

(No Model.)

A. H. WALKER.
SEA OILING PROJECTILE.

No. 390,729.

Patented Oct. 9, 1888.

Fig. 1

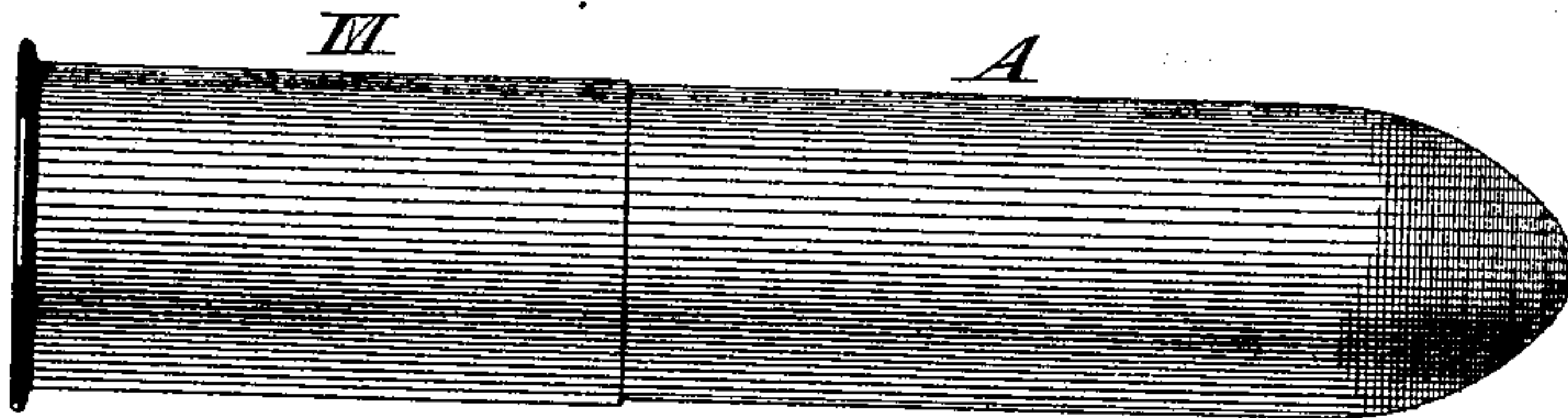
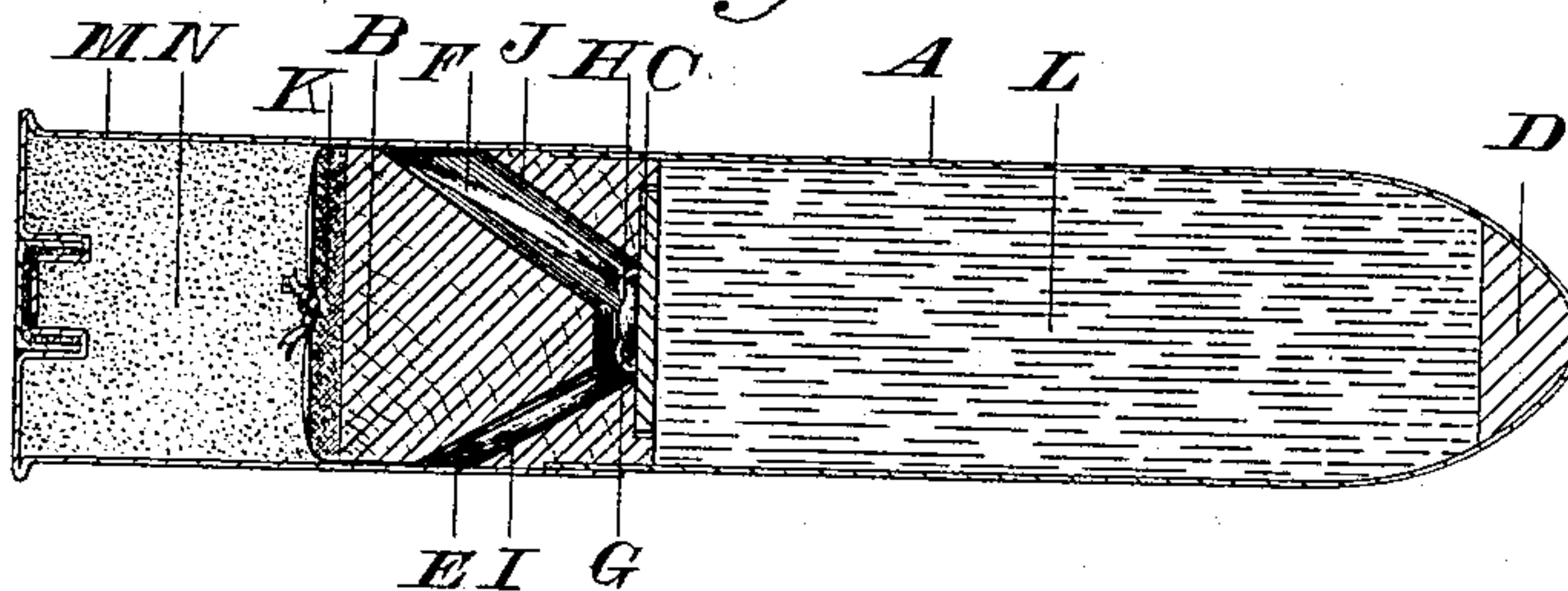


