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(54) **COMBINABLE TOY SET OF ELEMENTS WITH PLAYING BOARD.**

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(73) Proprietor: **HIDVEGI, Valéria**
Hegedüs Gy. u. 17
H-1136 Budapest(HU)

(72) Inventor: **HIDVEGI, Valéria**
Hegedüs Gy. u. 17
H-1136 Budapest(HU)

(74) Representative: **Patentanwälte Viering & Jentschura**
Steinsdorfstrasse 6 Postfach 22 14 43
W-8000 München 22(DE)

Rank Xerox (UK) Business Services

Description

The invention relates to a combinable toy set which comprises a playing board and flat prismsmatic elements that can be placed on the playing board and fitted-together. According to their shapes the elements can be triangles, geometric forms defined by linear or circulanr boundary lines, furthermore squares and rectangles.

A number of types ot toy sets are known from which figures can be set. In one of such toys, which corresponds to my earlier invention disclosed in WO 85/03453 and commercially available under the trade name 'Piky-toy' produced by Piky S.A. France, all of the elements are square elements of the same basic size wherein the square surface of the elements can be divided into several surfaces of different colours, including triangular, and rectangular surfaces and surfaces having shapes defined by circular boundary lines. Each of the rectangles corresponds to the half of said square, each of said triangles is a right-angled and has two of its edges on the ends of one side of said square and its third edge on the midpoint of one of the other sides of the square, and the circular boundary lines have its center of curvature at an edge of the square, at the midpoint of a side of the square or at the middle point of the square and have an radius of curvature corresponding to the side length of said square, a half thereof and a quarter thereof, respectively. Such toys can be used for fitting closed surface areas only which imposes limitations on the number of pictures that can be created thereby. One of these limitations lies e.g. in that any blank space required between motives in the picture to be created must be fitted by square elements which bear no pattern. The predetermined size of the square elements imposes a limitation primarily in case of creating curved contour lines.

Further types of such toys are the various kinds of mosaic toys. The use of conventional rhomboidal or triangular elements limits the forming of fine details. For obtaining a finer picture resolution very small elements should be used which require, however, long time for creating mare complex figurative compositions, and the younger generation which has the largest interest to such toys have neither patience nor talent for such time-consuming activities. From quite young ages onwards children are nevertheless eager to create aesthetically pleasing, dynamic and expressive pictorial compositions. This eagerness for creating figures with appropriately fine details cannot be satisfied by any toy which would allow the accomplishment of such creations in acceptable period of time.

The object of the invention is to provide a toy set of the kind defined which enables the formation of finely structured, compositions within shorter periods of time and by using comparatively small number of elements.

The invention is based on the recognition that by choosing elements with suitable form and size related to a predetermined basic size, the time required for forming compositions can be reduced if a pattern is provided in the middle part of a playing board as if it were constituted by these elements and if sufficient blank place is provided around the pattern for the player to continue the composition with the elements.

According to the invention as defined in claim 1 a combinable toy-set has been provided for forming pictorial compositions, that comprises a playing board and flat prismatic elements that can be placed on the playing board and fitted together, wherein the form of the elements can be triangular, square or rectangular or can take shapes defined by linear or circular boundary lines, in which the elements can be fitted in a square which has a side length equal to a basic size or in a rectangle corresponding to the half of the square or in a further square with side which is one and a half times as long as the basic size, or in case of triangular form at least one side of the triangle is equal to the basic size and the triangle is right-angled, isosceles or equilateral and the angles of any of the triangles are 30° or a multiple thereof, and in the medium portion of the playing board a pattern is provided which has a minimum size in any direction four times of the basic size and the pattern is composed of forms corresponding to the form of the elements, and the playing board comprises blank area around the pattern which is at least six times as wide as the basic size when measured at least in three directions.

It is preferable if the combinable toy-set has elements with different colors, and each element is single-colored.

The utilization of the space on the playing board will be preferable if the blank area on the playing board is at least six times as wide in all directions as the basic size.

It is preferable if means e.g magnetic means are provided on the elements by which their position can be releasably fixed on the playing board.

The work of creating compositions is facilitated if sample means being provided that comprise figures that include the pattern and can be constituted by the elements, the size of the sample means should preferably correspond to that of the playing board. The sample means can consist of a plurality of sheets and at least an end sheet thereof comprises a pattern and further sheets of the sample means define apertures corresponding to the contour line of the pattern on the end sheet, whereby

the pattern becomes visible through any of the apertures. In that case the sample means comprises foldable sheets.

The composition will look nicer if the pattern is swelling out of the plane of the playing board with a height corresponding substantially to the thickness of the elements.

The toy-set should comprise triangular elements, square or rectangular elements, as well as elements with geometric forms defined by linear or circular boundary lines. Preferably, the toy-set comprises at least eight different types of these elements.

The toy-set according to the invention enables indeed the formation of pleasing pictorial compositions even if it uses only a few number of elements, it improves children's sense to proportions, creativity and develops their taste to forms, and owing to the presence of the pattern, the time required for creating nice compositions is reduced.

The toy-set according to the invention will now be described in connection with preferable embodiments thereof, in which reference will be made to the accompanying drawings.

