March 8, 1927. 1,620,053

C. E. ARUNDEL

SHEET MATERIAL TOY

Filed Aug. 9. 1924 2 Sheets-Sheet 1

Fig. 1

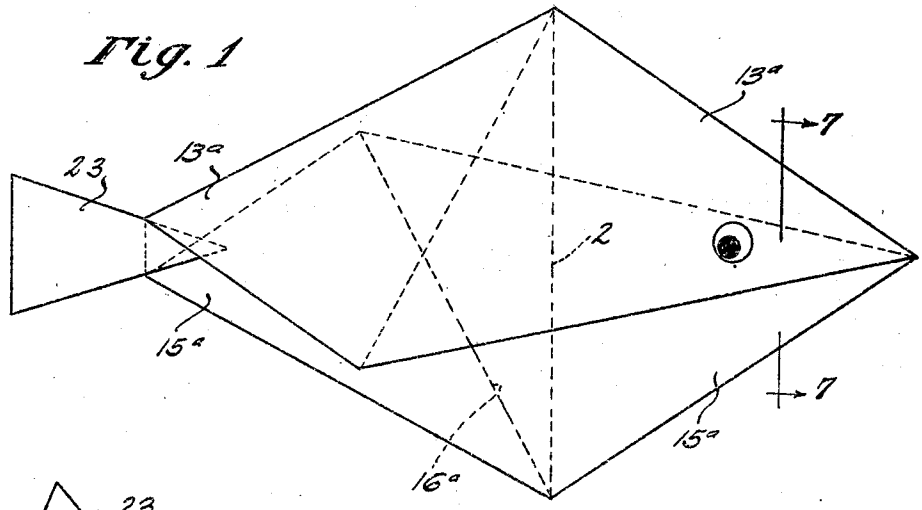


Fig. 2

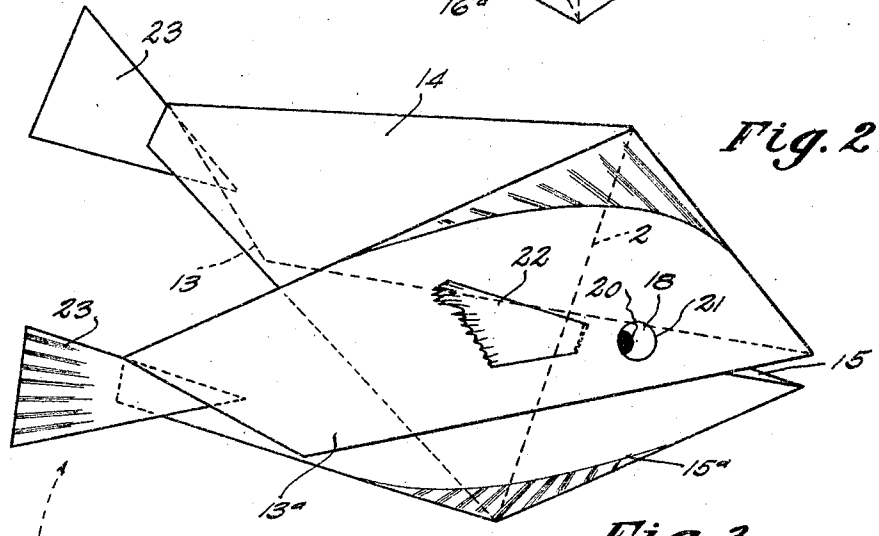


Fig. 3

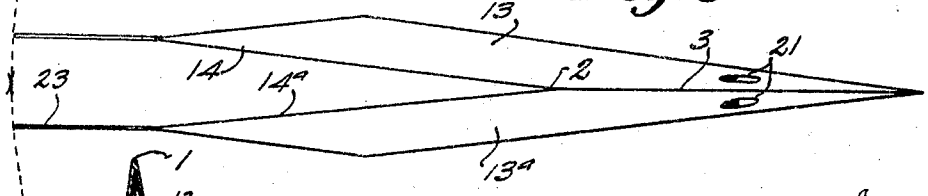


Fig. 7



Inventor

C.E. ARUNDEL.

