March 17, 1925. 1,530,460

J. B. DECKER

PROCESS OF MAKING TOY TORPEDOES AND THE LIKE

Filed Aug. 16, 1924

Fig. 1.

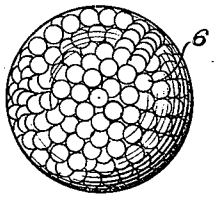
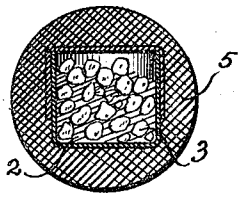


Fig. 2.



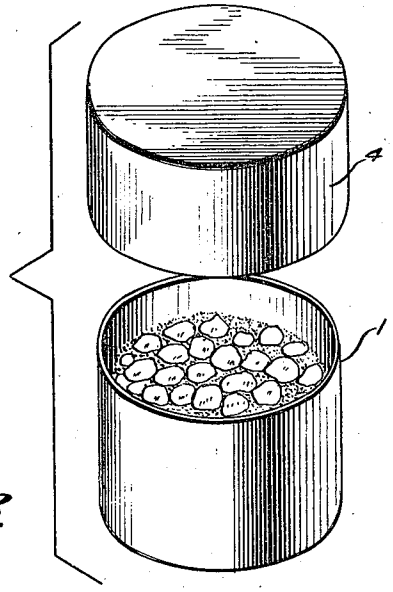


Fig 3.

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By

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Patented Mar. 17, 1925. 1,530,460

UNITED STATES PATENT OFFICE.

JOSEF B. DECKER, OF ELKTON, MARYLAND.

PROCESS OF MAKING TOY TORPEDOES AND THE LIKE.

Application filed August 16, 1924. Serial No. 732,547.

To all whom it may concern:

Be it known that I, JOSEF B. DECKER, a citizen of the United States, residing at Elkton, in the county of Cecil and State of Maryland, have invented certain new and useful Improvements in Processes of Making Toy Torpedoes and the like, of which the following is a specification.

This invention relates to explosives, and more particularly to methods of making toy torpedoes, toy grenades, and the like.

An object of the invention is the provision of a method of manufacturing toy torpedoes in which the possibility of explosions is reduced to a minimum.

In the manufacture of toy torpedoes, mixtures of chemicals are employed consisting of materials which are susceptible to easy oxidation, materials capable of supplying oxygen, and an abrasive. In the manufacture of such explosives, these materials are first mixed in a large batch and the amount of the mixture necessary for each torpedo is separated therefrom. Such mixtures, due to shock, concussion, or friction, frequently explode accidentally and the material capable of oxidation is rapidly oxidized by the oxygen carrier. This prevents a serious danger factor due to the mixing of the explosive materials prior to the introduction of the same into the toy grenade or torpedo shell. A toy torpedo or grenade is in itself, relatively safe to handle as the amount of explosive encased in the shell or the individual charge is too small to cause an explosion.

In practicing the present process, I minimize the danger of explosions by placing the material capable of oxidation and the abrasive in the torpedo shell or chamber and then add the oxidizing material to the mixture. In the use of a mixture consisting of sulfur, potassium chlorate, and antimony sulfide in which the latter material, together with a certain amount of gravel, acts as the abrasive, I first mix the sulfur and antimony sulfide. Sulfur is capable of easy oxidation but in the absence of a ready supply of oxygen, is not explosive and a mixture of sulfur and antimony sulfide is therefore not explosive. These materials may be mixed in relatively large quantities in the proper proportions, such as are generally employed in the manufacture of torpedoes and may be readily handled without danger. The mixture may be placed in shells or casings of the size generally employed in toy torpedoes or toy grenades and the proper proportion of potassium chlorate or other material serving as an oxygen carrier is then added to the individual charge within the shell or casing. A small amount of gravel is added to facilitate the action of the antimony sulfide or other abrasive and the receptacle is then capped and carried to a coating machine where an outer casing is placed thereon. During the coating operation, the contents of the receptacle are thoroughly mixed and the article is then in condition to function properly. If the mixing, or other handling of the ingredients of the torpedo should cause an explosion, the explosion is confined to a single torpedo which does not carry sufficient amount of explosive material to cause a dangerous accident.

