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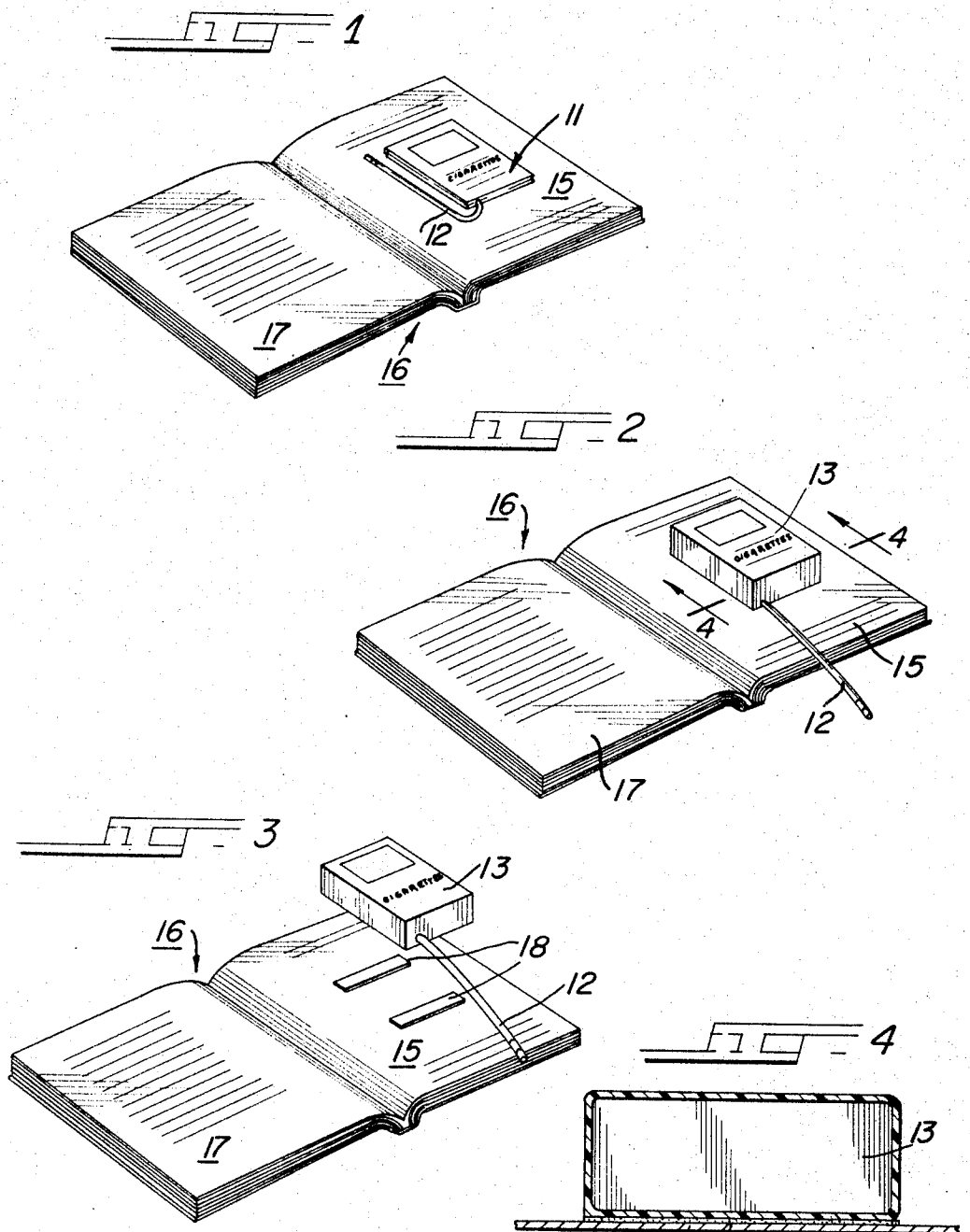
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FLAT-FOLDED INFLATABLE REPLICAS OF THREE-DIMENSIONAL ARTICLES