By

Attorney

March 8, 1927. 1,620,053

C. E. ARUNDEL

SHEET MATERIAL TOY

Filed Aug. 9, 1924 2 Sheets-Sheet 2

Fig. 4

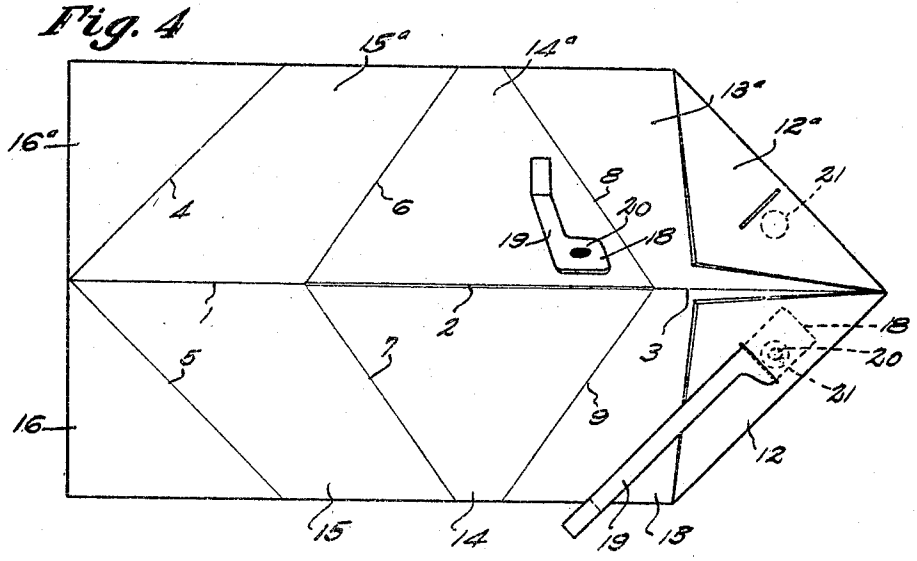


Fig. 5

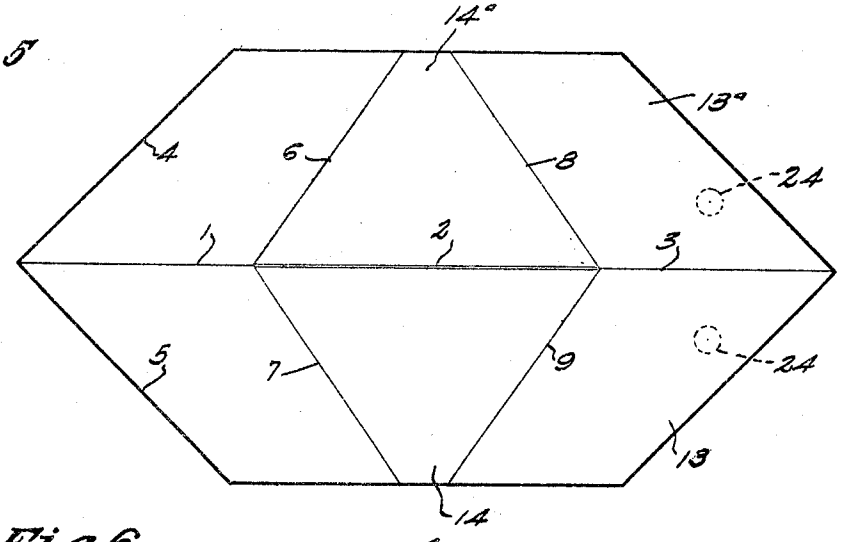
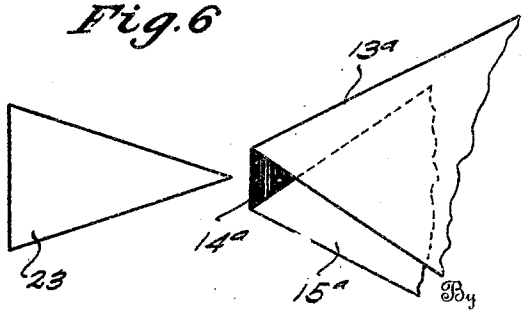


Fig. 6



Inventor

C. E. ARUNDEL.

By

Attorney

Patented Mar. 8, 1927. 1,620,053

UNITED STATES PATENT OFFICE.

CLARENCE E. ARUNDEL, OF BIRMINGHAM, ALABAMA, ASSIGNOR OF ONE-HALF TO F. F. POSTELL, OF BIRMINGHAM, ALABAMA.

SHEET-MATERIAL TOY.

Application filed August 9, 1924. Serial No. 731,073.

My invention relates to a novel toy made up of paper or like fabric and adapted, by reason of its folds and conformation, to represent a living creature having relatively movable parts, such as jaws, which can be brought into play by the separation of rear extensions of the folded toy.

More particularly, my object is to devise a toy which can be very simply and cheaply formed by a sheet of paper or the like, which can be cut and scored for folding in a single operation so that the folded article, by gluing together portions of its rear extensions, can be held in assembled position ready to be operated in the novel and simple manner which characterizes my improved type of toy.