In the drawing:

Fig.1 a to h	show the elements used in the toy-set;
Fig. 2	shows stylized open motives formed by the elements;
Fig. 3	shows examples for the connection of triangular elements;
Fig. 4	shows a square with curved motives in the inner part;
Fig. 5	shows the connection of the elements in case of a lion compositon;
Fig. 6	shows a foldable sample means;
Figs. 7 to 16	show various patterns and animal figures comprising these patterns;
Fig. 17	shows a playing board with a hexagonal pattern; and
Figs. 18 to 22	show different animal figures with the pattern of Fig. 17.

Fig. 1 shows the elements usable in the set according to the invention. Fig. 1a. shows a square with side A which has a circular opening in the middle. The center point of the circle is located in the point of intersection of the diagonal lines of the square and the diameter thereof is equal to the half of the side length i. e. to A/2. The form of element shown in Fig. 1b is defined also by a square with side length A, but a quarter of a circle is missing from a corner region of the square and the center of this circular arc falls on the associated corner, and the radius of the arc is equal to the half of the side-length.

The third element shown in Fig. 1c can also be drawn in a similar square with sides A and it consists of a quarter of an annular ring. The center of the annular ring is in a corner of the square and the radius of the smaller quarter arc that forms the inner boundary of the ring is equal to the half of the side length, while that of the larger quarter arc is equal to the side length. The fourth element shown in Fig. 1d can be obtained from the third one by deleting the inner boundary thereof define ed by the smaller circular arc section and by adding the remaining portion of the square that has a side length A to the annular ring. This fourth element can also be fitted in the square which has the side length A.

Figs. 1g and 1h show the seventh and eighth elements as a pair of symmetrical right-angled triangles which are congruent and their two acute angles are 30° and 60°, while the length of the longer side is A and that of the shorter one is A/2. Both of these elements can be fitted in a rectangle with side lengths of A and A/2, respectively. The fifth element shown in Fig. 1e is defined by such a rectangle. The sixth element shown in Fig. 1f can also be fitted in this rectangle and this element is defined by the longer side of the rectangle and by a half circle with a radius of A/2 which has a center located at the midpoint of the longer side.

The ninth element shown in Fig. 1i is similar to the second element of Fig. 1b and its form can be defined as a square with side length of 1.5 A and from a corner region thereof a quarter of a circle with radius A as shown in Fig. 1d is missing. The tenth element shown in Fig. 1j is an isosceles triangle with side length A and the sides thereof close an angle of 120°. Finally, the eleventh element shown in Fig. 1k is an equilateral triangle with sides A. The set has a twelfth element not shown in the drawing which is a square with sides A.

The elements of the set according to the invention are preferably flat, since their basic feature is determined by the form of their surface. The elements can be implemented by painted wooden or plastic plates or by metal or cardboard plates, and it is preferable if respective magnet pieces are either fixed on or embedded in their rear surfaces to facilitate thereby the releasable but stable arrangement of the associated element on a playing board that can be made e.g. by a painted metal plate. The use of magnets can be replaced by any other means which is capable of providing releasable positioning e.g. a self-adhesive rear surface or a napped surface provided at a portion of the rear side which can be used like a tear-lock. The respective elements can be single-colored, however, the toy set might comprise elements with identical form but differing color or color-shade.

The basic size A has outstanding significance

in determining the form of the elements, since this basic size ensures the perfect and versatile engagement thereof. The harmoniously matching system of circular arcs and triangles enables the setting of a large number of patterns truly imitating natural forms even by using a toy set with very limited number of elements. In contrast to conventional mosaic-like toy sets the one designed according to the invention enables the setting of characteristic, lively and aesthetically pleasing configurations which can have closed or open shapes as well.

Fig. 2 shows a stylized flower configuration which has a middle part closed by a waving curved line constituted by the semicircular elements and an adjoining open ornamentation of a tulip pattern. The differently hatched lines in the interior of the configuration intends to imitate the effect of colors. It can thus be visualized that by appropriate use of colors very lively forms can be set even within a configuration. At the edges of the otherwise closed configuration the harmony of the mutually matching circular arcs will be apparent for the viewer. The outer half ring is constituted by two elements as shown in Fig. 1c in which the semi-circular element of Fig. 1f is nicely fitted. Fig. 2 shows examples for the connection of triangular elements to the arced ones.

Fig. 3 shows the variations of the mutual connection of the four types of triangular elements and this exemplifies how a planar surface can be wholly set by such elements. The angles closed by the elements at such connections vary according to discrete steps of 30° and we can find examples there for any of the angles 30°, 60°, 90°, 12o°, 150° and 180°.

Fig. 4 shows the role of circles and arcs in a framing rectangular form. Owing to the use of inner curves the otherwise dull square form turns to be lively and pleasing. If the elements filling the area designated by the hatched line have color different from the color in the remaining area, then the inner form gets accentuated from the background by which it turns to be interesting.

Fig. 5 shows a lion set with very fine details. In the left half of the lion the thin lines designate the contour lines of the respective elements. The different parts of the lion shape exemplifies the partial and the full covering of a surface area. The thin broken range of the tail is enabled by the connection of the triangular elements. The design of the head and mane gives examples for the use of the closed and open arcs. The interior of the body is a closed area. This area can be filled with single-colored elements, however, if the illustrated curved details are made by elements of suitable color and shade, then the colors can emphasize the liveliness and dynamic properties of the composition.

In addition to showing the various ways of filling a playing surface the examples of Figs. 2 to 5 have illustrated how highly structured and detailed forms can be set on a small area with a comparatively small number and type of elements. The height of the lion figure is not higher than 20th of the basic size A and the width thereof including the tail is only 12th of this size A either.

