(No Model.)

T. A. FRAZER.

PUZZLE.

No. 446,513. Patented Feb. 17, 1891.

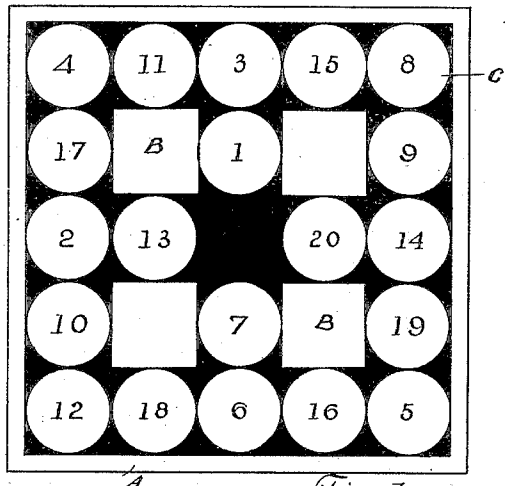

Fig. 1.

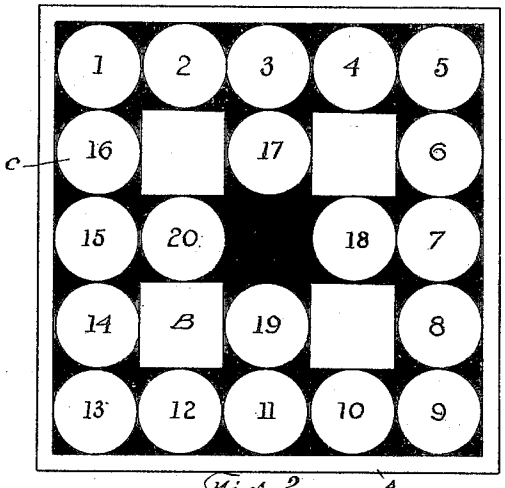

Fig. 2.

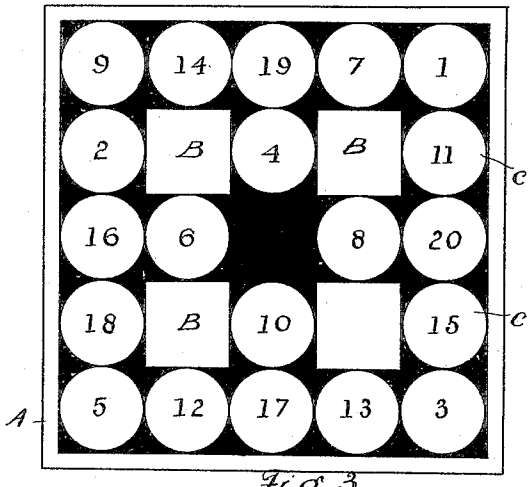

Fig. 3.

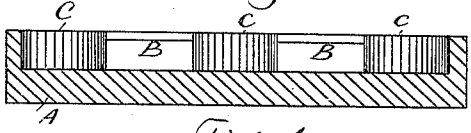

Fig. 4.

WITNESSES:

C. J. Rockwell.

Wm. M. Lomell

INVENTOR

Thornton A Frazer

BY A. J. O'Brien

ATTORNEY.

UNITED STATES PATENT OFFICE.

THORNTON A. FRAZER, OF HIGHLANDS, ASSIGNOR OF TWO-THIRDS TO JAMES F. BENEDICT AND GLEN W. HUNTINGTON, BOTH OF DENVER, COLORADO.

PUZZLE.

SPECIFICATION forming part of Letters Patent No. 446,513, dated February 17, 1891.

Application filed November 19, 1890. Serial No. 371,971. (No model.)

To all whom it may concern:

Be it known that I, THORNTON A. FRAZER, a citizen of the United States of America, residing at Highlands, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Puzzles; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to a novel form and construction of puzzle designed to amuse as well as test the ingenuity and skill of the user, said device being of simple construction, small cost, and easily operated.