My invention further contemplates the novel and distinctive manner of folding a sheet of paper so as to produce forward overlapping jaw-like members and rearward tail-like extensions, the jaw elements being separable in one plane responsive to relative movement of the tail extensions in a plane at right angles to the jaw movement plane.

My invention further contemplates the assembling of the toy by the pasting of elements such as a fish tail tab to the overlapping portions of each rear extension, to complete the simulation of a living creature and to facilitate the fastening of the toy in assembled position.

My invention further contemplates the utilization of the relative movement between head and body portions of the assembled toy to impart movement to eye tabs relative to eye sockets or openings in the head, this feature serving to enhance the appearance of life and motion in the toy.

It is understood that my toy may be embodied in forms simulating various types of living creatures by a mere change in the formation or outline design of the folded article or the attachment of various member parts thereto.

In the accompanying drawings I have sought to illustrate only a typical embodiment of my invention in which I show a toy in the form of a fish.

Fig. 1 illustrates the assembled toy in side elevation, omitting the decorations.

Fig. 2 is a perspective view of the finished toy with its rear tail-like extensions opened out.

Fig. 3 is a plan view of Fig. 1.

Fig. 4 is a plan view of the inner side of the paper blank from which the toy, as illustrated in the preceding figures is formed, the eye movement tabs being shown, one pasted to the blank and disconnected from the head and the other is attached to the head end but unattached to the body portion.

Fig. 5 illustrates a similar view of the blank for a simpler type in which the movable eye elements are eliminated and fixed eyes are printed on the blank.

Fig. 6 is a detail view illustrating the folds at the tip of a tail extension showing how the tail attachments are inserted.

Fig. 7 is a sectional view on the line 7—7 of Fig. 1.

Similar reference numerals refer to similar parts throughout the drawings.

Referring to the embodiment of my invention illustrated in Figs. 1 to 4, I provide an oblong blank sheet of paper or like flexible material with the side that will be innermost in the finished toy exposed. A longitudinal middle fold extends parallel with its long sides and comprises the scores 1, 2 and 3, the scores 1 and 3 being adapted to fold downwardly as shown while the score 2 will fold upwardly. The several scores 1, 2 and 3 are substantially equal in length and leading from the intersection of the score 1 with the adjacent end of the blank I form two divergent scores 4 and 5 which fold downwardly and are disposed at an angle of approximately 45° to the score 1. From the junction of the score 2 with the scores 1 and 3 lead additional scores 6, 7, and 8, 9, all of these scores being formed to fold downwardly and the scores 6 and 7 being divergent to the right, and the scores 8 and 9 being divergent to the left. The scores 6 and 8 intersect one long side of the blank in spaced relation near its center and the scores 7 and 9 intersect the opposite side of the blank in similarly spaced relation. At the right hand end of the blank I provide scores which correspond with, but are oppositely inclined relatively to the scores 4 and 5. The several scores subdivide the blank into duplicate sets of panels of different geometric designs, the panels on the low-

er half of the sheet, as shown in Fig. 4, being respectively designated by the numerals 12, 13, 14, 15 and 16, and the corresponding panels in the upper half of the sheet being designated by the numerals 12^a, 13^a, 14^a, 15^a and 16^a. I provide slits 17 in the panels 12 and 12^a and these slits are adapted to receive the enlarged ends 18 of eye tabs 19, which tabs at their rear ends are adapted to be pasted or otherwise attached to the panels 14 and 14^a respectively. The eye tabs are inserted in the panels 12 and 12^a after the latter have been folded over onto the panels 13 and 13^a, as shown in Fig. 4, and each tab on its enlarged end 18 has an eye 20 printed thereon and adapted to register with an eye opening or socket 21 which is cut in the panels 13, 13^a in the appropriate position to simulate the eye of a fish when the toy is assembled. I likewise print or emboss a fin 22 on the panels 13, 13^a in correct position relative to the eye. I provide also triangular tail tabs 23 which are adapted to be mounted in a manner which will be described later.

Having scored the blank in the manner described, the toy is formed as follows. The panels 12, 12^a, 16 and 16^a are first folded over onto the blank, the panels 16 and 16^a being folded like the panels 12 and 12^a in Fig. 4. The folded panels 16 and 16^a and the under lying panels 15 and 15^a are then folded upwardly together along score 1 until 16 and 16^a come together at their outer ends and the inner ends of 16 and 15 are then folded down upon 14 and the inner ends of 16^a and 15^a are folded down upon 14^a. The panels 12 and 12^a are then folded along diagonal scores onto panels 13 and 13^a and then the two are folded up along score 3, the inner ends of 12 and 13 are folded down upon 15 and the inner ends 12^a and 13^a are folded down upon 15^a and are received between the panels 12 and 12^a, and then the folded article is turned over and appears as in Fig. 1. The panels 14 and 14^a are then folded about the score 2 and the tail pieces 23 only have to be inserted to finish it.