The combinable toy-set according to the invention comprises one or more blank playing board provided in the center region with a specific pattern. The pattern is used in the middle of the playing board in order to offer the children assistance in forming more complex pictorial compositions which, without such assistance, would either represent a too difficult task for the child or require too much time or patience. The presence of the pattern develops children's ability for pattern recognition and for making various combinations.

The pattern (or patterns) can be made by conventional printing technique with such a scale and form as if it (they) would be formed by the separate elements of the toy-set. The use of patterns can be peferable that swell out of the plane of the playing board just to the extent of the thickness of the elements. The considerations described and illustrated in connection with Figs. 1 to 5 are true both for the pre-printed patterns and for the compositions formed by the elements around the patterns, since the so-obtained pictures are all built of the elements shown in Fig. 1.

Fig. 7 shows a blank playing board with a schematically illustrated pattern in the middle which can be fitted in a square. The side of the square is the sixth of the basic size A. The lines indicated within the pattern designate surface areas separated by regions of differing color or shade. Fig. 8 shows a cat formed on the playing board of Fig. 7 around the pattern. The pattern takes the central part of the body of the cat, and it is perfectly blended therein so that the contour lines thereof can hardly be distinguished from the adjacent environment. The contour line of the pattern has been drawn in Fig. 8 for the purpose of better identification only.

Fig. 6 shows the perspective view of a foldable booklet consisting of six sheets only. In the middle of the first and the last page hexagonal patterns are printed, while in the four medium sheets respective apertures are provided conforming to the contour lines of the patterns. If the booklet is opened at any of the medium pages, then the pattern appears which is covered by the aperture of the upper sheet The booklet can be used as a model for setting the playing boards of the toy-set, since the apertured pages illustrate the printed pictures which embody identical patterns. On the medium pages of the booklet of Fig. 6 a dog, a hen, a cat

and an ornamentical compositions can be seen.

Figs. 9. and 10. show a playing board with an other kind of pattern and a lion in Fig. 10 built around the pattern. The pattern is hardly recognizable in the lion's body.

Figs. 11 to 16 show various embodiments of the patterns and respective animal figures embodying such patterns. The form of the fox, the bear and the dog is really impressive and they are full of fine details. Of course, in an actual color form including several shades of colors the animal figures are much nicer than what the enclosed black and white drawing can illustrate. In the examples shown in Figs. 7 to 16 only one picture was iilustrated around each pattern. Fig. 17 shows a hexagonal pattern and Figs. 18 to 22 show animal figures which can be set on the same playing board around the same pattern. In all of these examples the pattern is organically integrated in the body of the animals, the distinction visible in the drawing are due to the fact that for the sake of illustration the contour lines of the pattern were shown with dashed lines.

The examples shown in the drawing have well demonstrated that the number of patterns can be fairly high and each pattern can be integrated in a number of compositions. The use of the toy-set can be facilitated first by various pre-printed samples, whereby the toy-set can offer even younger children the aesthetic pleasures of creating complex compositions. For older children, however, the creation of figures other than the ones shown in the samples can cause pleasure and develop imaginative ability as well as creativity.

The use of the elements shown in Fig. 1 enables in comparatively small areas the formation of finely detailed figures with dynamic contour lines. Let us e.g. observe the silhouette of the ram shown in Fig. 18 from which even the curly character of its hair can be seen. The harmonious fitting of the linear and curved line sections as well as the large freedom of forming various profiles follow from the shape of the basic elements and from their predetermined geometrical proportions relative to the basic size. The blank space on the playing board between the pattern and the edges of the board can be fairly small and this property can directly be derived from these principles. For the creation of many interesting pictures it is sufficient already if the width of the blank area is about the six times of the basic size A. The use of wider blank areas enhances, of course, the number of possible variations.

Claims

1. Combinable toy-set for forming pictorial compositions, comprising a playing board and flat prismatic elements that can be placed on the playing board and fitted together, wherein the elements include triangular, square and rectangular elements and elements having shapes defined by linear or circular boundary lines, wherein each of said elements is seized such that it fits into a square which has a side length equal to a basic size (A) or into a rectangle corresponding to the half of said square, or into a further square with a side being one and a half times as long as said basic size (A), wherein in case of triangular elements at least one side of the triangle is equal to said basic size (A) and the triangle is right-angled, isosceles or equilateral and the angles of any of said triangles are 30° or a multiple thereof, and in the medium portion of said playing board a pattern is provided which has a minimum size in any direction four times of said basic size (A) and the contourline of the pattern is designed in such a way that the pattern can be filled up by several of said elements, and said playing board comprises a blank area around said pattern which is at least six times as wide as said basic size when measured at least in three directions.

2. The combinable toy-set as claimed in claim 1, characterized in that means are provided on the elements for releasably fixing the position thereof on the playing board.

3. The combinable toy-set as claimed in claim 1, characterized by comprising sample means comprising a plurality of sheets and at least an end sheet thereof comprises a pattern and further sheets of said means define apertures corresponding to the contour line of said pattern on said end sheet, whereby said pattern becomes visible through any of said apertures.

4. The combinable toy-set as claimed in claim 3, characterized in that said sample means comprises foldable sheets.

5. The combinable toy-set as claimed in claim 1, characterized in that said pattern is swelling out of the plane of the playing board with a height corresponding substantially to the thickness of the elements.

6. The combinable toy-set as claimed in claim 1, characterized by comprising at least eight different types of said elements.