The contrivance consists, generally stated, of a small square box of peculiar construction containing movable numbered blocks to be arranged or manipulated so as to answer certain conditions.

The device will be fully understood by reference to the accompanying drawings, wherein is illustrated an embodiment of my invention, and in which—

Figure 1 is a plan view of the device showing the blocks placed in the box or receptacle miscellaneously and without design or order. Fig. 2 is a similar view of the device showing the blocks arranged so as to answer one of the conditions. Fig. 3 shows another order of arrangement. Fig. 4 is a cross-section taken through the box.

In the views wherein similar reference-characters indicate corresponding parts of the device, let the letter A designate a square box or receptacle provided with a short rim or flange. The bottom of this box is provided on its interior with four stationary blank blocks or raised portions B, preferably square in plan view and of a height preferably somewhat less than the rim of the box. These parts B may be either formed integral with the bottom of the box or made fast thereto in any desired manner.

The movable numbered blocks I will designate by the letter C. They are preferably round in plan view, of the same height as the rim of the box, and flat on the top and bottom. There must be twenty of these blocks, each provided with a different number formed on its face, the numbers used being taken consecutively from one to twenty.

The stationary blocks B are so placed that there is room for a block C to move between each two blocks B, and also room for a block C between the adjacent rim of the box and each block B.

The blocks B and C may be of any convenient size, blocks B being perfectly square in plan view and of such size that the movable round blocks could be formed therefrom; or, in other words, the diameter of the round blocks is about equal to the length of one side of a stationary block. The size of the blocks having been determined, the box A is so constructed that the interior of its bottom is square, the length of each side being equal to five diameters of the movable blocks, or a little more, since the blocks should have sufficient room to permit of their being easily moved into position.

It will be observed from the foregoing description that box A is of sufficient size to contain twenty-five movable blocks C, whether round or square. If square these blocks would occupy the entire space of the bottom of the box, and if round the space occupied by the corners of the squares would be blank. As before stated, I prefer to make the stationary blocks square and the movable blocks circular. These are the forms shown in the drawings, and probably will be found most convenient; but I do not wish to limit myself thereto, inasmuch as it is obvious that other forms might be employed.

From what has been stated regarding the size of the box and the number of blocks, both stationary and movable, it is obvious that when all the blocks are in the box there will be one blank space. This is necessary in order to give the user an opportunity to move or manipulate the blocks in his efforts to solve the problem of their proper arrangement. The solution of the puzzle consists in

manipulating the blocks C so as to bring about either of two arrangements, those arrangements being respectively shown in Figs. 2 and 3.

It will be observed that the arrangement shown in Fig. 2 consists in placing the movable blocks in regular or consecutive order, according to their numbers, around the outer portion of the box and adjacent to or in contact with the interior of the rim, and placing the remaining four blocks in the spaces between the stationary blocks B, while in the arrangement shown in Fig. 3 the sum of all the numbers on the blocks in each alternate row in any direction, beginning with the outer row, amounts in the aggregate to fifty.

It must be remembered, and it will of course be understood, that in manipulating the movable blocks they must not be lifted from the bottom of the box, but must be moved in contact therewith. In other words, in moving a block it must not be lifted over any other block, but must be moved practically in contact with the bottom and in continuous line during each solution of the puzzle. I have demonstrated that both the solutions mentioned are possible. The time required to arrive at the result will of course depend upon the skill and ingenuity of the operator. Other arrangements of these blocks might be mentioned requiring the exercise of more or less skill and judgment in their solution, but the two illustrated and described are thought preferable and sufficient to give a clear understanding of the principle of the device.

Having thus described my invention, what I claim is—

The combination, with a square box, of twenty movable blocks substantially of uniform size, said blocks being numbered consecutively from 1 to 20, the box being five blocks square on its interior and provided with four stationary blank blocks so placed that a movable block may be placed between each two stationary blocks and also between each stationary block and the adjacent rim of the box, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

THORNTON A. FRAZER.

Witnesses:
FRED. W. FELDWISCH,
WM. MCCONNELL.