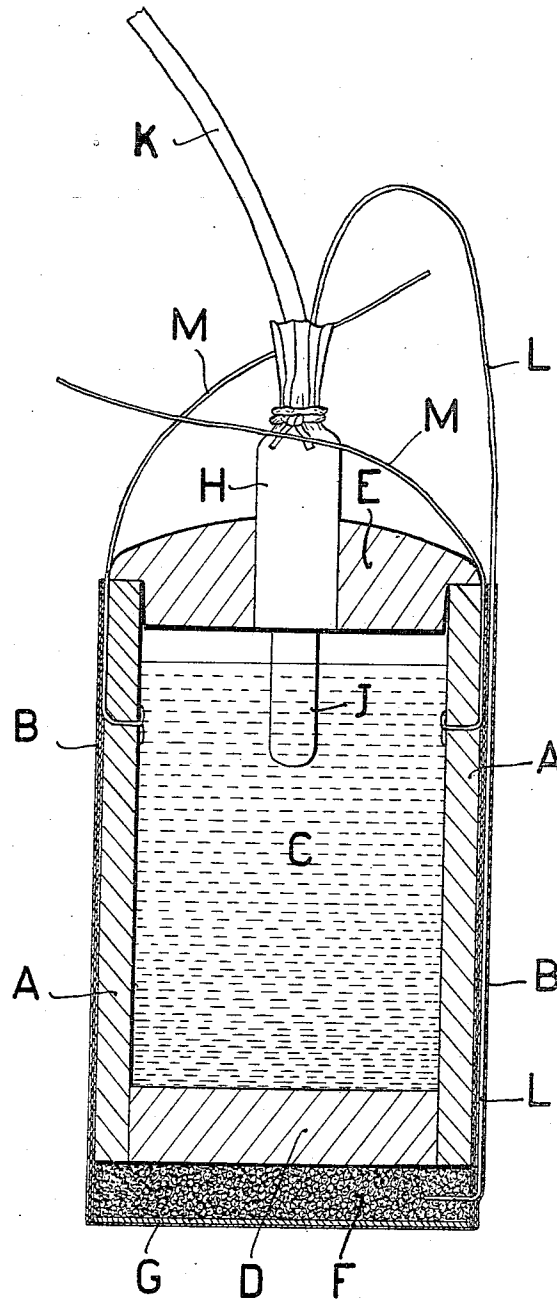


W. MEYER.
 APPARATUS FOR CALMING SEA WAVES.
 APPLICATION FILED DEC. 29, 1911.

1,043,125.

Patented Nov. 5, 1912.



Witnesses.

E. J. Simpson
L. C. Barkley

Inventor

Wilhelm, Meyer

per Frank A. Akeman

Attorney.

UNITED STATES PATENT OFFICE.

WILHELM MEYER, OF SILBERHÜTTE, ANHALT, GERMANY.

APPARATUS FOR CALMING SEA-WAVES.

1,043,125.

Specification of Letters Patent.

Patented Nov. 5, 1912.

Application filed December 29, 1911. Serial No. 668,574.

To all whom it may concern:

Be it known that I, WILHELM MEYER, manufacturer, a citizen of Germany, residing at Silberhütte, Anhalt, Germany, have invented new and useful Improvements in Apparatus for Calming Sea-Waves, of which the following is a specification.

Sea waves have been calmed by spreading a layer of oil over the surface of the water which subdues the waves over a large surface owing to its surface tension. The oil for this purpose has hitherto been poured upon the water or has been transferred to the surface of the water by means of sacks of permeable material from ships. It has also been suggested to throw out oil in open vessels upon the surface of the water. These processes, however, have the disadvantage that the oil comes into contact with the water while it is in the condition of a more or less compact mass. It therefore takes a certain time for the layer of oil to spread out over a large surface in order to so calm the waves that they are no longer dangerous. In addition to these disadvantages there is the further disadvantage which is present when it is desired to calm the waves near ships at anchor such as, for instance, light or fire ships. It has been found in these cases that with the old processes the layer of oil is very quickly driven away by the motion of the waves, currents, or the wind, and that the ship is then again subjected to the unhindered action of the waves. In order to avoid these disadvantages it has already been proposed to place the oil in a hollow vessel which is shot out from the ship and is exploded at a certain distance from it by means of a time fuse. In the case where a ship at anchor is to be protected, the hollow vessel is shot out in a direction opposite to the motion of the waves, current, or wind so that it strikes the waves at a considerable distance, for instance 200 yards, away from the ship. The time fuse is so adjusted that the explosion takes place shortly before or after the vessel strikes the surface of the sea. Owing to the explosion the oil is sprayed out in all directions with considerable force and over a large area. When

they strike the water, the sprayed particles of oil close together over the surface of the sea and in a short time form a firmly coherent layer which is then driven toward the ship to be protected by the movement of the waves, current or wind. The projecting of the oil shell may be repeated from time to time.

My invention relates to a special form of such an apparatus.

A constructional example of the apparatus according to the present invention is illustrated in the accompanying drawing in section.

