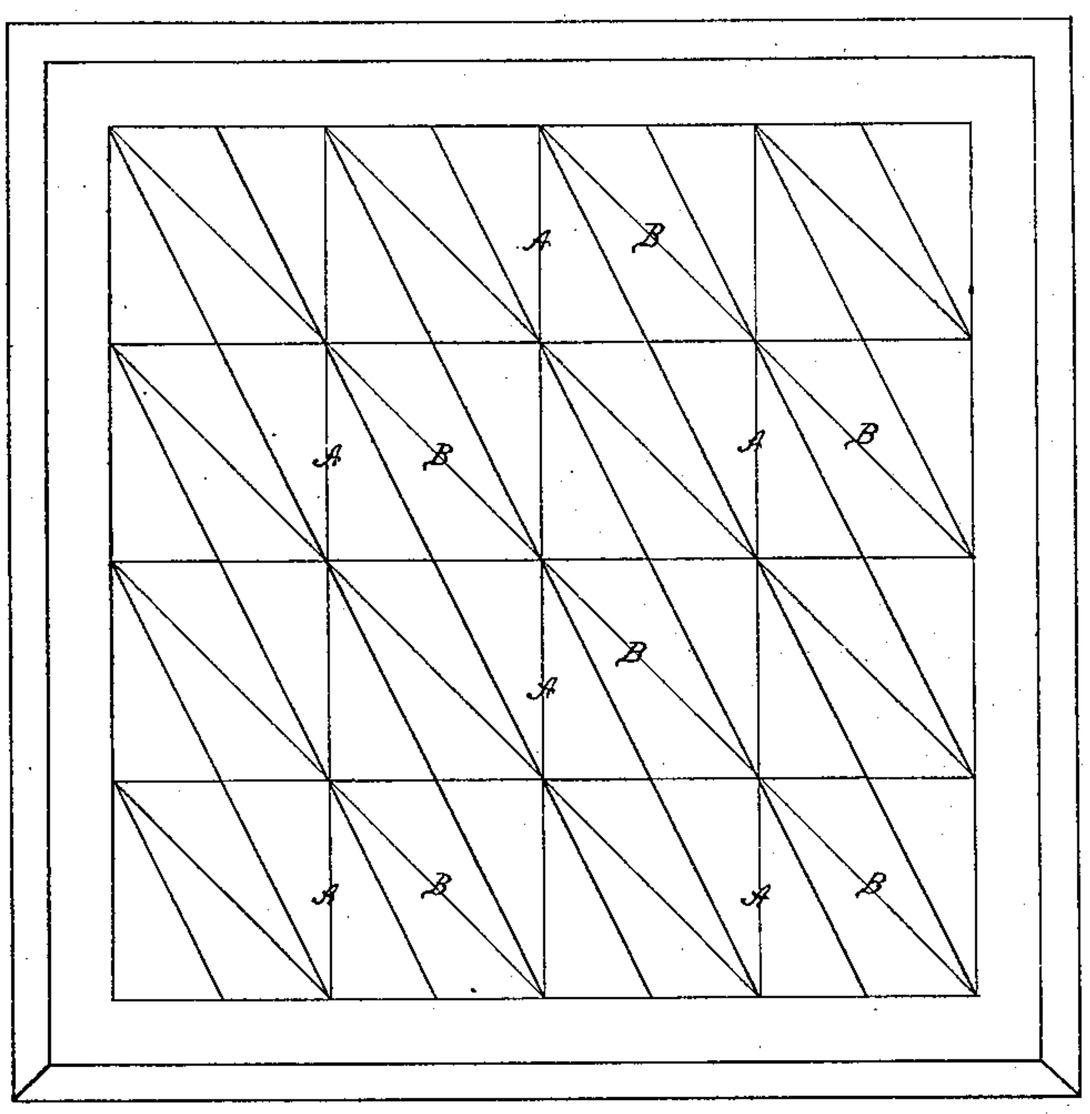


Fig. 2.

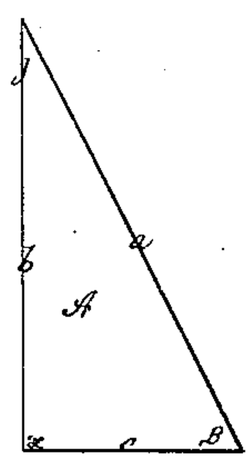
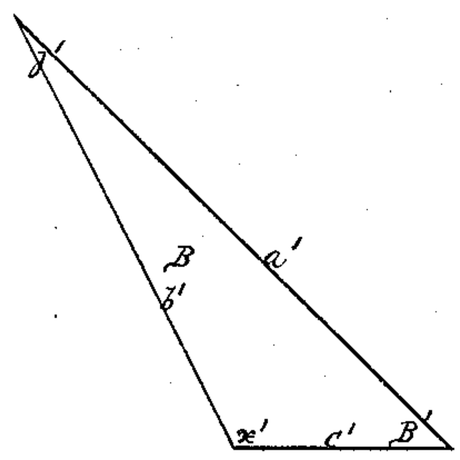


Fig. 3.