Patentansprüche

1. Kombinierbarer Spielzeugsatz zum Bilden bild-

licher Kompositionen, mit einem Spielbrett und flachen prismatischen Elementen, die auf das Spielbrett gelegt und zusammengesetzt werden können, wobei die Elemente dreieckige, quadratische und rechteckige Elemente sowie Elemente aufweisen, die Formen haben, die von geraden oder kreisförmigen Begrenzungslinien bestimmt sind, wobei jedes der Elemente so bemessen ist, daß es in ein Quadrat, das eine Seitenlänge in einer Basisgröße (A) hat, oder in ein Rechteck, das der Hälfte des Quadrates entspricht, oder in ein weiteres Quadrat paßt, dessen Seitenlängen dem Eineinhalbfachen der Basisgröße (A) entsprechen, wobei im Falle eines dreieckigen Elements wenigstens eine Seite des Dreiecks so groß wie die Basisgröße (A) ist und das Dreieck rechtwinklig, gleichschenklig oder gleichseitig ist und die Winkel jedes der Dreiecke 30° oder ein Vielfaches davon sind, und in dem Mittelbereich des Spielbrettes ein Muster vorgesehen ist, das in jeder Richtung eine minimale Ausdehnung von dem Vierfachen der Basisgröße (A) hat, und die Konturlinie des Musters so gestaltet ist, daß das Muster von mehreren der Elemente gefüllt werden kann, und das Spielbrett rings des Musters eine freie Fläche aufweist, die in wenigstens drei Richtungen wenigstens sechsfach so breit wie die Basisgröße ist.

2. Kombinierbarer Spielzeugsatz nach Anspruch 1, dadurch gekennzeichnet, daß an den Elementen Mittel zum lösbaren Festlegen ihrer Position auf dem Spielbrett vorgesehen sind.

3. Kombinierbarer Spielzeugsatz nach Anspruch 1, dadurch gekennzeichnet, daß ein Mustermittel mit einer Mehrzahl von Blättern vorgesehen ist und wenigstens ein Endblatt derselben ein Muster aufweist und weiter Blätter des Mittels Öffnungen bilden, die der Konturlinie des Musters auf dem Endblatt entsprechen, wodurch das Muster durch jede der Öffnungen hindurch sichtbar wird.

4. Kombinierbarer Spielzeugsatz nach Anspruch 3, dadurch gekennzeichnet, daß das Mustermittel faltbare Blätter aufweist.

5. Kombinierbarer Spielzeugsatz nach Anspruch 1, dadurch gekennzeichnet, daß das Muster eine Erhebung über der Ebene des Spielbrettes mit einer Höhe ist, die im wesentlichen der Dicke der Elemente entspricht.

6. Kombinierbarer Spielzeugsatz nach Anspruch 1, dadurch gekennzeichnet, daß er wenigstens acht unterschiedliche Typen der Elemente aufweist.

Revendications

1. Ensemble de jouets combinable pour former des compositions picturales, comprenant, d'une part, un tableau de jeu et, d'autre part, des éléments plats prismatiques susceptibles d'être placés sur le tableau de jeu et assemblés, les éléments comprenant des éléments triangulaires, carrés et rectangulaires ainsi que des éléments dont la forme est définie par des contours linéaires ou circulaires, chacun desdits éléments pouvant être saisi de manière à s'accorder avec un carré dont le côté correspond à une taille de base (A), ou avec un rectangle correspondant à la moitié dudit carré, ou avec un autre carré dont le côté est 1,5 fois plus long que ladite taille de base (A); au moins un côté du triangle étant, dans le cas d'éléments triangulaires, égal à ladite taille de base (A) et le triangle étant rectangulaire, isocèle ou équilatéral, et les angles de tout triangle mesurant 30° ou un multiple de 30°, et un dessin étant prévu dans la zone centrale dudit tableau de jeu, dessin dont la dimension minimum en toute direction mesure quatre fois ladite taille de base (A), la ligne de contour du dessin étant choisie de façon que le dessin puisse être rempli par plusieurs desdits éléments, et ledit tableau de jeu comprenant, autour dudit dessin, une zone vide au moins six fois plus large que ladite taille de base, en mesurant au moins dans trois directions.

2. L'ensemble de jouets combinable selon la revendication 1, caractérisé en ce que les éléments sont équipés de moyens pour fixer, de manière détachable, leur position sur le tableau de jeu.

3. L'ensemble de jouets combinable selon la revendication 1, caractérisé en ce qu'il comprend des moyens de modèle comprenant une pluralité de feuilles, dont au moins une feuille finale comprend un dessin, et d'autres feuilles desdits moyens définissent des orifices correspondant à la ligne de contour dudit dessin sur ladite feuille finale, de manière que ledit dessin devienne visible par toute orifice.

4. L'ensemble de jouets combinable selon la revendication 3, caractérisé en ce que lesdits moyens de modèle comprennent des feuilles pliables.

5. L'ensemble de jouets combinable selon la re-

vendication 1, caractérisé en ce que ledit dessin s'élève de plus en plus hors du plan du tableau de jeu et atteint une hauteur correspondant essentiellement à l'épaisseur des éléments.

6. L'ensemble de jouets combinable selon la revendication 1, caractérisé en ce qu'il comprend au moins huit types différents desdits éléments.

