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H. HIRSCH ET AL

2,777,248

MINIATURE TOY BOAT

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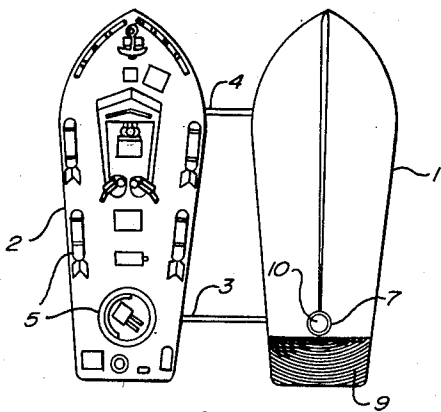


Fig. I

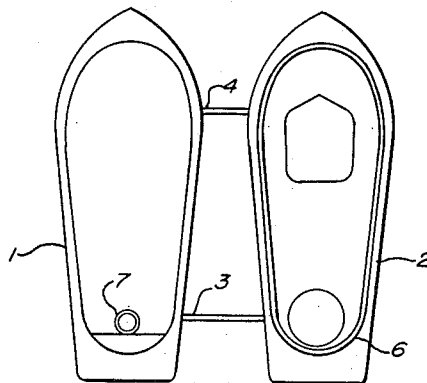


Fig. II

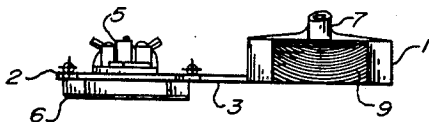


Fig. III

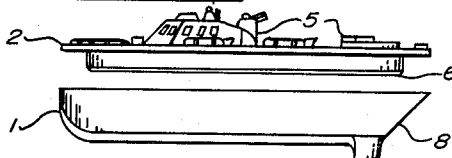


Fig. IV

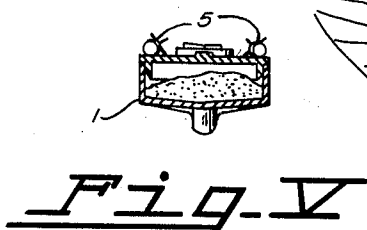


Fig. V

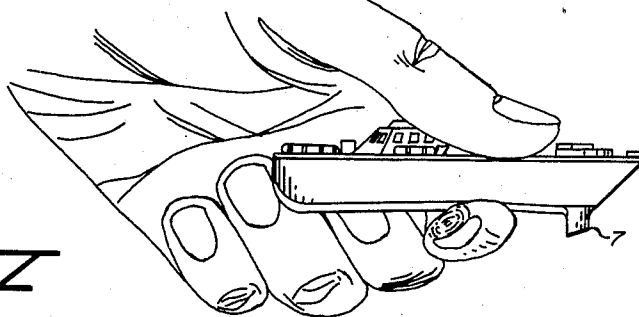


Fig. VI

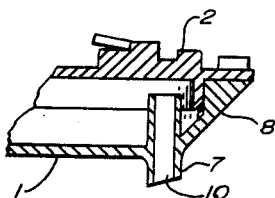


Fig. VII

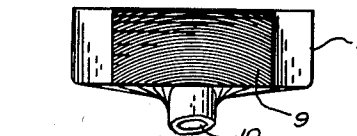


Fig. VIII

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MINIATURE TOY BOAT

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10 Claims. (Cl. 46—95)

This invention relates to miniature toy boats which are designed to be sold in huge quantities at very low unit prices to manufacturers of packaged goods such as breakfast foods, who enclose them in packages as prizes to promote the sale of the packaged goods.

One of the objects of the invention is to provide a miniature toy boat the deck of which is equipped with simulated war materiel, the appearance of the miniature boat being such as to make it attractive to children.

Another object is to provide a miniature toy boat having a separable deck and hull, the joint between the deck and hull being water and gas tight when the deck and hull are put together without the use of any sealing or adhesive compound.