Witnesses.

J. W. Coombs.

G. W. Reed.

Inventor.

J. U. Mueller.

AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

I. U. MUELLER, OF DETROIT, MICHIGAN.

PUZZLE.

Specification forming part of Letters Patent No. **37,763**, dated February 24, 1863.

To all whom it may concern:

Be it known that I, I. U. MUELLER, of Detroit, in the county of Wayne and State of Michigan, have invented a new and Improved Puzzle; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a plan or top view of my invention. Figs. 2 and 3 are detached views of the triangles, which I use in my puzzle in an enlarged scale.

Similar letters in the three views indicate corresponding parts.

This invention relates to that class of toys in which, by means of several pieces of wood of different color and different shape, a variety of figures or designs can be formed.

The invention consists in the employment or use of two different sets of triangles, which are of such a shape that two sides of each triangle of one set are equal to two sides of each triangle of the other set, and the three angles of each triangle are different from each other, and, furthermore, the angles of the triangles of one set are all different from the angles of the triangles of the other set, in such a manner that a large variety of different figures can be produced with a comparatively small number of triangles.

To enable those skilled in the art to make and use my invention, I will proceed to describe it with reference to the drawings.

My puzzle consists of two sets of triangles, A B, of different shape. Each triangle is colored with black or any other dark color on one surface, the other being left blank or light colored, and the dark color is applied in such a manner that one-half of each set of triangles is colored on one, and the other half on the opposite surface. The triangles A are right-angled, as clearly shown in Fig. 2, where one of said triangles is represented in an enlarged scale, and the triangles B are obtuse-angled, as shown in Fig. 3. The side c of the triangle A is equal to the side c' of the triangle B, the side a of the triangle A is equal to the side b' of the triangle B, the angles α of the triangle A is equal to ninety degrees, the angle β equals sixty-three degrees and twenty-six minutes, γ equals twenty-six degrees and thirty-four minutes, and the angle of the triangle B are α' equals one hundred and sixteen degrees and thirty-four minutes, β equals forty-five degrees, γ' equals eighteen degrees and twenty-six minutes.

From this explanation it will be seen that of the six angles in the two triangles none is equal to any of the others, and therefore a greater variety of angles and figures can be produced than with the ordinary isosceles triangles. If the angles are put together in pairs, the number of combinations possible will be twenty-one, viz:

$$\alpha\ \alpha,\ \alpha\ \beta,\ \alpha\ \gamma,\ \alpha\ \alpha,\ \alpha'\ \beta',\ \alpha\ \gamma'$$
$$\beta\ \beta,\ \beta\ \gamma,\ \beta\ \alpha',\ \beta\ \beta',\ \beta\ \gamma'$$
$$\gamma\ \gamma,\ \gamma\ \alpha',\ \gamma\ \beta',\ \gamma\ \gamma'$$
$$\alpha'\ \alpha',\ \alpha'\ \beta',\ \alpha'\ \gamma'$$
$$\beta'\ \beta'\ \beta'\ \gamma'$$
$$\gamma'\ \gamma'$$

and if the angles are put together in threes the number of the combinations will be fifty-six, &c. At the same time, by having two sides of the triangles A equal to two sides of the triangles B the operation of placing the several triangles in position, and particularly the representation of regular figures or designs, is facilitated.

For puzzles of the ordinary size, as represented in Fig. 1 of the drawings, I propose to use thirty-two triangles of each kind, sixty-four in all, and with this number of pieces I am enabled to represent a very great variety of figures or designs, so that the toy will be able to try the ingenuity of grown persons as well as of children for a long time.

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

The employment or use in a puzzle of two different sets of triangles, A B, which are of such a shape that two sides of each triangle of one set are equal to two sides of each triangle of the other set, and the three angles of each triangle are different from each other, and the angles of the triangles of one set different from those of the other set, substantially as and for the purpose herein shown and described.

I. U. MUELLER.

Witnesses:

FRIEDR. BEHR,

H. GRÜNEWALE.