Aug. 18, 1959 J. PESTIEAU 2,900,190

SCIENTIFIC PUZZLE

Filed July 2, 1956

FIG. 1

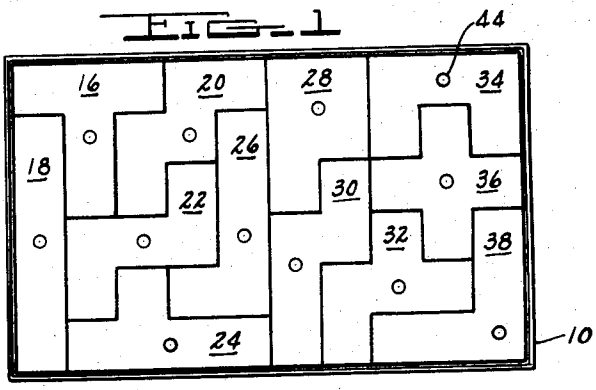


FIG. 4

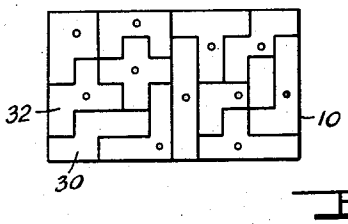


FIG. 3

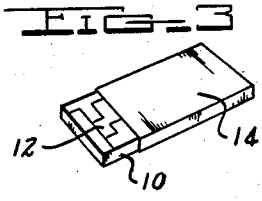
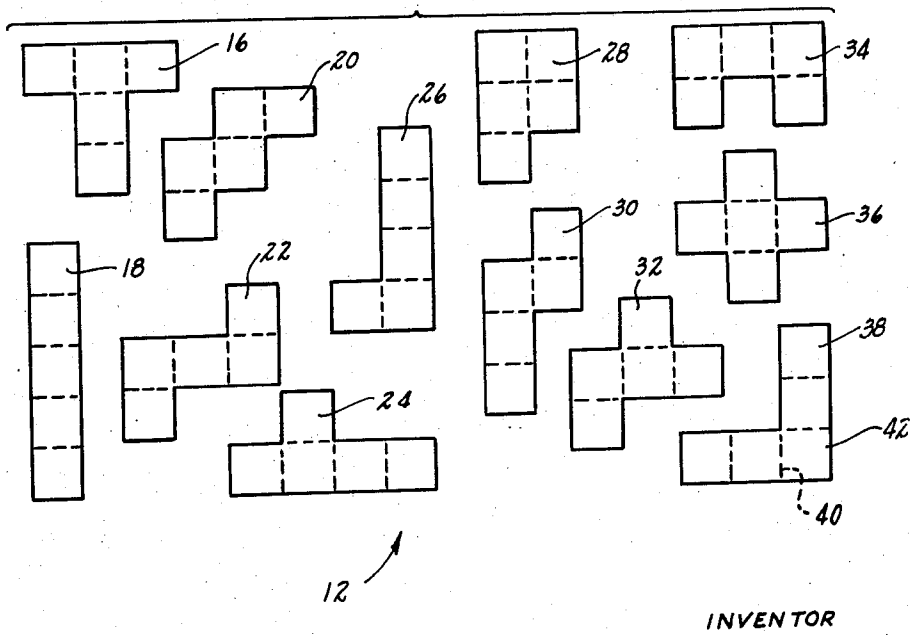


FIG. 2



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SCIENTIFIC PUZZLE

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The present invention relates to a game, and more particularly to a puzzle for stimulating the mental faculties.

Puzzles of this character have frequently been developed, but generally have proved to be unsatisfactory because they present a limited number of challenges, and usually only one to the person being tested. In use, such puzzles have very little value after being solved, since thereafter, the user can easily go through the known steps of arriving at the solutions.

It is an object of the present invention to provide a novel puzzle which is constructed and arranged so that a large number of separate and distinct problems can be posed for which answers can be derived, such problems being solved by the same analytical approach but by different steps, thereby providing a puzzle of unlimited life and utility.

It is another object of the present invention to provide a puzzle of the foregoing character which can be made small in size so that it can be carried in a pocket or handbag and which is easy to operate so that it can readily be put into use in various environments by one or more persons.

Another object of the present invention is to provide a puzzle of the foregoing character which is constructed and arranged so that it is suitable for mass production manufacture and can be made and assembled at low cost.

Other objects of this invention will appear in the following description and appended claims, reference being had to the accompanying drawings forming a part of this specification wherein like reference characters designate corresponding parts in the several views.

In the drawings:

Figure 1 is a plan view of one embodiment of the present invention with the cover removed;

Figure 2 is an exploded view of some of the component parts of the embodiment with broken lines being added for the purpose of illustrating the size and shape of such parts;

Figure 3 is a perspective view of the complete embodiment drawn to a reduced scale; and

Figure 4 is a plan view drawn to a reduced scale showing the same embodiment with the parts rearranged to illustrate another solution to the puzzle.

Before explaining the present invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawings, since the invention is capable of other embodiments and of being practiced or carried out in various ways. Also, it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation.

Referring now to the drawings, a more complete description of the invention will be given. The preferred embodiment includes the box **10**, a plurality of pieces **12**

fitting within the box **10**, and a cover **14** for closing the box **10** when the puzzle is not in use.

