Jan. 6, 1931. A. G. DANA 1,787,473

PUZZLE

Filed June 22, 1929 2 Sheets-Sheet 1

Fig. 1.

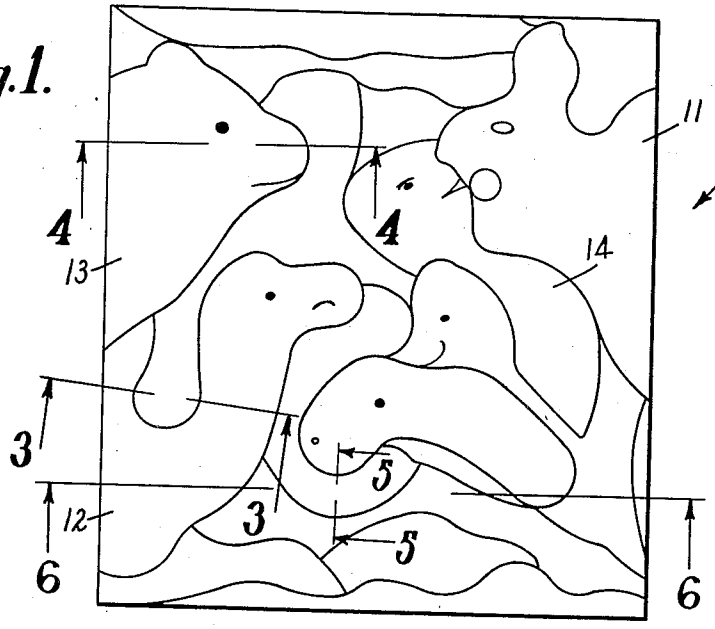
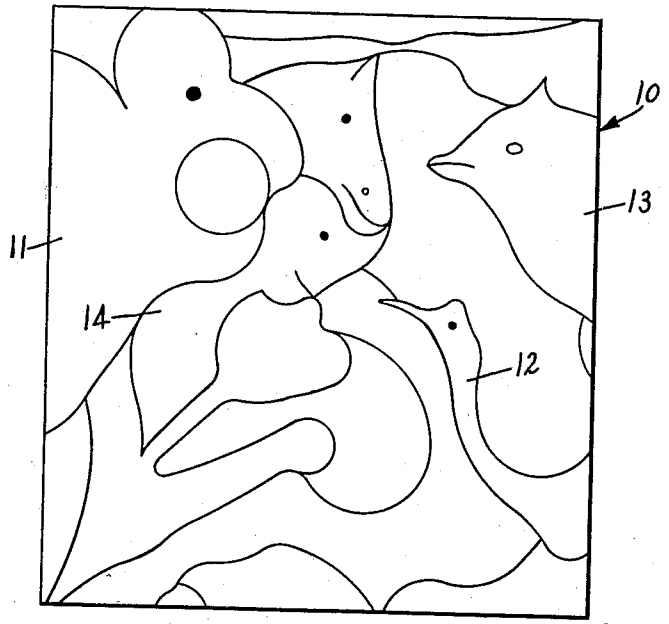



Fig. 2.




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Fig. 3.

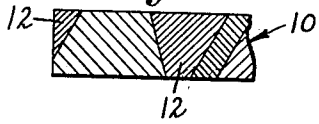



Fig. 4.

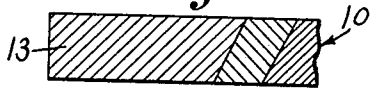



Fig. 5.

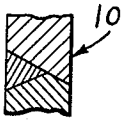



Fig. 6.

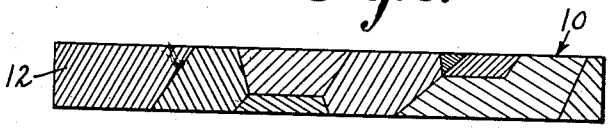



Fig. 7.

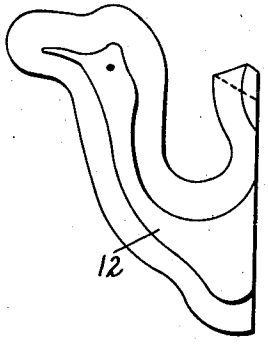
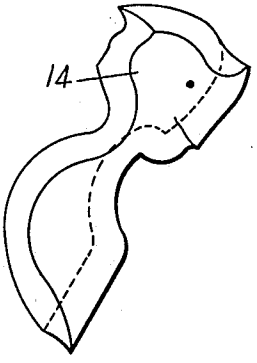



Fig. 8.




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# UNITED STATES PATENT OFFICE

ARNOLD G. DANA, OF NEW HAVEN, CONNECTICUT

## PUZZLE

Application filed June 22, 1929. Serial No. 372,858.