Filed March 10, 1966

Sheet 1 of 2



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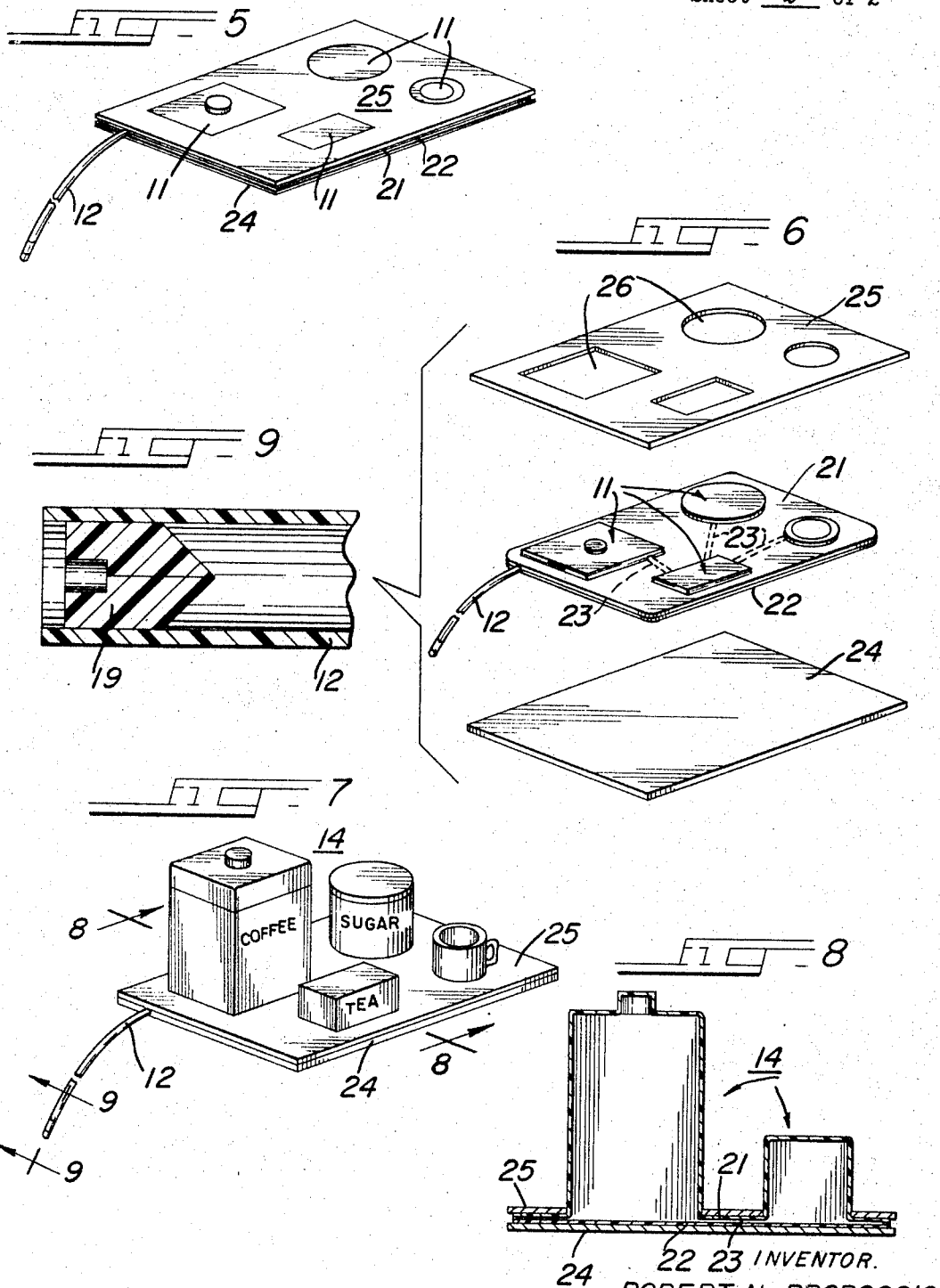
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## FLAT-FOLDED INFLATABLE REPLICAS OF THREE-DIMENSIONAL ARTICLES

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3 Claims

### ABSTRACT OF THE DISCLOSURE

The hollow formation made of flexible plastic film, shaped as a replica of a predetermined three-dimensional object, collapsed to substantially flat form and mounted between a pair of flat sheets, one of said sheets having an opening therein registering with the base outline of the collapsed formation and through which the said formation evolves to a three-dimensional shape upon being inflated.

