(No Model.) 2 Sheets—Sheet 1.

A. H. WALKER.

PROJECTOR FOR SEA OILING SHELLS.

No. 380,371. Patented Apr. 3, 1888.

Fig. 1

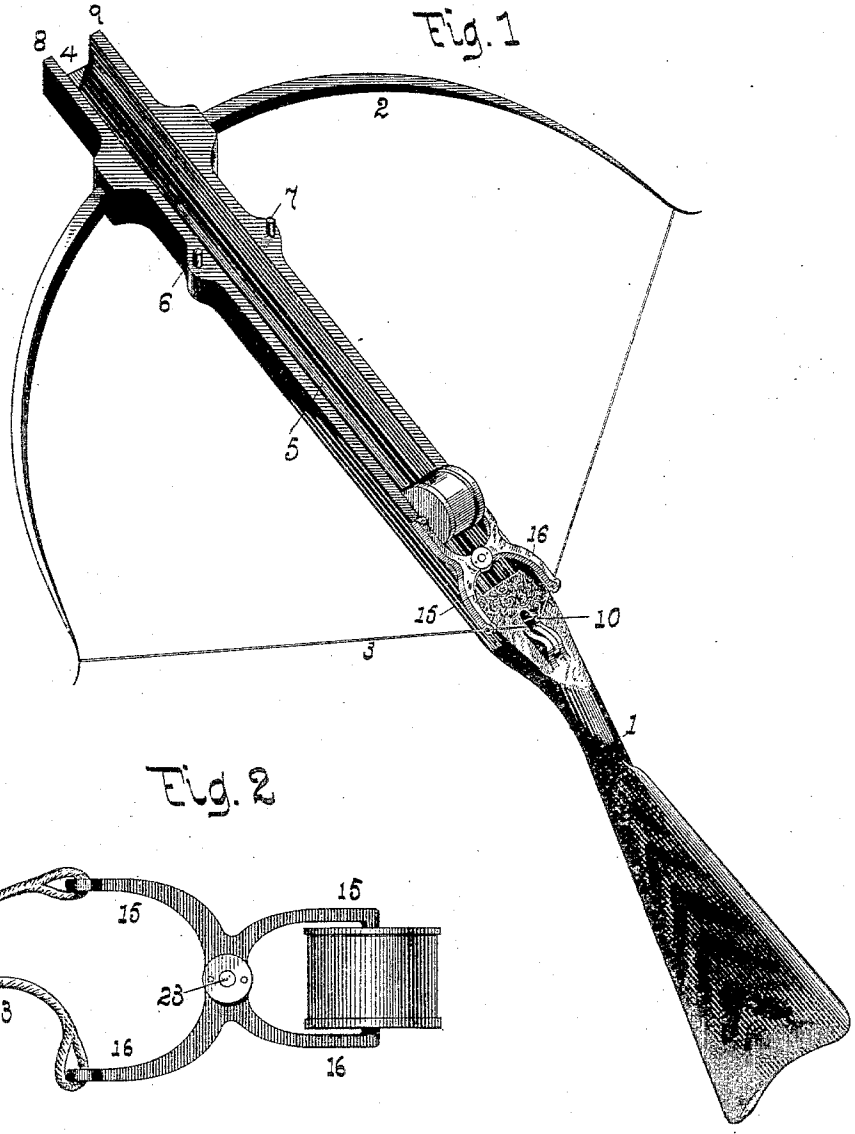
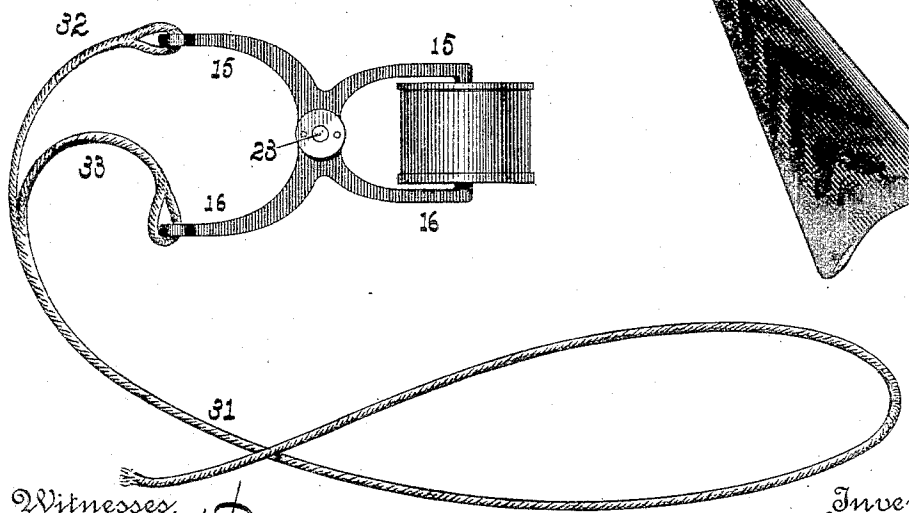