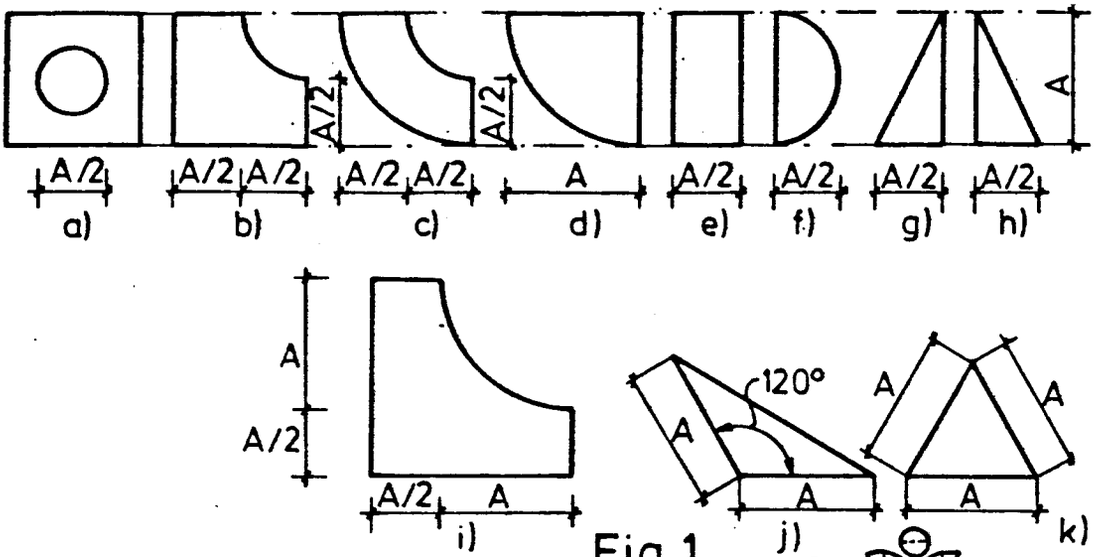

Fig.1

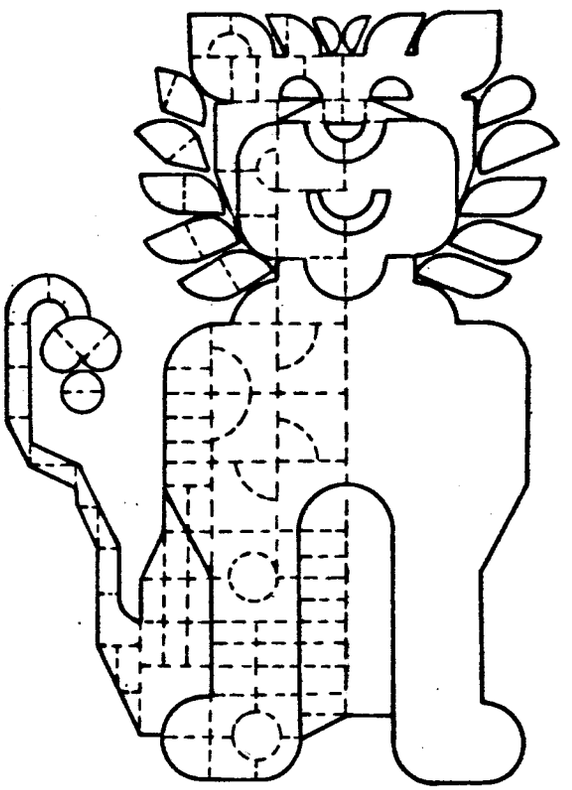

Fig.5

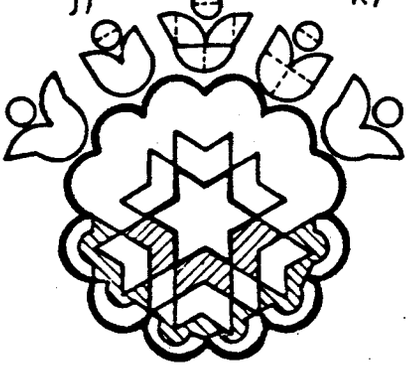

Fig.2

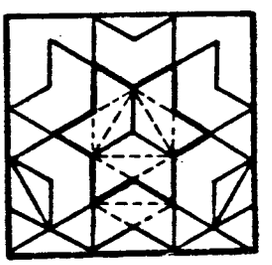

Fig.3

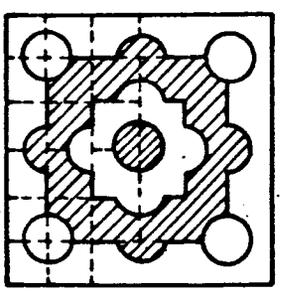

Fig.4

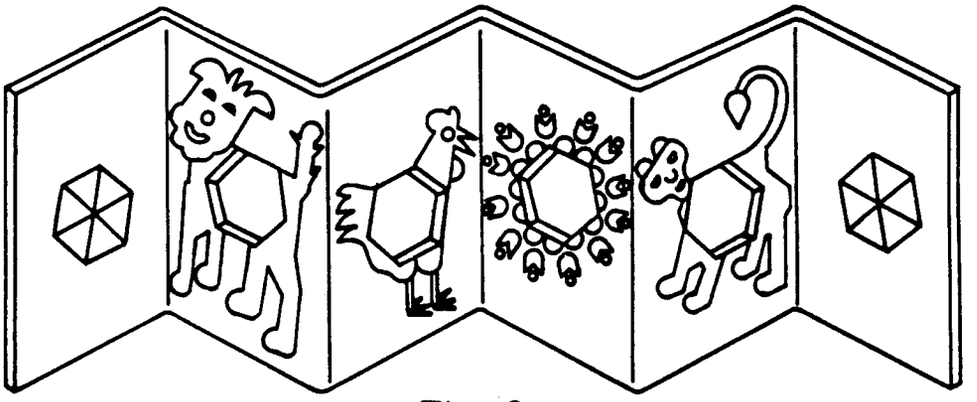