The main objects of this invention are: to provide an improved formation from nonelastic, flexible film initially collapsed and subject to inflation into three-dimensional shape to constitute a replica of a conventional or imaginary object; to provide an improved object-replica formation of this kind with means for facile inflation and/or deflation as circumstances may make desirable; to provide an improved object-replica formation of this kind for use with various kinds of advertising media to physically present marketed products of almost any kind; to provide an improved object-replica formation of this kind which in its flat, deflated condition may be enclosed with various marketing media; and to provide an improved object-replica formation of this kind especially adapted for interposition on or between leaves of a printed publication for association with related advertisement.

Other objects of my invention are to provide an improved object-replica formation of this kind which may represent almost any type of object for inflation to indicate the normal nature of such object; to provide an improved formation of this kind which may be interposed between a pair of flat paper sheets, one of which has a predetermined contoured opening through which the replica evolves; and to provide an improved object-replica formation of this kind of such simple and practical character as to make its manufacturing and marketing extremely economical, its inflation and deflation very expeditious, and its use highly gratifying.

Specific embodiments of this invention are shown in the accompanying drawings in which:

FIG. 1 represents an open printed publication to one sheet of which has been removably attached a deflated object-replica constructed in accordance with this invention;

FIG. 2 is a view of the printed publication of FIG. 1 with the object-replica inflated;

FIG. 3 is a view of the printed publication of FIG. 1 with the inflated object-replica removed from the sheet whereto it was attached;

FIG. 4 is an enlarged, cross-sectional view taken on the plane of the line 4-4 of FIG. 2;

FIG. 5 is a perspective view of a modified structure embodying an ensemble of superimposed lamina one of which mounts a number of variously-dimensioned and contoured object-replica which, in their deflated flat disposition, are embraced by appropriately-contoured openings in the upper lamina and subject to having the inflated object-replica extended above the plane of the lamina ensemble;

FIG. 6 is an exploded perspective view of the adaptation shown in FIG. 5;

FIG. 7 is a perspective view of the ensemble of FIG. 5, when inflated;

FIG. 8 is a cross-sectional view of the inflated ensemble taken on the plane of the line 8-8 of FIG. 7; and

FIG. 9 is a very much-enlarged, axial sectional view of the inflating tube between the lines 9-9 of FIG. 7.

The essential concept of this invention involves the structuring of a replica of a conventional object from a nonelastic, flexible film so as to be initially collapsible into flat disposition subject to later inflation into three-dimensional shape and the associating of such an object with a printed sheet or page to provide a physical exposition of the subject of the printed text.

An inflatable formation 11 embodying the foregoing concept comprises a film of nonelastic flexible material structured with such predetermined dimensions and contours as will permit such a formation to be compressed into a flat, compact relationship for later inflation through a tube 12 to expand the formation into a replica of a selected object 13 (FIG. 2) or a group of related objects 14 (FIG. 7).

The film or air-impervious sheet material used for structuring such a formation 11 may be any suitable kind of very thin dimension, and so nonelastic as to be normally incapable of any degree of stretching against either interior or exterior pressure insufficient to effect a destruction of the sheet material itself. A preferable material for such purpose is any of the conventional polyalkylene plastics which are normally impervious to air. Some samples of suitable sheet materials are Du Pont "Mylar" or "Saran" wrap. Some types of object-replica formation 11 might also be structured from films of plastic laminated with paper or fabric.

The tube 12 here shown is of very small diameter and comparatively short length. Its inner end is so integrated with the formation 11 as to provide for ready admission of air pressured into the formation or extraction of air therefrom when the formation is compressed. At its outer end the tube is shown embracing a conventional, self-closing valve 19. Such a valve-controlled tube 12 may be used for inflating the formation 11, either by human breath or air or an inert gas under moderate pressure.