A further object is to provide a miniature toy boat such as that above outlined, the hull of which is adapted to contain a quantity of effervescent compound, such as baking powder commonly used in domestic cooking, with provision for adding small amounts of water to such compound to cause the generation of gas by effervescence.

Another object is to provide a miniature toy boat such as is above outlined having an upwardly and rearwardly sloping surface at its stern, and a nozzle leading from the interior of the hull of said miniature boat and so located and proportioned that gas emitted from said nozzle into water in which the miniature boat is afloat will form a series of bubbles that rise along the upward and rearwardly sloping surface at the stern and thus propel the miniature boat forwardly.

And still another object of the invention is to provide a miniature toy boat having the features outlined above which nevertheless is of such low cost construction that it can compete successfully with articles offered by others to manufacturers of packaged goods for use as prizes.

Other objects and many advantages of the invention will be apparent from the following description illustrated by the accompanying drawings in which:

Fig. I is a view of a molding one portion of which is a hull the bottom of which appears in the figure, the other portion of which is a deck the top of which appears in the figure the two portions being connected by thin strips;

Fig. II is a view of the reverse side of the molding shown in Fig. I;

Fig. III is a view of the molding taken from the stern end thereof;

Fig. IV is a side elevational view of the hull and deck portions of the molding severed from each other and in position to be assembled to form a miniature toy boat;

Fig. V is a cross sectional view taken amidships and showing the hull and deck portions assembled with each other, with the hull containing powder;

Fig. VI is a side elevational view showing the miniature toy boat being compressed between the thumb and finger of a hand so that it will act as a bulb to draw water into the hull when the pressure is relieved while the nozzle is immersed in water;

Fig. VII is a fragmentary vertical sectional view on an enlarged scale taken along the keel and through a nozzle leading from the interior of the hull; and

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Fig. VIII is a rear elevational view on a further enlarged scale showing the stern of the hull portion.

The specific drawing and the specific description that follows illustrate and disclose the invention but are not intended to limit its scope.

The molding illustrated in Figs. I and II is nonrigid and preferably consists of a flexible molding material such as polyethylene or other rubbery substance. The hull portion 1 of the molding is attached to the deck portion 2 by means of a pair of strips 3 and 4 that may be easily severed from the hull and deck portions and discarded.

On the side of the deck portion which is uppermost when the miniature toy boat is afloat is a set of embossments 5 which may include simulated turret guns, torpedos etc. The cost of the embossments, after the mold is made, is very small and may be reduced almost to zero by making the larger embossments hollow.

The lower side of the deck portion 2 is provided with a flange 6 that conforms to the contour of the interior of the hull 1. Because of the flexible nature of the material with which the molding is formed, the joint between the hull and deck when the flange 6 is inserted into the hull and the two portions are pushed together becomes water and gas tight.

To prepare the miniature boat for operation it is only necessary to cut away the strips 3 and 4 (with scissors or a knife) partially fill the hull portion 1 with baking powder, put the deck portion 2 onto the hull portion like a cover, press the miniature boat thus formed between a thumb and a finger and release the pressure sufficiently while the nozzle 7 is immersed.

Water drawn through the nozzle 7 into the hull 1 by the bulb-like action of the hull will cause the powder in the hull to effervesce and force air and gas out through the nozzle 7 until so much of the powder as constitutes the chemical equivalent of the water with which the powder is in contact has been used up. To use up all of the powder in the hull may require that several drafts of water be drawn into the hull by bulb-like action.

Since the deck portion 2 with its embossments is stiffer than the hull portion 1, most of the bulb effect is contributed by the hull portion. Indeed the deck portion may, if desired, be molded separately from less flexible material.

The nozzle 7 is so proportioned and shaped and located that gas emitted thereby into the water in which the miniature boat is afloat will form a series of discrete bubbles each of which will detach itself from the nozzle and move upwardly at the rear of the nozzle until it engages the stern 8 of the boat which slopes upwardly and rearwardly. As the series of bubbles moves upwardly along the sloping stern, the forwardly acting components of the pressure exerted by the bubbles against the stern propel the miniature toy boat forwardly, while the bubbles of the series emerge and burst abaft the boat with the effect of a succession of exhaust explosions.