This invention relates to improvements in puzzles and more especially to improvements in what are generally known as jig saw puzzles.

Jig saw puzzles as heretofore known have generally comprised rectangular sheets of either wood or cardboard having pictures printed, or painted thereon, or affixed thereto in some manner, the sheets being sawed or otherwise fashioned into a number of more or less arbitrary parts which are fitted together by the user in solving the puzzle, the latter being assisted in bringing together the parts of the puzzle not only by the shapes of the pieces themselves but by the parts of the pictures apearing thereon.

It is in general an object of the present invention to provide a puzzle somewhat of the jig saw type but which is more complex than those now known or used. By making the puzzle more difficult to assemble, it is caused to appeal to older children and adults, who find in it difficulties worthy of their skill, and it creates and holds interest in and gives entertainment to a large class of persons who are intrigued by the problems presented. The scope of a puzzle of this general character is therefore considerably increased.

Another object of the invention is to provide a puzzle in which a part, if not all, of the individual pieces are shaped to represent either readily recognizable or fanciful figures.

Another object of the invention is to provide a puzzle of the above type in which certain or all of the pieces show a figure of one form when viewed from one side and a figure of an entirely different shape or form when viewed from the opposite side. In this way, it is possible, by giving the opposite faces of the pieces the same general color or character, to inject a substantial problem into the location or positioning of each piece, which, if upside down, contains in itself little or no indication of that fact. Manifestly, this adds considerably to the difficulty of solution.

To these and other ends, the invention consists of the novel features and combination of parts to be hereinafter described and claimed.

In the drawings,

Figures 1 and 2 show the opposite sides of a puzzle according to my invention;

Figures 3, 4, 5 and 6 are sectional views along lines 3—3, 4—4, 5—5 and 6—6, respectively, of Figure 1; and

Figures 7 and 8 are plan views of individual pieces of the puzzle.

Referring to the drawings in which I have illustrated my invention by showing a preferred embodiment of the same, the reference numeral 10 indicates, in general, the improved puzzle which comprises a number of parts, such as 11, 12, 13 and 14 which are cut, if preferred, from a single piece of sheet material, and which in the preferred embodiment illustrated, form, when assembled together, a substantially rectangular sheet. If desired, the shapes of the several parts of the puzzle, as viewed from either or both sides, may be entirely arbitrary. A feature of the present invention resides, however, in the use of parts representing either readily recognizable or fanciful figures. For example, it will be readily understood that the part designated by the reference numeral 12 represents the head and part of the body of a camel, while the part designated by the reference numeral 13 represents the head of a bear.

According to the invention, the several pieces of the puzzle are not provided with sides which are perpendicular to the upper and lower surfaces, as in the usual jig saw puzzle, but as may be readily understood from the cross-sectional views shown in Figures 3 to 6, inclusive, the sides of the individual pieces are arranged at various angles to the upper and lower faces, the angles being such that certain, if not all, of the pieces are shaped to represent one form of figure, when viewed from one side, and an entirely different form, when viewed from the opposite side. For example, the part indicated by reference numeral 12 is in the form of a camel, as viewed in Figure 1, and in the form of an ostrich, when viewed from the opposite side, as in Figure 2, this being more clearly illustrated by Figure 7. Likewise, the part indicated by the reference numeral 14 in Figure 1 is of an entirely different shape, when viewed from the opposite side, as in Figure

2, both sides of the figure being shown in Figure 8, in which the part 14 is separated from the remaining parts of the puzzle.

The particular puzzle which I have selected for illustration is what I term a "jungle" puzzle, inasmuch as the resulting pictures on both sides represent a variety of animal figures. In the particular case shown, the outline of each part is that of an animal and this is true with respect to the figures at both faces of the sheet. It will be understood, however, that other figures might be represented, and that while the figures represented on one face might be recognizable as such, the figures on the opposite face might be quite arbitrary and unrecognizable. It is also obvious that it is not necessary in all cases to have the cuts or separations follow the outlines or peripheries of the individual figures or representations, as in the case illustrated. While various modifications may be made in these respects, I prefer, however, to shape the pieces as figures of animals or the like, which, when fitted together, form a composite of figures of one general class, and to utilize recognizable but different figures of the same class at the opposite faces of the sheet.

Preferably, the opposite faces of the sheet are finished in the same way and have the same general appearance so that a given piece which is being placed in position contains in itself no indication as to whether or not it is upside down with respect to the picture or effect to be formed. When the various parts of the puzzle are separated and some of the parts reversed with respect to the others, it is more difficult to determine the corresponding sides of the several parts than in the case of the ordinary jig saw puzzles, wherein the parts present the same appearance or shape when viewed from either side.