Fig.6

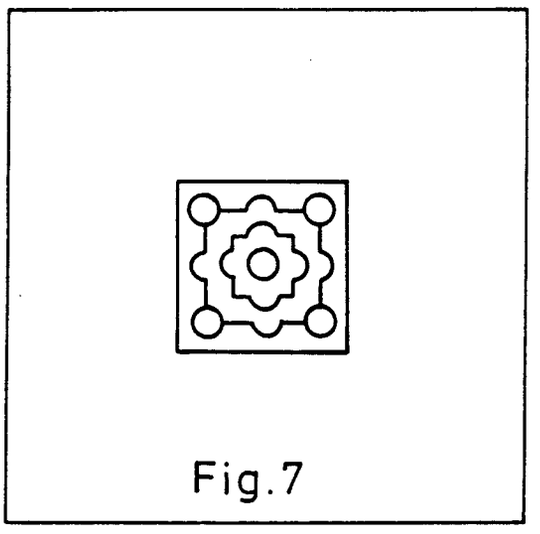

Fig.7

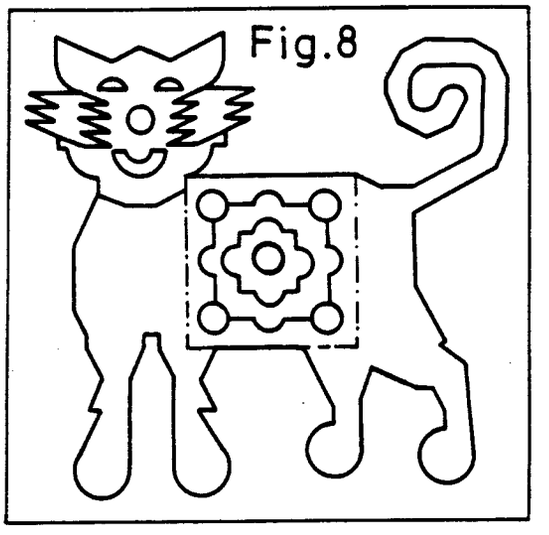

Fig.8

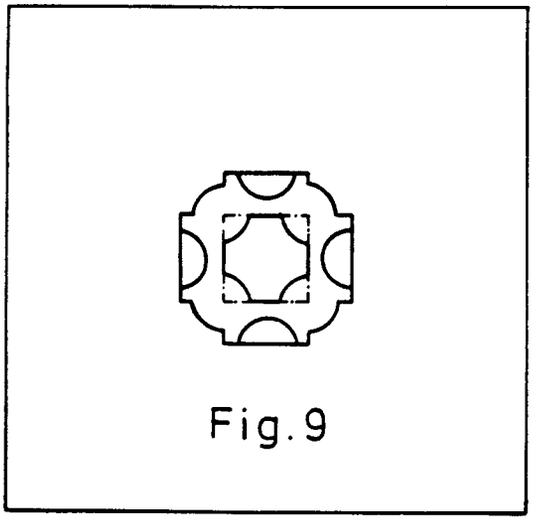

Fig.9

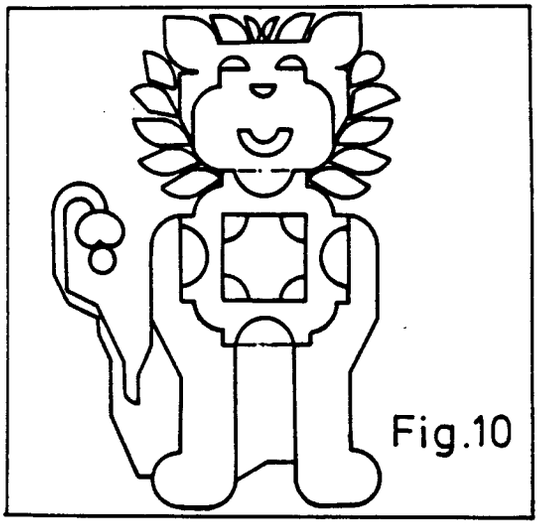

Fig.10

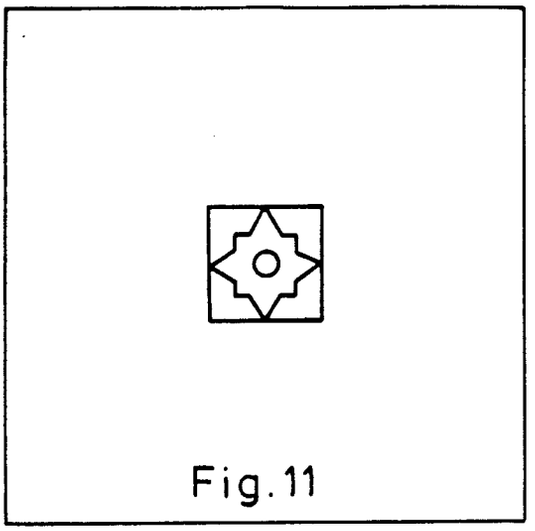

Fig.11