With some materials there is a tendency for some of the gas bubbles to cling to the sloping surface of the stern and to coalesce with each other. We have discovered that such tendency can be obviated by breaking the sloping surface into very fine protuberances 9 which may be peaks or ridges arranged in any pattern. The spacing of the protuberances whether peaks or ridges preferably should be such that they are as numerous as 75 to 100 per linear inch and the valleys between them should be some .005" or more in depth. The protuberances may be arranged in any desired pattern, e. g. in straight or curved lines or spirals. They preferably are formed when the piece is molded. With the stern thus rugated the bubbles glide over the stern and away freely.

The orifice 10 of the nozzle 7 is of such size that while

it emits bubbles large enough to be effectively buoyant the gas is held back sufficiently to accumulate some pressure and is released slowly enough to provide a satisfactory stretch of play time per charge of powder. For a miniature boat two inches in length a nozzle having an orifice one sixteenth of an inch in diameter and projecting downwardly seven sixty-fourths of an inch is properly proportioned.

If the tip of the nozzle is in a plane perpendicular to the nozzle axis, and if the thickness of the nozzle wall at the point of bubble departure is more than one thirty-second of an inch bubbles may tend to cling to the tip and grow inordinately rather than to depart in rapid regular succession. We have discovered that this tendency can be obviated by making the lip of the orifice relatively thin and by slanting the tip rearwardly and upwardly as is shown in Fig. VII.

The nozzle is so located that bubbles released by it impinge upon the sloping stern adjacent its lower edge without encountering any other impediment. Sludge is prevented from flowing from the hull over and into the nozzle by extending the inner end of the nozzle upwardly to above the level to which sludge is liable to rise.

Notwithstanding the simplicity and economy of the structure of the above described miniature toy boat it is manifest that it possesses many features which mutually cooperate to make a lively fascinating toy.

It is to be understood that the instant invention is susceptible to modification and change within the spirit and scope of the subjoined claims.

We claim:

1. A toy boat consisting of a hull portion molded of flexible plastic material and a deck portion molded of like flexible plastic material, said hull portion constituting a container for effervescent powder, said hull portion having a stern which slopes upwardly and rearwardly when said toy boat is afloat, the exterior surface of said stern being broken into protuberances and valleys at least as numerous as seventy-five per lineal inch, said valleys sinking at least .005" below the apices of the protuberances, said hull portion being equipped with a nozzle extending from therewithin and having an emission orifice located adjacent the lower edge of said stern, said orifice having a thin lip which is slanted rearwardly and upwardly, said nozzle extending into said hull portion to a level substantially above the inner surface of the bottom of said hull portion, said deck portion being embossed with simulated combat materiel and having a flange adapted to be inserted into said hull portion whereby said deck portion is adapted to be fitted upon said hull portion with a substantially gas tight joint between said portions, said portions when so fitted together and squeezed functioning as a bulb from which fluid is expelled through said nozzle and into which fluid is drawn when said portions recover their shapes upon release of such squeeze.

2. A toy boat consisting of a hull portion molded of flexible plastic material and a deck portion molded of like flexible plastic material, said hull portion constituting a container for effervescent powder, said hull portion having a stern which slopes upwardly and rearwardly when said toy boat is afloat, the exterior surface of said stern being broken into protuberances and valleys, said valleys sinking at least .005" below the apices of the protuberances, said hull portion being equipped with a nozzle extending from therewithin and having an emission orifice located adjacent the lower edge of said stern, said orifice having a thin lip which is slanted rearwardly and upwardly, said nozzle extending into said hull portion to a level substantially above the inner surface of the bottom of said hull portion, said deck portion being embossed with simulated combat materiel and having a flange adapted to be inserted into said hull portion whereby said deck portion is adapted to be fitted upon said hull portion with a substantially gas tight joint between said portions, said portions when so fitted together and squeezed functioning as a bulb from which fluid is expelled through said nozzle

and into which fluid is drawn when said portions recover their shapes upon release of such squeeze.