Fig. 2



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(No Model.) 2 Sheets—Sheet 2.

A. H. WALKER.

PROJECTOR FOR SEA OILING SHELLS.

No. 380,371. Patented Apr. 3, 1888.

Fig. 3

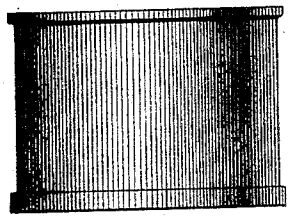


Fig. 4

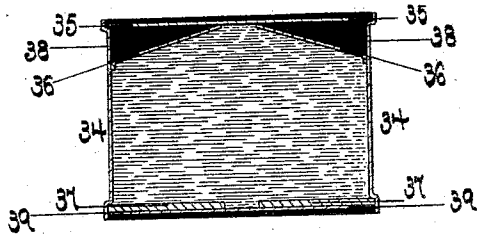


Fig. 5

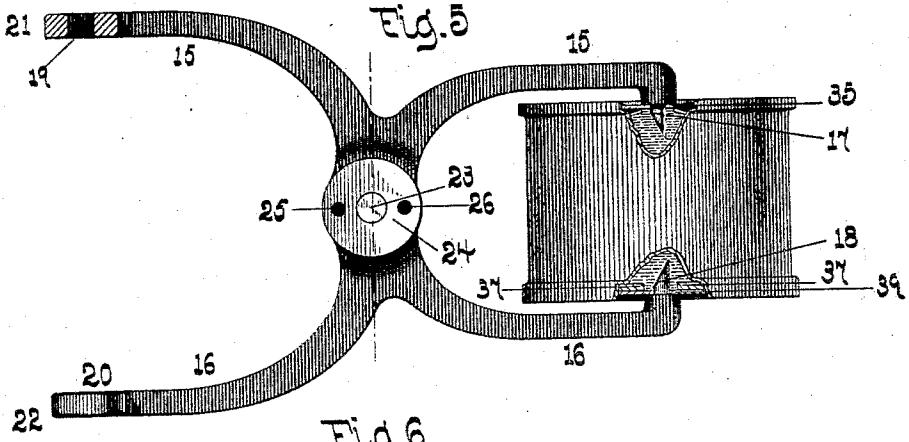


Fig. 6

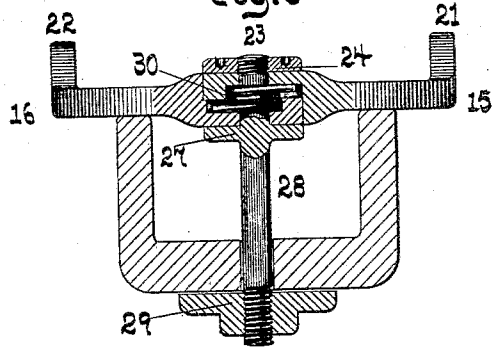
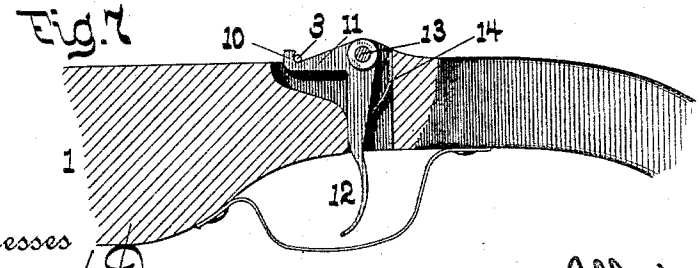


Fig. 7



Witnesses

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UNITED STATES PATENT OFFICE.

ALBERT H. WALKER, OF HARTFORD, CONNECTICUT.

PROJECTOR FOR SEA-OILING SHELLS.

SPECIFICATION forming part of Letters Patent No. 380,371, dated April 3, 1888.