It will be noted that certain parts of the puzzle do not extend from the upper to the lower face of the puzzle, and that the saw cuts separating the pieces are arranged at various angles suitable for bringing out different shapes of the parts, as viewed from opposite sides, and adding to the complexity of the puzzle as a whole. For example, it will be observed from Figs. 3 and 6 that some of the flat parts have diverging side surfaces fitting into upwardly flaring recesses, while other parts fit downwardly flaring recesses, all of these parts being individually separable. It will also be observed from Fig. 3 that a certain part or parts, instead of having divergent side surfaces, may have, at one or more places, both of its side surfaces angled in the same sense with respect to the plane of the sheet. While the puzzle may be subdivided into its several parts by the use of a jig saw, it will be readily understood that the cuts or separations between the parts may be formed in other ways as, for example, by molding the individual parts in the required shapes.

While I have shown a preferred embodiment of my invention, it will be understood that it is not to be limited to all the details shown, but is capable of modification and variation within the spirit of the invention and the scope of the appended claims.

What I claim is:

1. In a puzzle, a relatively thin sheet-like piece of material having upper and lower faces, said sheet being divided into a plurality of interfitting parts, certain of said parts having the marginal edge portions of one face thereof shaped to represent one form of figure and the opposite face shaped to represent a different form of figure.

2. In a puzzle, a relatively flat sheet of material having upper and lower faces, said sheet being divided into a plurality of interfitting parts, certain of said parts having one face thereof entirely different in shape from the opposite face thereof.

3. In a puzzle, a flat relatively thin piece of sheet material, said material being cut from face to face into a plurality of interfitting parts having parallel upper and lower faces and sides which are at an angle to the upper and lower faces, the angles of the sides of said parts relatively to the faces of said parts being different on different parts.

4. In a puzzle, a relatively flat piece of sheet material having parallel upper and lower faces, said material being cut from face to face into a plurality of interfitting parts, the angle of the cut on one side of a given part relatively to said faces being different from that on another side of the part.

5. In a puzzle, a relatively flat piece of material cut from face to face into a plurality of interfitting parts, the angles of said cuts relatively to the faces of said parts varying from part to part, and the angle on one side of certain of said parts being different from the angles on other sides of the respective parts.

6. In a puzzle, a plurality of relatively flat figures representing by the outlines of their edge portions animals or the like, said figures interfitting to form a substantially flat sheet, the side faces of certain of said figures being at acute angles to the surface of the sheet.

7. In a puzzle, a relatively flat piece of material cut from face to face into a plurality of parts, the angle of said cuts relatively to the faces of certain of said parts varying about the periphery of said parts, whereby the parts are provided with opposite faces having shapes of different forms.

8. In a puzzle, a relatively flat piece of material having upper and lower flat faces, said material being cut from face to face into a plurality of parts, the angles of said cuts relatively to the faces of said parts varying from part to part, and the angle of said cuts

relatively to the faces of certain of said parts varying about the periphery of said parts, whereby said parts are provided with opposite faces having shapes of entirely different form.

9. In a puzzle, a flat sheet of material divided from face to face into a plurality of interfitting parts, certain of said parts having side edges outlining certain figures at one face of the sheet, and outlining figures of different shape at the other face.

10. A puzzle having a plurality of pieces having flat parallel upper and lower faces which may be fitted together to form a flat sheet, some of said pieces having upwardly diverging side surfaces while others of said pieces have downwardly diverging side surfaces.

11. A puzzle of the type described having pieces with angled side surfaces extending in opposite directions with respect to the plane of the sheet, and a piece having angled side surfaces extending generally in the same direction with respect to the plane of the sheet, each of said pieces having flat parallel upper and lower faces.

12. In a puzzle, a flat sheet of material cut from face to face into a plurality of parts, the angles of the sides of one of said parts relatively to the faces of the sheet varying from place to place in the peripheral contour of such part, said parts being provided with flat parallel upper and lower faces.

13. In a puzzle, a plurality of relatively flat figures representing by the outlines of their side edges animals or the like, said figures being shaped to fit together into a a substantially flat sheet and having side surfaces at various angles to the plane of the sheet.

14. A puzzle of the jig saw type comprising a relatively thin flat sheet of material cut from face to face to form a plurality of interfitting non-symmetrical pieces, said sheet being cut along lines presenting acute angles to the plane of the sheet.

15. A puzzle of the jig saw type comprising a relatively thin flat sheet of material cut from face to face to form a plurality of interfitting non-symmetrical pieces, said sheet being cut along lines presenting acute angles to the plane of the sheet, the angle cuts at different parts of the sheet varying from each other in degree of angularity.

In witness whereof, I have hereunto set my hand this 20th day of June, 1929.

ARNOLD G. DANA.