3. A toy boat consisting of a hull portion molded of flexible plastic material and a deck portion molded of like flexible plastic material, said hull portion constituting a container for effervescent powder, said hull portion having a stern which slopes upwardly and rearwardly when said toy boat is afloat, the exterior surface of said stern being broken into protuberances and valleys at least as numerous as seventy-five per lineal inch, said hull portion being equipped with a nozzle extending from therewithin and having an emission orifice located adjacent the lower edge of said stern, said orifice having a thin lip which is slanted rearwardly and upwardly, said nozzle extending into said hull portion to a level substantially above the inner surface of the bottom of said hull portion, said deck portion being embossed with simulated combat materiel and having a flange adapted to be inserted into said hull portion whereby said deck portion is adapted to be fitted upon said hull portion with a substantially gas tight joint between said portions, said portions when so fitted together and squeezed functioning as a bulb from which fluid is expelled through said nozzle and into which fluid is drawn when said portions recover their shapes upon release of such squeeze.

4. A toy boat consisting of a hull portion molded of flexible plastic material and a deck portion, said hull portion constituting a container for effervescent powder, said hull portion having a stern which slopes upwardly and rearwardly when said toy boat is afloat, the exterior surface of said stern being broken into protuberances and valleys at least as numerous as seventy-five per lineal inch, said valleys sinking at least .005" below the apices of the protuberances, said hull portion being equipped with a nozzle extending from therewithin and having an emission orifice located adjacent the lower edge of said stern, said orifice having a thin lip which is slanted rearwardly and upwardly, said nozzle extending into said hull portion to a level substantially above the inner surface of the bottom of said hull portion, said deck portion being embossed with simulated combat materiel and having a flange adapted to be inserted into said hull portion whereby said deck portion is adapted to be fitted upon said hull portion with a substantially gas tight joint between said portions, said portions when so fitted together and squeezed functioning as a bulb from which fluid is expelled through said nozzle and into which fluid is drawn when said portions recover their shapes upon release of such squeeze.

5. A toy boat consisting of a hull portion molded of flexible plastic material and a deck portion molded of like flexible plastic material, said hull portion constituting a container for effervescent powder, said hull portion having a stern which slopes upwardly and rearwardly when said toy boat is afloat, the exterior surface of said stern being broken into protuberances and valleys at least as numerous as seventy-five per lineal inch, said valleys sinking at least .005" below the apices of the protuberances, said hull portion being equipped with a nozzle extending from therewithin and having an emission orifice located adjacent the lower edge of said stern, said orifice having a thin lip which is slanted rearwardly and upwardly, said nozzle extending into said hull portion to a level substantially above the inner surface of the bottom of said hull portion, said deck portion having a flange adapted to be inserted into said hull portion whereby said deck portion is adapted to be fitted upon said hull portion with a substantially gas tight joint between said portions, said portions when so fitted together and squeezed functioning as a bulb from which fluid is expelled through said nozzle and into which fluid is drawn when said portions recover their shapes upon release of such squeeze.

6. A toy boat consisting of a hull portion molded of flexible plastic material and a deck portion, said hull portion constituting a container for effervescent powder, said

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hull portion having a stern which slopes upwardly and rearwardly when said toy boat is afloat, the exterior surface of said stern being broken into protuberances and valleys at least as numerous as seventy-five per lineal inch, said valleys sinking at least .005" below the apices of the protuberances, said hull portion being equipped with a nozzle extending from therewithin and having an emission orifice located adjacent the lower edge of said stern, said orifice having a thin lip which is slanted rearwardly and upwardly, said nozzle extending into said hull portion to a level substantially above the inner surface of the bottom of said hull portion, said deck portion having a flange adapted to be inserted into said hull portion whereby said deck portion is adapted to be fitted upon said hull portion which a substantially gas tight joint between said portions, said portions when so fitted together and squeezed functioning as a bulb from which fluid is expelled through said nozzle and into which fluid is drawn when said portions recover their shapes upon release of such squeeze.