The pieces **12** are all different in shape but have the same surface area. The individual pieces can best be seen in exploded Figure 2 and are identified by the even reference numerals starting with **16** and ending with **38**. The broken lines **40** appear in this figure of the drawing merely to illustrate that each of pieces **12** is formed from five equal squares **42**. It will be observed also that the pieces **12** have different configurations. Thus, piece **16** has five squares forming a T-shaped member, piece **18** has five squares in alignment, etc.

The box **10** is rectangular in shape and in the illustrated embodiment has one of its surface dimensions equal in length to ten aligned squares **42** and its other surface dimension equal in length to six squares **42**. Thus, the surface area of the box **10** is equal to sixty squares **42**. Furthermore, since there are twelve individual pieces identified by even numbers from **16** to **38**, each containing a surface area of five squares **42**, the total surface area of the pieces **12** also equals sixty squares **42**. Therefore, if the individual pieces identified by even numbers from **16** to **38** are properly arranged in box **10**, they will fit therein and will completely cover the surface area of box **10**. It will be found that a large number of solutions can be found for properly fitting the pieces **12** in box **10**.

It will be observed that the individual pieces identified by even numbers from **16** to **38**, Figure 1, have indicia **44** which appear on one side only. These may or may not be used, as desired, to reduce or increase the number of possibilities of solution of the puzzle. Thus, pieces identified by even numbers from **22** to **32** have different configurations when the surfaces having indicia are uppermost than when inverted. The contestant may be required to insert all the pieces in the box **10** with indicia **44** showing, or to simplify the problem he may be allowed to invert one or more of the pieces thereby progressively making the problem easier by increasing the number of effective working pieces.

By way of example, reference is made to Figures 1 and 4 which show two different solutions which are quite similar, differing in the changed positions of pieces **30** and **32**. Another distinction, of no consequence, is the interchanging in Figure 4 of the right and left halves of the pieces in Figure 1; that is, the pieces in the left half of Figure 1 are arranged identically the same as in the right half of Figure 4, and the pieces in the right half of Figure 1 are arranged in the left half of Figure 4. Referring again to pieces **30** and **32**, it will be observed that the piece **30** has been inverted in order to arrive at the solution shown in Figure 4, and therefore, it can be seen that if the contestant is permitted to invert the pieces at will, he has increased the number of possible solutions and has made his task more simple.

Still other conditions may be imposed to increase the difficulty of solving the puzzle. Thus, it may be required that one of the pieces **12** be placed in a particular position in the box **10**, such, for example, as in one of the corners. Likewise, one or more of the pieces identified by even numbers from **22** to **32** may be required to be inverted with respect to the other pieces.

In all of these problems that may be imposed, the person or persons working the puzzle may be timed to determine how rapid he or they are in arriving at a solution. If desired, one or more contestants may compete against the like number of contestants having a separate puzzle.

From the foregoing it can be seen that large numbers of problems can be set up for the individual or a group of individuals, each problem having one or more differ-

ent solutions. Thus, the usefulness of the invention as a puzzle or game is not terminated when one solution is found, because the number of conditions that can be imposed on the contestants is very large and the solutions are even more numerous.

The invention does not require the exact dimensions set forth for the box **10** and the pieces identified by even numbers from **16** to **38**. The essential requirement is that the total surface area of the individual pieces equal the surface area of the box **10** and that the individual pieces each have a different configuration. Thus, if desired, the box could have a surface area equal to ninety squares with the sides having dimensions equal respectively to nine and ten aligned squares. There could then be fifteen pieces, each of a different configuration and each having a surface area equal to six squares.

It is preferred that the pieces **12** be formed from any suitable plastic material. The box **10** can be formed from a similar material as can the cover **14**. However, the latter can be made from cardboard or like substance. It will be appreciated that the box **10** and pieces **12** may be subjected to a great deal of handling so they should be formed from a material that will not be readily soiled or worn from such use. Plastic materials are very suitable for this purpose, and the parts can be manufactured at relatively low cost.

Having thus described my invention, I claim:

1. A game comprising a member having a flat rectangular area, said area being divisible into a plurality of squares of equal size, and a plurality of flat pieces of equal areas but different configurations having a total area equal to that of said rectangular surface, the areas of each of said pieces being divisible into a plurality of squares equal in size to the first mentioned squares.

2. A game comprising a box having an open top and a flat rectangular bottom, said bottom being divisible into a plurality of squares of equal size, and a plurality of flat pieces adapted to fit into said bottom and having a combined area equal to that of said bottom, said pieces having their upper surface areas of such size as to be divisible into an equal number of squares of the same size as the first mentioned squares, and each of said pieces having a different configuration than the other pieces.

3. A game comprising a box having an open top and a flat rectangular bottom, said bottom having six units of length on one side and ten units of length on the other side to provide an area of sixty square units, and twelve flat pieces each of a different configuration and formed from five of such square units, said twelve flat pieces fitting together so as to cover said bottom.

4. A game comprising a box having an open top and a flat rectangular bottom, said bottom having six units of length on one side and ten units of length on the other side to provide an area of sixty square units, and twelve flat pieces each of a different configuration and formed from five of such square units, said twelve flat pieces fitting together so as to cover said bottom, one side of said pieces having indicia to distinguish from the opposite side.

5. A game comprising a box having an open top and a flat rectangular bottom, said bottom having six units of length on one side and ten units of length on the other side to provide an area of sixty square units, and twelve flat pieces each of a different configuration and formed from five of such square units, said twelve flat pieces fitting together so as to cover said bottom, one side of said pieces having indicia to distinguish from the opposite side, and a cover for fitting over said box when the game is not being played.

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