

Oct. 17, 1950

P. H. BRONNENKANT
HINGED CONTAINER

2,526,458

Filed April 24, 1947

2 Sheets-Sheet 1.

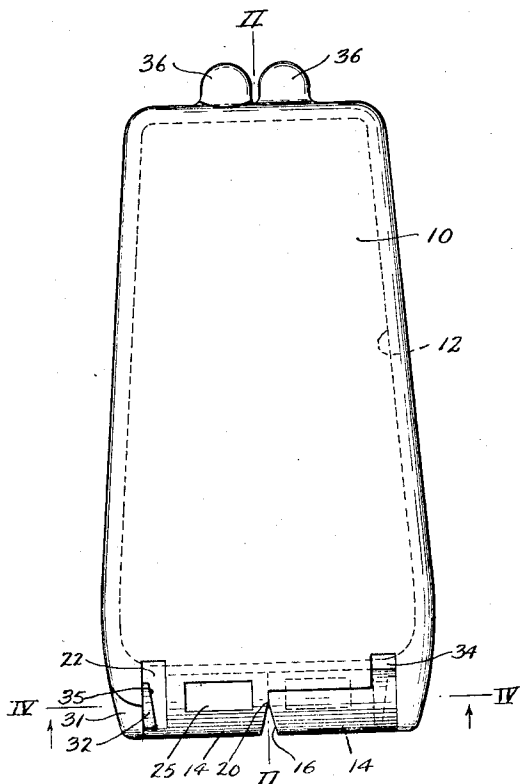


Fig. 1

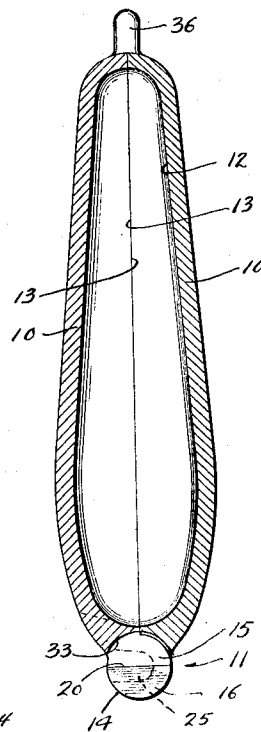


Fig. 2

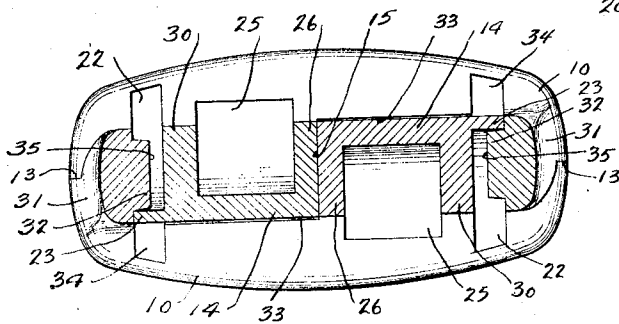


Fig. 4

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2 Sheets-Sheet 2

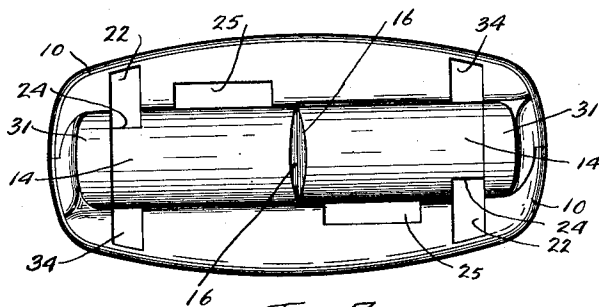


Fig. 3.

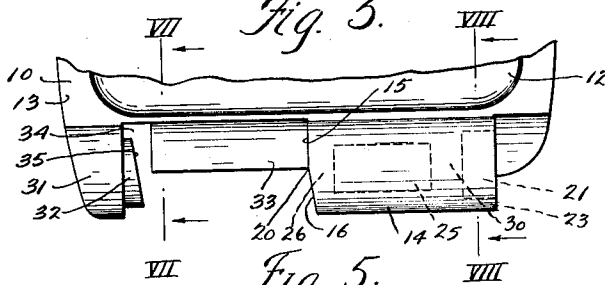


Fig. 5.

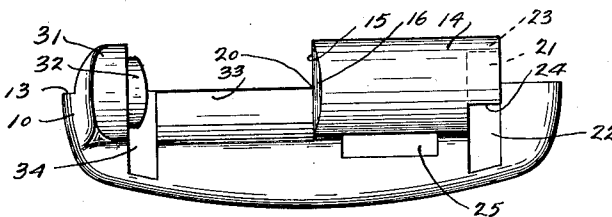


Fig. 6.