The overlapping portions of panels 13^a, 14^a and 15^a forming one rear or tail extension are illustrated more clearly in Fig. 6. To mount the tail tab 23 and to attach the panels 13^a, 14^a and 15^a together where they overlap at the tip of the tail extension, glue or an adhesive is applied to the apex of the tail piece and the later is inserted between 15^a and 13^a and is pasted to 15^a below it and to 13^a above. This is typical of any suitable means to fasten the panel ends to each other and the tail tab. When the other tab 23 is similarly mounted between the panels 13, 14 and 15 in the other tail extension the article is finished and it will lie folded flat with the under jaw formed by the panels 15 and 15^a and overlapped on each side for most of their length by the upper jaw panels 13 and 13^a.

By grasping the rear ends of the tails or body bifurcations, as shown in Fig. 2, the jaw sections are caused to move relatively so as to open and close the mouth and the relative movement of the panels 14 and 14^a, with respect to 12 and 12^a, will cause a movement of the eye tabs 19 which will displace the eye 20 from the center of the socket 21, as shown more clearly in Fig. 2.

The panels 14 and 14^a can be drawn out until they lie in the same plane and when they do the jaws stand widely separated and the toy can be seated upon the panels 14 and 14^a as a base and bon bons or the like can be held in its open upturned mouth. By removing the bon bons and folding in the ends 14 and 14^a on the score 2 the parts resume position to be operated as a toy.

Where it is desired to produce the toy more cheaply and to eliminate the movable eye, a blank, such as is shown in Fig. 5, can be used where it will be seen that the panels 12, 12^a and 16, 16^a are omitted. The eyes 24 are formed by printing or embossing on the paper and the article is folded as before, the omitted panels 12 and 12^a not being essential except to provide a guide for the eyes. Hence it follows that the panels 16 and 16^a can be omitted in all constructions and if desired the tail piece 23 can be omitted and the panels 13^a and 15^a on the one rear extension and 13 and 15 on the other rear extension can be pasted together or otherwise attached. Obviously, other additional tabs can be pasted or otherwise attached to the finished article to make it more similar to other types of creatures, such as a bird, animal or a fish, without departing from the essential feature of my invention, which is based upon the movement of the rear or body portions to and from each other to cause an opening and closing of the forward or jaw portions.

Though I have described with great particularity the details of the embodiment of the invention herein shown, it is not to be construed that I am limited thereto, as changes in arrangement and substitution of equivalents may be made by those skilled in the art without departing from the invention as defined in the appended claims.

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

1. A toy of the character described, comprising folded members forming upper and lower jaws, the folds of one jaw overlapping the folds of the other, and rear body extensions each comprising relatively foldable members and each connected to the adjacent side folds of the upper and lower jaws.

2. A toy of the character described in

claim 1, in which the relatively foldable members of the body are of approximate triangular shape connected at their bases and attached at their tips to rear ends of their respective adjacent jaw folds.

3. A toy of the character described, comprising an upper jaw member formed by right and left panels connected to fold on a diagonal line, a lower jaw member comprising right and left panels connected to fold on a diagonal line divergent from that of the upper jaw member, the rear ends of said upper and lower jaw panels being respectively connected to an inwardly folding rear panel, as and for the purposes described.

4. A toy according to claim 3, in which all of the jaw parts and rear panels are formed of one integral scored sheet of flexible material.

5. A toy according to claim 3, in which all of the jaw parts and rear panels are formed of one integral scored sheet of flexible material folded to form oblong upper and lower members which overlap and are bifurcated, and a common foldable panel connecting said several furcations.

6. A toy according to claim 3, in which all of the jaw parts and rear panels are formed of one integral scored sheet of flexible material with the folds forming upper and lower oblong folded members which overlap substantially throughout their length and have the rear tips of the upper and lower overlapping side members on each side connected to the rear tips of an intermediate folding panel.

7. A blank for the production of toys of the character described, comprising a flexable sheet scored to form an approximately diamond shaped center panel having a score line to permit it to fold upwardly about its minor axis, and quadrilateral panels bordering the sides of the diamond and connected along a projection of the minor axis of the diamond by a score line which adapts them for downward folding, the panels formed above and below said projected axis being symmetrical and the panels on one side of the diamond above and below its projected axis having connected to their outer sides triangular flaps with scored lines adapted to fold downwardly, each of said flaps being slotted to receive a movable high tab.

In testimony whereof I affix my signature.

CLARENCE E. ARUNDEL.