Application filed January 7, 1888. Serial No. 260,025. (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 Projector for Sea-Oiling Shells, of which the following description and claims constitute the specification, and which is illustrated by the accompanying two sheets of drawings.

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

Figure 1 of the drawings is a perspective view of a cross-bow provided with my projector and so modified by me as to co-operate with that projector in throwing a projectile containing oil. Fig. 2 is a view of my projector with the projectile containing oil adjusted therein, ready to be thrown therefrom, and provided with a bifurcated rope, by means of which the projector may be managed as a sling to hurl the projectile into the sea. Fig. 3 is an exterior full-sized view of a cylindrical projectile containing oil invented by me and suitable to be used with my projector. Fig. 4 is a central vertical section of the projector of Fig. 3. Fig. 5 is a full-sized view of the projector with the projectile in position, ready to be thrown therefrom, and showing parts of the projectile broken away, so as to exhibit the manner in which it is held by the projector. Fig. 6 is a cross-section on the dotted line of Fig. 5, looking toward the left of that line. Fig. 7 is a vertical central longitudinal section of that part of the cross-bow which contains the lock.

The numeral 1 indicates the body, the numeral 2 indicates the bow, and the numeral 3 indicates the cord of the cross-bow. The body of the bow is provided with the longitudinal groove 4, and the longitudinal slot 5 is cut through the floor of the groove 4, midway between the sides thereof, and extending from the rear end of that groove forward to a point somewhat in the rear of the bow. The studs 6 and 7 are rigidly fixed in the rails 8 and 9, which constitute the sides of the groove 4, at a place somewhat in the rear of the forward end of the slot 5. The lock of the cross-bow consists of the hook 10 on the end of the arm 11, which arm is integral with the trigger 12 and rocks on the shaft 13 under the action or against the resistance, as the case may be, of the spring 14.

The numerals 15 and 16 indicate the two levers which constitute the principal parts of the projector. Those levers are respectively provided at their forward ends with the inwardly-extending prongs 17 and 18 and at their rear ends with the aligning apertures 19 and 20 through the ears 21 and 22, respectively, and they are pivoted together by the bolt 23. That bolt is held in position by the nut 24, which is capable of being turned by the insertion of a bifurcated implement in the recesses 25 and 26, and it holds the two levers together between that nut and the shoulder 27. The bolt is also provided with the downward extension 28, which passes through the longitudinal slot 5 of the body of the cross-bow and has its lower end tapped into the nut 29. The spiral spring 30 encircles the bolt 23 in a recess formed between the lower side of the lever 15 and the upper side of the lever 16, and is so placed in that recess as to tend to cause the forward ends of the levers 15 and 16 to approach each other. The rope 31 has its branches 32 and 33 made fast to the ears 21 and 22 of the levers 15 and 16 when the projector is to be used like a sling.

The numeral 34 indicates the shell of the projectile, which is manufactured by inserting the disk 35 in one end of that shell and soldering it to the annular shoulder upon which, in Fig. 4, it is shown to rest; then by inserting the convex and centrally-perforated disk 36 in the other end of that shell and pressing it up until its truncated apex is in contact with the disk 35, then soldering the interior border of the disk 36 to the inside of the disk 35 and the exterior border of the disk 36 to the interior of the shell 34, and thereupon in inserting the perforated disk 37 in the opposite end of the shell 34 until it rests, as shown, upon the adjacent annular shoulder in that end, then pouring oil through the aperture in the disk 37 until all of the interior of the projectile except the annular air-chamber 38 is filled with oil, and, finally, in inserting the disk 39

upon the outside of the disk 37 and soldering it firmly in place by a circle of solder extending entirely around its border and entirely around the adjacent inner border of the shell 34.