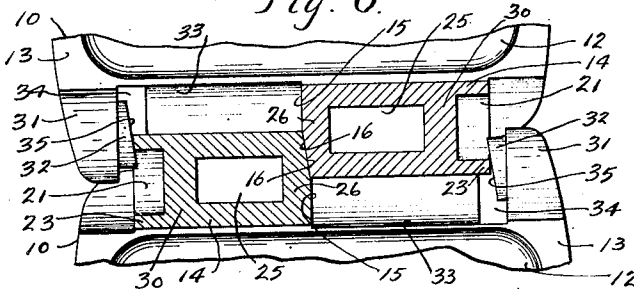


Fig. 7.

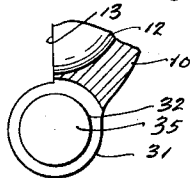


Fig. 8.

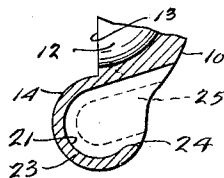


Fig. 9.

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HINGED CONTAINER

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4 Claims. (Cl. 220—31)

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My invention relates in general to containers and in particular to containers having hinged body members.

The principal object of my invention has been to provide a container having members united by interengaging integrally formed hinge parts provided on the container members.

Another object has been to provide hinge parts for the members of the container which are made from the material of the container and which are so proportioned and positioned that they are caused to be brought into coaxial and permanent pivotal relation by forced relative movement normal to the axes thereof.

Moreover, my invention is particularly adapted to containers having complementary parts and made of plastic material.

Furthermore, the hinge parts of my invention are provided with suitable abutments for normal axial bearing relation and with cam means for mutual engagement to force the hinge parts into engagement when assembling.

A further object has been to provide a container with duplicate body members and hinge parts thereby permitting convenient and economical molding thereof.

Moreover, the container members of my device are formed with duplicate latch parts integrally formed with said members.

The above objects and advantages have been accomplished by the device shown in the accompanying drawings, of which:

Fig. 1 is a face view of my device;

Fig. 2 is a longitudinal sectional view taken on line II—II of Fig. 1;

Fig. 3 is an enlarged end view;

Fig. 4 is an enlarged sectional view taken on line IV—IV of Fig. 1;

Fig. 5 is an enlarged fragmentary inside face view of the hinge parts of one of the members;

Fig. 6 is an end view of the parts of the device shown in Fig. 5;

Fig. 7 is a fragmentary sectional view taken on line VII—VII of Fig. 5;

Fig. 8 is a fragmentary sectional view taken on line VIII—VIII of Fig. 5; and

Fig. 9 is a fragmentary sectional view taken through the center line of the hinge parts when in the position occupied previous to final assembly.

While my invention is applicable to containers of complementary unsymmetrical body members,

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it is especially adaptable to containers having duplicate body members and it is in connection with such a container that I have shown and described the invention.

As shown in the drawings, the container comprises two duplicate complementary body members 10 joined together at one end by a pinless hinge member 11. Each of the body members is hollow as shown in Fig. 2 so as to provide a compartment 12 for the reception or storage of any articles to be displayed or stored therein. The container shown and described is one suitable for the reception and storage of hairpins.

Each of the members 10 is provided with an encircling rim having a surface 13 which lies in a plane passing through the center line of the hinge member and which is brought into substantial contact with the similar surface of the other member when the container is closed. The hinge member 11 is formed by two groups of hinge parts, one group being provided on each body member, each member being a duplicate of the group on the other member. Each body member has a hinge lug 14 extending laterally from the longitudinal center line of the container to a point near one of the outer edges thereof. The lug is formed at its inner end with an abutment surface 15 normal to the axis of the lug and extending from the lateral center line of the lug toward the body of the member. Joining this abutment 15 and extending from the lateral center line to the outer edge of the lug is an inclined surface 16 to be hereinafter described. The lateral center line referred to is coincident with the line 20 shown in Figs. 1 and 2 of the drawings and is preferably arranged at right angles to the surface 13 of each body member so that it faces backwardly from the body member or toward the coacting body member when being assembled as clearly shown in Fig. 9.

The outer end of each hinge lug 14 is formed with a concentrically arranged hinge socket 21 which opens into a recess 22 extending from the socket to the exterior of the body member. The socket and recess thereby form an annular rim 23 as clearly shown in Fig. 8 which extends from the surface 13 and terminates at the edge 24. In order to economize on the material used and to lighten the structure, each of the hinge lugs is provided with a recess or cavity 25 extending to the outer face of the container member. The recess is so proportioned in relation with the lug

that a wall 26 is formed between one end thereof and the surfaces 15 and 16, and a wall 30 is formed between the recess and the bottom of the socket 21.

Arranged at the side of each of the body members at a position opposite the hinge lug and in spaced relation therewith is a pintle arm 31 on the inner face of which a hinge pintle 32 is formed. The surface 33 between the hinge lug and the arm is convex in form so as to accommodate the hinge lug of the opposite body member when assembled. The curvature of this surface is such as to make a well fitting joint between it and the engaging lug. A recess 34 is provided adjacent the inner face of the arm and serves to separate the arm from the surface 33. The face 35 of the pintle 32 is inclined as shown, such inclination being substantially of the same degree and in the same direction as that of the inclined surface 16 of the hinge lug for reasons to be hereinafter stated.