7. A toy boat consisting of a hull portion molded of flexible plastic material and a deck portion molded of like flexible plastic material, said hull portion constituting a container for effervescent powder, said hull portion having a stern which slopes upwardly and rearwardly when said toy boat is afloat, the exterior surface of said stern being broken into protuberances and valleys at least as numerous as seventy-five per lineal inch, said valleys sinking at least .005" below the apices of the protuberances, said hull portion being equipped with a nozzle extending from therewithin and having an emission orifice located adjacent the lower edge of said stern, said nozzle extending into said hull portion to a level substantially above the inner surface of the bottom of said hull portion, said deck portion being embossed with simulated combat materiel and having a flange adapted to be inserted into said hull portion whereby said deck portion is adapted to be fitted upon said hull portion with a substantially gas tight joint between said portions, said portions when so fitted together and squeezed functioning as a bulb from which fluid is expelled through said nozzle and into which fluid is drawn when said portions recover their shapes upon release of such squeeze.

8. A toy boat consisting of a hull portion molded of flexible plastic material and a deck portion molded of like flexible plastic material, said hull portion constituting a container for effervescent powder, said hull portion having a stern which slopes upwardly and rearwardly when said toy boat is afloat, the exterior surface of said stern being broken into protuberances and valleys at least as numerous as seventy-five per lineal inch, said valleys sinking at least .005" below the apices of the protuberances, said hull portion being equipped with a nozzle extending from therewithin and having an emission orifice located adjacent the lower edge of said stern, said orifice having a thin lip which is slanted rearwardly and upwardly, said deck portion being embossed with simulated combat materiel and having a flange adapted to be inserted into said hull portion whereby said deck portion is

adapted to be fitted upon said hull portion with a substantially gas tight joint between said portions, said portions when so fitted together and squeezed functioning as a bulb from which fluid is expelled through said nozzle and into which fluid is drawn when said portions recover their shapes upon release of such squeeze.

9. A toy boat consisting of a hull portion molded of flexible plastic material and a deck portion molded of like flexible plastic material, said hull portion constituting a container for effervescent powder, said hull portion having a stern which slopes upwardly and rearwardly when said toy boat is afloat, the exterior surface of said stern being broken into protuberances and valleys at least as numerous as seventy-five per lineal inch, said valleys sinking at least .005" below the apices of the protuberances, said hull portion being equipped with a nozzle extending from therewithin and having an emission orifice located adjacent the lower edge of said stern, said deck portion being embossed with simulated combat materiel and having a flange adapted to be inserted into said hull portion whereby said deck portion is adapted to be fitted upon said hull portion with a substantially gas tight joint between said portions, said portions when so fitted together and squeezed functioning as a bulb from which fluid is expelled through said nozzle and into which fluid is drawn when said portions recover their shapes upon release of such squeeze.

10. A toy boat consisting of a hull portion molded of flexible plastic material and a deck portion, said hull portion constituting a container for effervescent powder, said hull portion having a stern which slopes upwardly and rearwardly when said toy boat is afloat, the exterior surface of said stern being broken into protuberances and valleys at least as numerous as seventy-five per lineal inch, said valleys sinking at least .005" below the apices of the protuberances, said hull portion being equipped with a nozzle extending from therewithin and having an emission orifice located adjacent the lower edge of said stern, said deck portion being embossed with simulated combat materiel and having a flange adapted to be inserted into said hull portion whereby said deck portion is adapted to be fitted upon said hull portion with a substantially gas tight joint between said portions, said portions when so fitted together and squeezed functioning as a bulb from which fluid is expelled through said nozzle and into which fluid is drawn when said portions recover their shapes upon release of such squeeze.

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