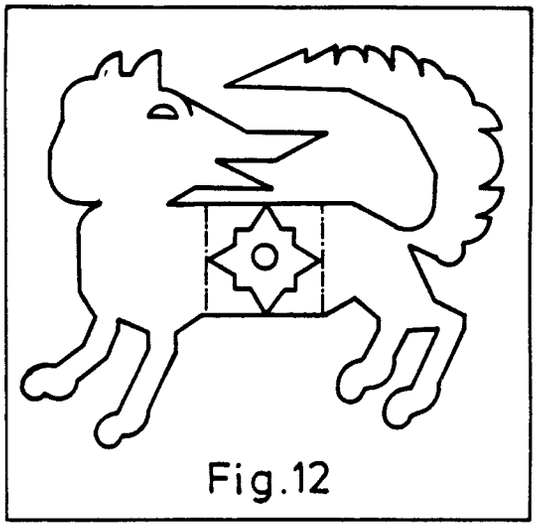

Fig.12

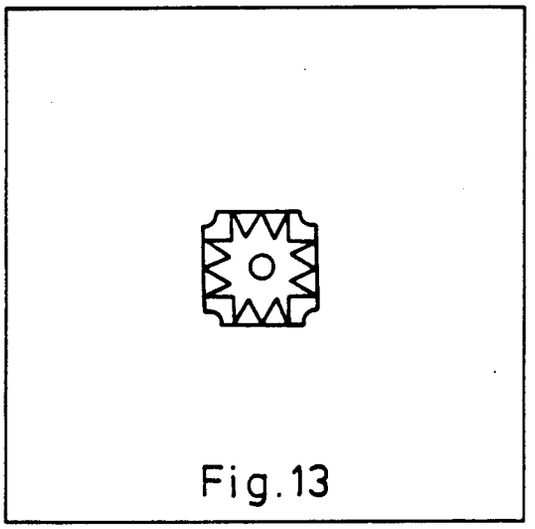

Fig.13

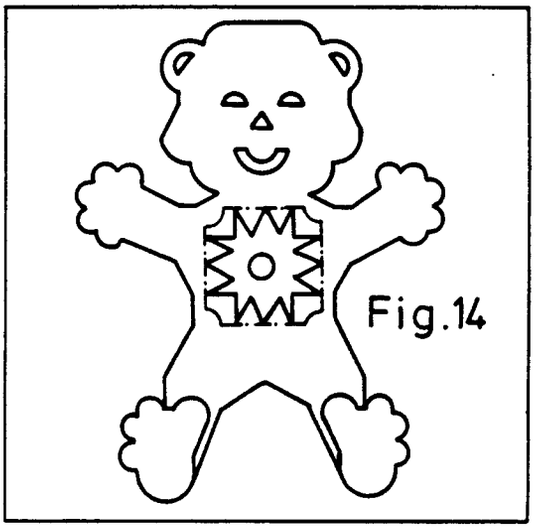

Fig.14

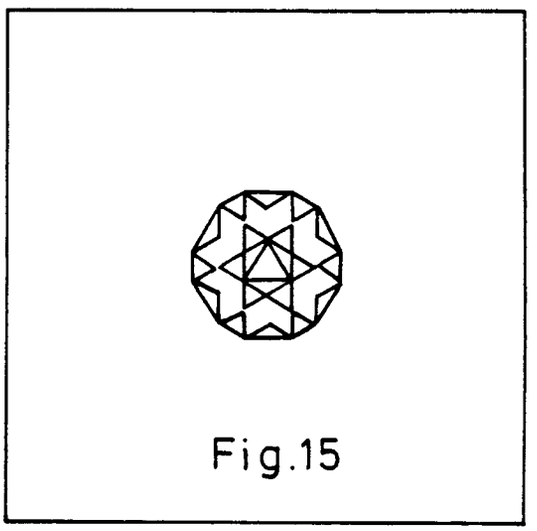

Fig.15

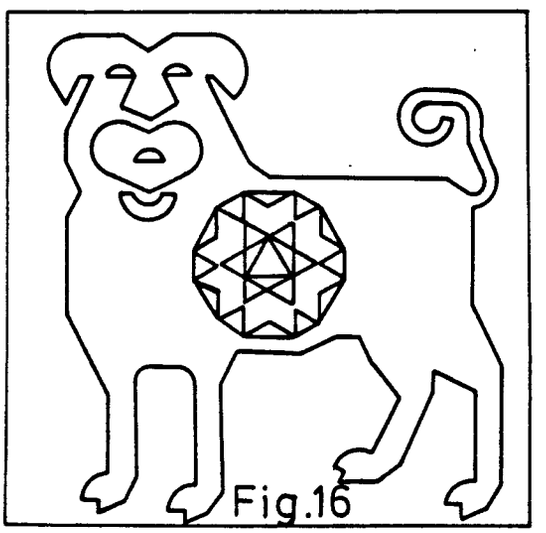

Fig.16

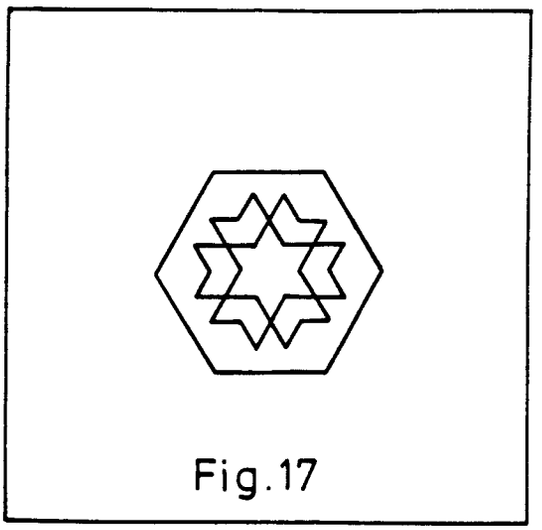