In order to maintain the coacting hinge parts in assembled positions, it is necessary that the assemblage be brought about by a spring action between the parts. This is accomplished by making the length of the hinge lugs from the abutting surfaces 15 and the edge of the socket rims 23 slightly greater than the spaces between the abutting surfaces and the faces of the pintles 32 so that when assembling the hinge parts of each member will be axially displaced due to the flexibility of the material of the members and cause the pintles to snap into the engaging hinge sockets when brought into registering positions. The distance between the abutting surfaces 15 and the faces of the arms is, however, such that the container members will be in free pivotal engagement when final assemblage is accomplished. Such axial displacement is brought about by the inclined surfaces 16 on the adjacent faces of the hinge lugs, and as shown in Fig. 9 where the parts are illustrated in relative positions previous to final assemblage, the inclined surfaces of the coacting hinge lugs are initially brought into engagement as shown. It will be seen that when in this position, the pintles 32 are partly engaged with the sockets 21, and the inclined surface of each pintle engages the rim of the socket. When the parts are in the positions shown in Fig. 9, further forceable movement toward each other in the direction normal to the axes of the hinge parts will cause the parts to be snapped together to bring them into the position shown by Fig. 4. During such movement the pintles 21 will be fully engaged with their coacting socket members, and the inclined surfaces 16 will have caused relative axial movement of the hinge lugs to the positions where the abutting surfaces 15 will be brought into mutual contact upon relative rotation of the container parts about the hinge. The abutting surfaces 15 are brought into engagement after the first initial rotative movement of the hinge parts and remain in engagement during the normal operative movement thereof. When the parts are fully opened so that they lie in substantially the same plane, which is the assembling position, the inclined surfaces will again be opposite one another, but the pintles will remain engaged in their respective sockets and the hinge will operate normally in this position.

The container is preferably provided with a latch formed at the outer ends of the casing parts, consisting of a tab 36 formed on each part in off center relation therewith and overhanging

the surface 13, whereby when the parts are brought together the overhanging surface of both lugs will engage the opposite container part. Due to the off center relation as shown in Fig. 1, the lugs on opposite parts will be staggered so that they may be easily grasped by the user and the parts conveniently opened.

While I have shown and described my invention as applied to containers, it is obvious that the invention is adaptable to the connection of members other than body parts of containers.

What is claimed is:

1. A container comprising two hinged members, each member being formed with a hinge arm and a hinge lug spaced therefrom, each of said lugs being formed in its outer end with a hinge socket, each of said arms being formed on its inner surface with a hinge pintle having an inclined face for initial engagement with the rim of the coacting hinge socket prior to final assembling, each of said lugs being formed with an abutting surface normal to the axis of the pivot and mutually engageable upon final assemblage of the members, and with an inclined surface mutually engageable when said members are in opposite extended positions ready for final assemblage.

2. A container comprising two hinged members, each member being formed with a hinge arm and a hinge lug spaced therefrom, each of said lugs being formed in its outer end with a hinge socket, each of said arms being formed on its inner surface with a hinge pintle having an inclined face for initial engagement with the rim of the coacting hinge socket prior to final assembling, each of said lugs being formed with an abutting surface normal to the axis of the pivot and mutually engageable upon final assemblage of the members, and with an inclined surface mutually engageable when said members are in oppositely extended positions ready for final assemblage, the inclined surfaces of said hinge pins and said lugs being of substantially the same inclination, whereby upon relative movement of said members normal to the axes of the hinge parts the hinge pins will be guided over the edges of said hinge sockets as the engaging inclined surfaces of the lugs are riding upon each other to bring said abutting surfaces into aligned engagement and said pintles into pivotal engagement with said lugs.

3. A container comprising two complementary body members, each member being formed at one end with hinge parts, comprising a hinge lug extending substantially from the lateral center of said member toward one side edge thereof, and a hinge arm located at the opposite side edge of the member and spaced from the opposing surface of said lug, a hinge socket formed in the outer end of said lug, a hinge pintle formed on the inner face of said arm and engageable with the hinge socket of the opposite body member, the length of said lug being greater than the space between it and the inner face of said pintle, whereby the lug and pintle of each member will be relatively displaced axially during assemblage of the hinge parts.

4. A container comprising two complementary body members, each member being formed at one end with hinge parts, comprising a hinge lug extending substantially from the lateral center of said member toward one side edge thereof, and a hinge arm located at the opposite side edge of the member and spaced from the opposing surface of said lug, a hinge socket formed

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in the outer end of said lug, a hinge pintle formed on the inner face of said arm and engageable with the hinge socket of the opposite body member, the length of said lug being greater than the space between it and the inner face of said pintle, whereby the lug and pintle of each member will be relatively displaced axially during assemblage of the hinge parts, and cam means formed on said lugs for causing such displacement.

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