Fig. 2



Witnesses,
C. E. Buckland.
Harry R. Williams.

Inventor,
Albert H. Walker.

UNITED STATES PATENT OFFICE.

ALBERT H. WALKER, OF HARTFORD, CONNECTICUT.

SEA-OILING PROJECTILE.

SPECIFICATION forming part of Letters Patent No. 390,729, dated October 9, 1888.

Application filed April 13, 1888. Serial No. 270,577. (No model.)

To all whom it may concern:

Be it known that I, ALBERT H. WALKER, of Hartford, Connecticut, have invented a new and useful Sea-Oiling Projectile, of which the following description and claims constitute the specification, and which is illustrated by the accompanying sheet of drawings.

This projectile is adapted to contain oil and to be thrown from a ship into the sea and to discharge that oil upward through the water to the surface of the waves, and thus to allay the combers which would otherwise form upon their crests.

Figure 1 of the drawings is an exterior view of a sea-oiling cartridge containing this projectile. Fig. 2 is a central longitudinal section of the cartridge of Fig. 1.

The letter A indicates the shell of the projectile which carries the oil to the sea.

The letter B indicates the base of the projectile, which base is preferably a cylindrical block of hemlock or spruce or other wood or substance of similar specific gravity.

The letter C indicates a valve, preferably made of iron, and occupying a seat in the center of the inner end of the base-block B.

The letter D indicates a weight, preferably consisting of lead, cast into the forward end of the shell A.

The letters E and F indicate a narrow tape, preferably made of loosely-spun flax or cotton, and serving to hold the valve C in its seat by being attached at its forward part to the ears G and H, which project from the backward side of the valve, and by being passed thence backward through the cylindrical openings I and J to opposite sides of the base-block B, and thence over the wad K, which is preferably made of felt, and placed upon the rearward side of the base-block; and, finally, by being tied at its rearward ends in a tight hard knot on the rearward side of the wad.

The letter L indicates the oil-chamber in the shell A, and which oil-chamber, when two and five-eighths inches long and one inch in diameter, contains about one ounce of oil.

The letter M indicates the cartridge-shell, which contains the powder-chamber N, and is constructed in all respects like well-known cartridge-shells of warfare, and which holds and throws the projectile described in the last

paragraph in precisely the same manner that such cartridge-shells have heretofore been made to hold and throw cylindrical projectiles of lead or iron.

The above-described projectile is constructed by making the shell A of metal or paper or other suitable substance, and by casting the weight D into the forward end of the interior thereof and by fastening the valve C and the wad K to the base-block B by means of the tape E F, and then by inserting the base-block, thus furnished, tightly into the rearward end of the shell A after filling that shell with oil nearly up to the line to be occupied by the forward side of the base-block B and the valve C. Thus completed, the projectile may be fastened in the cartridge-shell in the same manner that solid cylindrical projectiles of warfare are fastened in such shells.