Fig.17

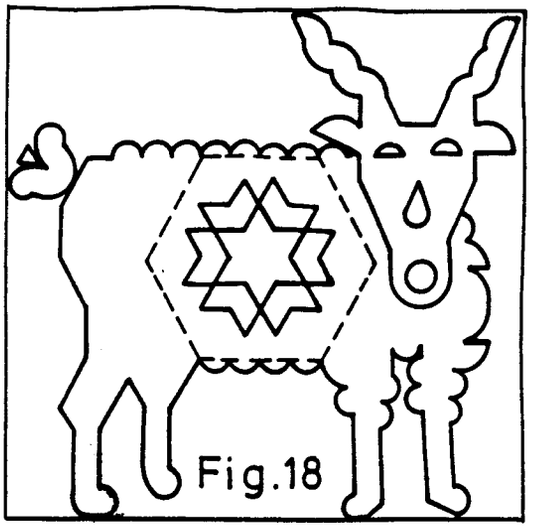

Fig.18

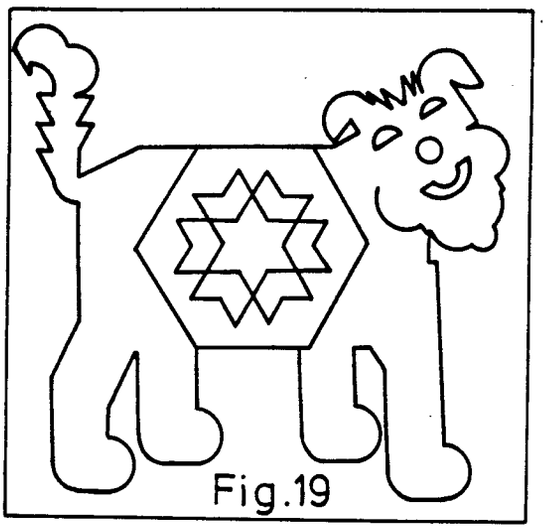

Fig.19

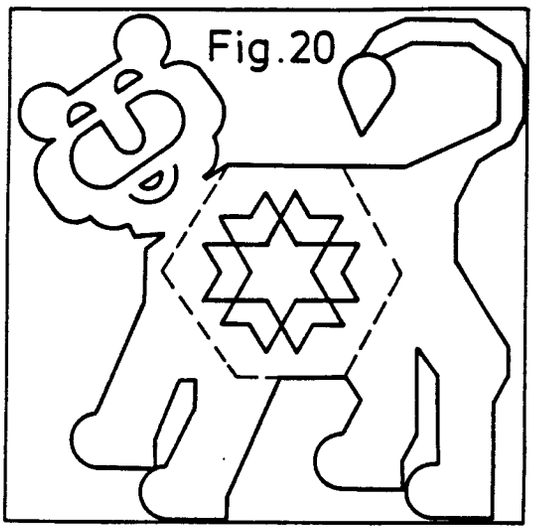

Fig.20

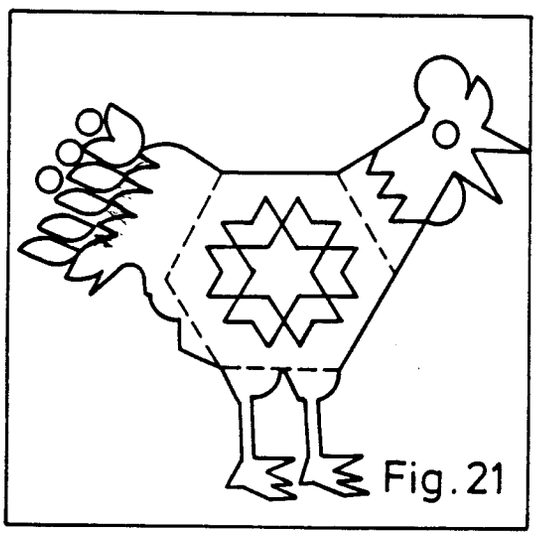

Fig.21

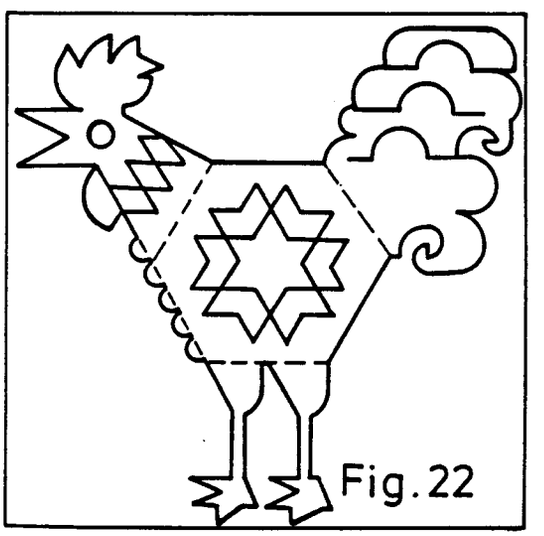

Fig.22