Obviously, the valve 19 is not imperative. It could be omitted and a string or rubber band could be used to seal the tube 12, doubled upon itself, against the escape of the inflating air or gas.

A formation 11 of this character could exemplify objects of commercial nature, for educational purposes, or in the field of amusement.

The herein exemplified object-replicas are of the commercial type. Such object-replicas can be used in association with various commercial advertising media, such as magazines, catalogs, books, pamphlets, posters and the like. One example of such marketing is illustrated in FIGS. 1 through 4. Here the formation 11 is a replica of a small carton or package such as might be used for cigarettes, candies, or cereals, etc. In this illustrated adaptation the collapsed formation 11 is adhered to one face of a sheet 15 of a printed publication 16. The same and/or opposed page 17 might contain printed information relating to the object-replica 13. As indicated in FIG. 3 the formation 11 was adhered to the one face of the sheet 15 by spots or strips 18 of adhesive, preferably of the pressure sensitive type that would permit removal of the replica 13 by manual pulling without damage to either the replica or the sheet 15. The inflation of such an object-replica 13 could be effected while it remains adhered to the sheet 15 or after it is removed therefrom.

Another example of the use object-replicas is shown in FIGS. 5 through 8. As shown, these exemplify a group of objects such as might be used for brewing a beverage. In this instance four differently-shaped formations 11 are

3

integrated with the upper of a pair of lamina 21 and 22 (FIG. 8) adhered together in face-to-face relation.

As shown, these lamina 21 and 22 are adhered together throughout their opposed areas except for certain narrow air channels 23 disposed between the respective formations 11 to provide for the passage of air thereto from one of the formations 11. With these lamina 21 and 22 the tube 12 is integrated to admit air directly to the one formation 11, here shown as the larger of the ensemble.

Such a structured ensemble of formations 11 is interposed between and adhered to a pair of suitable sheets 24 and 25 of the same or greater exterior perimetrical contour as the lamina 21 and 22. The film sheet 24 is imperforate whereas the film sheet 25 has openings 26 corresponding with the bases of the respective formations 11. Such sheets 24 and 25 are formed of comparatively thin material and may be of paper or thin cardboard or plastic.

The main advantages of this invention reside in its adaptability to many practical uses besides that of a three dimensional advertising feature which is an integral part of a printed page. Other uses include that of providing replicas as novelties in combination with greeting cards, center-pieces and party favors, or any other decorative novelty initially in flat sheet form. Still other applications of the invention are in the field of education where the ability to produce a three-dimensional illustration on a printed page can increase understanding and interest.

I claim:

1. An inflatable article comprising a formation structured from flexible nonelastic air-impervious sheet material and collapsed to a compact flat disposition subject to later inflation into a hollow air-tight three-dimensioned replica of a selected object, said formation including a pair of superimposed sheet-like lamina adhered together about their periphery, a pair of flat sheets adhered to the opposite faces of said lamina with the periphery of said collapsed formation secured between them, one of said

4

sheets having an opening located and contoured to coincide with the base outline of the said formation and through which opening the inflated formation will evolve as the object replica, and means for inflating said formation.

2. A device as defined by claim 1 wherein the flat sheets are of paper and the said formation is made of a plastic film.

3. A pair of superimposed flexible, nonelastic air-impervious sheet-like lamina one of which has an ensemble of formations integrally connected therewith and structured from non-elastic film collapsed to a compact flat disposition for later inflation into a three-dimensioned replica of a selected ensemble of objects, the lamina being adhered together throughout their opposed faces except for narrow air-flow channels between the respective formations, a pair of flat sheets respectively adhered to the opposite faces of the assembled lamina with one of the said sheets having openings embracing the respective collapsed formations and through which openings the formations evolve when inflated, and a valve controlled air tube integrated with the superimposed lamina and communicating with the formation for one of the said objects for simultaneously inflating or deflating the ensemble of formations.

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