When the filled projectile of Fig. 3 is to be thrown by the cross bow, it is placed in the groove 4, with its axis on a line with the prongs 17 and 18 of the forward ends of the levers 15 and 16, which are opened to admit the projectile by forcing the rear ends of the levers toward each other. Then the forward ends of the levers are forced toward each other by the spring 30, with the assistance of the hand of the archer who manages the cross-bow, thus causing the prongs 17 and 18 to penetrate the disks 35 and 39, respectively, as shown in Fig. 5. Then the archer pulls the middle of the cord 3 over the hook 10, thus putting all the parts in the position shown in Fig. 1. Thereupon he directs the body of the cross-bow toward the place where he wishes to throw the projectile and pulls the trigger 12. Thus disengaged from the hook 10 and pulled by the bow 2, the cord 3 carries the projector and projectile forward until the projectile reaches that part of the groove 4 which is over the middle of the bow 2, when the studs 6 and 7 collide with the rear ends of the levers 15 and 16, respectively, thus forcing those ends together and the forward ends of those levers apart, so as to extract the prongs 17 and 18 from the openings which they have made in the disks 35 and 39, respectively. All further forward movement of the projector is prevented by the downward projection 28 of the bolt 23 reaching the forward end of the slot 5; but the projectile being now disengaged from the projector is carried, by the momentum received from the projector, out of the forward end of the groove 4 and to a distance over the ocean proportionate to the strength of the bow and the length and elevation of that portion of the groove 4 through which it was forced by the projector.

When the projector is worked like a sling, the projectile is impaled between the prongs of the forward ends of the levers 15 and 16, as shown in Fig. 2. Then the sailor seizes the rope 31 and swings the projector and projectile around his head in a horizontal plane until it has acquired a sufficient momentum and is directed over the side of the ship, when by suddenly jerking the rope 31 the rear ends of the levers 15 and 16 are forced toward each other, and the forward ends of those levers are forced apart against the action of the spring 30, so as to release the projectile from the prongs 17 and 18. Thus the projectile is hurled, like a stone from a sling, into the sea.

During the flight of the projectile through the air the oil is prevented from passing out through the openings in the disks 35 and 39, by reason of the smallness of those openings and the shortness of the time of that flight, and sometimes, also, by the centrifugal force of the oil, which is generated by the revolution of the projectile upon its own axis as it flies.

When the projectile reaches the water, it sinks slightly below the surface and floats in that position with the air-chamber 38 upward. Thereupon the oil is emitted from the projectile through the opening in the disk 35, and passes upward to the surface of the sea, and is replaced in the projectile by water admitted through the opening in the disk 39. The length of time occupied in the emission and rising of the oil will depend upon the size of the opening in the disk 35 as compared with the bulk of the oil to be emitted. A projectile of the size shown in Figs. 3 and 4 will hold about two ounces of oil, and when the opening in the disk 35 is of the size indicated by the prong 17, and when the oil is of proper fluidity, the emission will be completed in about five minutes.

When the projector is to be used with the cross-bow, the cord 3 may be rigidly fixed to the rear ends of the levers 15 and 16, and the spring 30 may be omitted, for the bow 2 will in that case strain the rear ends of the levers apart and press their forward ends together. So, also, the downward extension 28 may always be omitted when the projector is used as a sling, and it may also be omitted when the projector is used with the cross-bow, if the cord 3 is rigidly fixed to the rear ends of the levers, so as to positively guide the forward movement of the projector.

I do not herein claim the projectile shown in the drawings, because I do claim it in another application for Letters Patent of the United States of America executed and filed contemporaneously herewith.

I claim as my invention—

1. A projector for sea-oiling shells, consisting of the levers 15 and 16, provided with the inwardly-projecting prongs 17 and 18, respectively, and pivoted together midway of their lengths by the bolt 23, and mutually provided with the spring 30, all substantially as described.

2. The combination of the cross-bow provided with the longitudinal groove 4 and the studs 6 and 7 on opposite sides of that groove, with the levers 15 and 16, provided with the inwardly-projecting prongs 17 and 18, respectively, and pivoted together midway of their lengths by the bolt 23, all substantially as described.

3. The combination of the cross-bow provided with the longitudinal groove 4 and the longitudinal slot 5 through the floor of that groove and the studs 6 and 7 on opposite sides of that groove, with the levers 15 and 16, provided with the inwardly-projecting prongs 17 and 18, respectively, and pivoted together midway of their lengths by the bolt 23, having the downward extension 28, adapted to reciprocate in the slot 5, all substantially as described.

4. The combination of the cross-bow provided with the longitudinal groove 4 and the

longitudinal slot 5 in the floor of that groove and the studs 6 and 7 on opposite sides of that groove, with the levers 15 and 16, provided with the inwardly-projecting prongs 17 and 18, respectively, and also provided with the spring 30, and pivoted together midway of their lengths by the bolt 23, having the downward extension 28, adapted to reciprocate in the slot 5, all substantially as described.

Hartford, Connecticut, January 6, 1888.

ALBERT H. WALKER.

Witnesses:
HARRY R. WILLIAMS,
C. E. BUCKLAND.