The mode of operation is as follows: The cartridge is placed in any breech-loading cartridge-firing rifled gun of suitable caliber, located on shipboard or on shore, and the gun is directed over the waves to be allayed and is discharged in the manner proper with that sort of gun. The explosion of the powder in the powder-chamber N ignites and burns and thus severs the tape E F and drives the projectile out of the cartridge-shell, out from the mouth of the barrel of the gun, to a distance over the water, according to the charge of powder, the length and elevation of the gun-barrel and the weight and the cross-section of the projectile and its contents. During the flight of the projectile through the air the valve C is caused to retain its place in its seat on the forward side of the base-block B by the outward suction through the openings I and J, which is caused by the rapid passage of the projectile through the atmosphere. When the projectile reaches the water, its momentum carries it point downward somewhat below the surface, although its aggregate specific gravity is less than that of water. As soon as its downward motion is arrested by the water, the valve C falls from its seat through the oil to the forward end of the oil chamber, and thus uncovers the forward ends of the openings I and J. Thereupon the oil naturally rises through those openings and out of the projectile, while a corresponding quantity of water enters the pro-

jectile to take its place. This operation continues until the whole of the oil in the projectile is discharged from the upward end thereof, whence it rises to the surface of the sea, where
5 it spreads like a film upon the waves.

This projectile may be used without the cartridge-shell M and the powder-chamber N, and may be thrown from a ship into the sea by means of a cord, one end of which is provided
10 with a hook engaged under the knotted tape E F rearward of the base-block B, in which case the sailor seizes the cord and swings the projectile around his head in a horizontal plane until it has acquired a sufficient momentum and is directed over the side of the ship,
15 when, by suddenly jerking the cord, he causes the hook to break the tape, and thus enables the projectile to fly point forward through the air into the sea.

The felt wad K may be omitted when the rearward end of the base-block B fits tightly in the cartridge-shell M, and the valve C may be retained in its seat while the projectile is being manufactured—and afterward, before it
25 is used—otherwise than by means of the tape E F, consistently with being released from such substituted means of retention at the instant the projectile is expelled from the cartridge-shell. So, also, one opening through the base-
30 block B may be made and employed instead of two or more.

The specific gravity of the valve C must be greater than that of oil, and not great enough to prematurely dislocate it from its seat, or to
35 neutralize the buoyancy of the rearward end of the projectile, which is caused by the small specific gravity of the base-block B.

The specific gravity of the weight D must be great enough to cause the forward end of
40 the projectile to point downward in the sea, but not great enough to cause the aggregate specific gravity of the projectile to exceed that of sea-water.

The oil in the projectile may be fish oil, linseed oil, olive-oil, crude petroleum, or lubricating mineral oil, and still other oils will produce beneficial results, though fish-oil is probably best. When the projectiles are to be
45 used in cold weather, any thick and heavy oil therein requires to be mixed with lubricating mineral oil to give it sufficient fluidity.

Published data relevant to extemporaneous experiments which have been made with oil

upon broken water indicate a high degree of efficacy in the scientific use of small quantities thereof, and thereby point to the opinion
55 that an ocean steamer going forward fifteen miles an hour and provided with a suitable breech-loading rifle fixed upon deck, and provided with a supply of the foregoing-described
60 cartridges, can make in a raging sea a path of unbroken water for itself an eighth of a mile wide and extending always an ample distance ahead by simply shooting these projectiles with sufficient frequency from that
65 rifle to a receding transverse line an eighth of a mile long and a mile or less in advance of the ship; and when lying to, or when lowering or hoisting boats in a heavy sea, the comb-
70 ers can be kept at any necessary distance away from a ship by throwing these projectiles to windward into the sea to a corresponding distance from the sides of the same, and by repeating the operation from time to time, if required. So, also, in cases of shipwreck
75 within a mile of a shore a path of unbroken water may be made from the shore to the ship by means of these projectiles, and may furnish a safe passage to and fro for boats and
80 rescuers.

I claim as my invention—

1. A sea-oiling projectile consisting of a shell containing oil, one end of which is provided with a weight of greater specific gravity than water, and the opposite end of which is
85 provided with a block or its equivalent of less specific gravity than water, and with a valve of greater specific gravity than oil, to close an opening through that block during the flight of the projectile through the air because of
90 suction at the rear of the projectile, and afterward to uncover that opening because of that greater specific gravity, all substantially as described.

2. The combination of the shell A, the base-
95 block B, provided with an opening there-through, the valve C, closing that opening, the weight D, and the tape E F, holding the valve C on its seat on the base-block B, and adapted to release that hold when burned or broken,
100 all substantially as described.

Hartford, Connecticut, April 12, 1888.

ALBERT H. WALKER.

Witnesses:

CHARLES H. CLARKE,
CHARLES A. SAFFORD.