In the accompanying drawings, I have shown one embodiment of the invention. In this showing:

Figure 1 is an elevation of the finished torpedo,

Figure 2 is a central vertical sectional view, and,

Figure 3 is a perspective view of the inner casing or shell.

Referring to the drawings, the reference numeral 1 designates an inner shell of a proper size to receive the explosive mixture of the torpedo. This shell is provided with a filling 2, formed of a mixture of sulfur or other readily oxidizable material, potassium chlorate, or other carrier of oxygen, and antimony sulfide or other abrasive material. Gravel 3 is arranged within the mixture, as shown. The casing is provided with a suitable cap 4 which is adapted to be placed thereon after the charge has been arranged within the shell and an outer casing 5 is arranged over the shell and formed in any suitable shape. In the drawings, I have shown a torpedo in the form of a sphere in which the outer casing is formed of small disks 6 of paper, which overlap each other and are secured in position by means of a suitable adhesive.

In practing the process, the material to be oxidized and the abrasive are first mixed in the proper proportions and an individual charge of this mixture is placed in each of the shells 1. The oxygen carrier and gravel are then placed in the top of the shell and the shell capped. The outer casing 5 is applied

by means of a suitable coating machine and the agitation of the device during the coating operation properly mixes the various ingredients to form an explosive mixture that will properly function.

As stated, an explosion of an individual shell is not serious and will not generally result in a hazardous explosion or fire.

It is to be understod that the form of my invention herewith shown and described is to be taken as a preferred example of the same, and that various changes in the shape, size, and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

I claim:

1. The process of making toy torpedoes which comprises placing a mixture of a readily oxidizing material and an abrasive in a shell, adding an oxygen carrying material thereto, and placing a coating over the shell.

2. The process of making toy torpedoes which comprises placing a mixture of a readily oxidizing material and an abrasive in a shell, adding an oxygen carrying material and gravel thereto, and placing a coating over the shell.

3. The herein described process of manufacturing toy explosives which comprises forming a mixture of a readily oxidizing material and an abrasive, placing an individual charge of said mixture in a shell, adding an oxygen carrying material thereto, and closing said shell.

4. The herein described process of manufacturing toy explosives which comprises forming a mixture of a readily oxidizing material and an abrasive, placing an individual charge of said mixture in a shell, adding an oxygen carrying material thereto, capping the shell, and agitating it to mix said materials.

5. The herein described process of manufacturing toy explosive which comprises forming a mixture of a readily oxidizing material and an abrasive, placing an individual charge of said mixture in a shell, adding an oxygen carrying material and gravel thereto, capping the shell, and agitating it to mix said materials.

6. The herein described process of manufacturing toy explosives which comprises forming a mixture of readily oxidizing material and an abrasive, placing an individual charge of said mixture in a shell, adding an oxygen carrying material thereto, capping the shell, and applying an outer coating thereto, said shell being agitated during the application of the coating whereby said ingredients are thoroughly mixed.

7. The method of making toy torpedoes which comprises placing a mixture of a readily oxidizing material and an abrasive in a shell, and adding the desired quantity of an oxygen carrying material thereto.

In testimony whereof, I affix my signature in presence of two witnesses.

JOSEF B. DECKER.

Witnesses:
HENRY B. FABER,
J. F. HUBBARD.

Certificate of Correction.

It is hereby certified that in Letters Patent No. 1,530,460, granted March 17, 1925, upon the application of Josef B. Decker, of Elkton, Maryland, for an improvement in "Processes of Making Toy Torpedoes and the like," errors appear in the printed specification requiring correction as follows: Page 1, line 28, for the word "prevents" read *presents*, and line 106, for the misspelled word "practing" read *practising;* and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 13th day of April, A. D. 1926.

[SEAL.]

M. J. MOORE,
Acting Commissioner of Patents.