The hollow shell consists of a casing A preferably of wood, cardboard or like material, which is provided with a layer B of tar, varnish, tarred paper or the like, to protect it from outside influences during transport and storage. The hollow space C of the casing A is closed at the bottom by means of a firm base D and at the top by a lid E. A chamber F is arranged beneath the base D between the lower portion of the protective case B and the second base G which is constructed, for instance, of plate or the like. The hollow space C is filled with oil and a propelling charge is provided in the chamber F. In the covering a time fuse H is arranged, the lower end of which is provided with an explosive charge J reaching into the oil. A fuse K passes into the time fuse H and is here connected with a fuse conductor L leading to the charge F. The covering E is preferably arranged to be easily detachable and is held in place by wires M which are secured to the casing A and are adapted to be connected together above the covering to hold this in place. The shell is preferably sent out empty and stored in this condition and only filled with oil when required for use.

The improved shell according to the present invention is used in the following manner: After having been filled with oil the covering is placed thereon and secured. The shell is then placed in a gun (not shown). The gun is inclined in the direction in which the shell is required to be exploded and may be adjusted vertically and

laterally. The fuse K at the muzzle of the gun is then flashed and burns together with the time fuse H. This causes the fuse L also to burn and the latter quickly conducts the flash to the charge F which explodes and impels the shell from the gun leaving the base G behind. During the flight of the shell through the air, the time fuse H burns until at a predetermined time the explosive charge J in the oil chamber is exploded. A high pressure is thereby suddenly imparted to the oil within the hollow chamber, which causes the shell casing A together with its protective layer B and the base D to burst and forcibly spray the oil in all directions.

The construction and nature of the time fuse H, explosive charge J and charge F are immaterial for the purpose of the present invention. The size and explosive force of the charge F must be proportional to the predetermined time period from the lighting of the fuse H to the explosion of the explosive charge J. The adjustment of the shell is such that the explosion of the explosive charge J takes place shortly before or after this has struck the surface of the sea. The various ignitions may take place by electrical means instead of by fuses.

What I claim is:

1. Apparatus for calming sea waves consisting of a hollow shell containing oil, a detachable cover on said shell, a time fuse on said cover, an explosive charge in said shell, an impelling charge on said shell, means for igniting said impelling charge and said time fuse, and connecting means between said time fuse and said explosive charge to explode the shell at a predetermined moment.

2. Apparatus for calming sea waves consisting of a hollow shell containing oil, a detachable cover on said shell, a time fuse on said cover, an explosive charge in said shell, an impelling charge on said shell, shell, a fuse lead for igniting said impelling charge to project the shell to a distance, a fuse lead for igniting said time fuse, and means whereby the explosive charge in the shell is ignited at a predetermined moment from said time fuse.

3. An apparatus for calming sea waves consisting of a hollow vessel of fibrous material containing oil, an impervious protective casing thereon, a cover on said vessel, an impelling charge in the base of said hollow vessel, a time fuse on the cover of said vessel, a fuse lead igniting said time fuse, a fuse lead igniting said impelling charge, and means for releasing oil from the vessel.

4. An apparatus for calming sea waves consisting of a hollow vessel of fibrous ma-

terial containing oil, an impervious protective casing thereon, a cover on said vessel, an impelling charge in the base of said hollow vessel, a time fuse on the cover of said vessel, a fuse lead igniting said time fuse, a fuse lead igniting said impelling charge, and means for exploding the hollow vessel to distribute the oil at a predetermined moment.

5. An apparatus for calming sea waves consisting of a vessel containing oil, an impelling charge in the base of said vessel, a metal plate inclosing said charge, an impervious outer protective casing, a detachable cover to said vessel, a time fuse on said cover, an explosive charge on said cover ignited by said time fuse, fuse leads on the time fuse, and the impelling charge.

6. An apparatus for calming sea waves consisting of a vessel containing oil, an impelling charge on the base of said vessel, a metal plate inclosing said charge, an impervious outer protective casing, a detachable cover to said vessel, a time fuse on said cover, an explosive charge on said cover ignited by said time fuse, fuse leads on the time fuse, fuse leads connecting said time fuse to said impelling charge.

7. An apparatus for calming sea waves consisting of a vessel containing oil, an impelling charge in the base of said vessel, a metal plate inclosing said charge, an impervious outer protective casing, a detachable cover to said vessel, a time fuse on said cover, an explosive charge on said cover ignited by said time fuse, fuse leads on the time fuse, and the impelling charge, means for fastening the cover to the vessel and means operated by the time fuse to release the oil at a predetermined moment.

8. An apparatus for calming sea waves consisting of a vessel containing oil, an impelling charge on the base of said vessel, a metal plate inclosing said charge, an impervious outer protective casing, a detachable cover to said vessel, a time fuse on said cover, an explosive charge on said cover ignited by said time fuse, fuse leads on the time fuse, fuse leads connecting said time fuse to said impelling charge, means for fastening the detachable cover to said vessel, and means operated by said time fuse to explode said explosive charge to release the oil at a predetermined moment.

9. An apparatus for calming sea waves consisting of a vessel containing oil, an impelling charge on the base of said vessel, an impervious outer protective casing, a detachable cover on said vessel, wires secured to said vessel and adapted to secure the cover to the vessel, a time fuse on said cover, an explosive charge on said cover ignited by said time fuse, a fuse lead on the time fuse,

and a fuse lead connecting said time fuse to
said impelling charge, and means operated
by said time fuse to ignite said explosive
charge for the purpose of releasing the oil
5 at a predetermined moment.

In witness whereof, I have hereunto
signed my name this 16th day of December,

1911, in the presence of two subscribing wit-
nesses.

WILHELM MEYER.

Witnesses:

HENRY HASPER,

WOLDEMAR HAUPT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."