

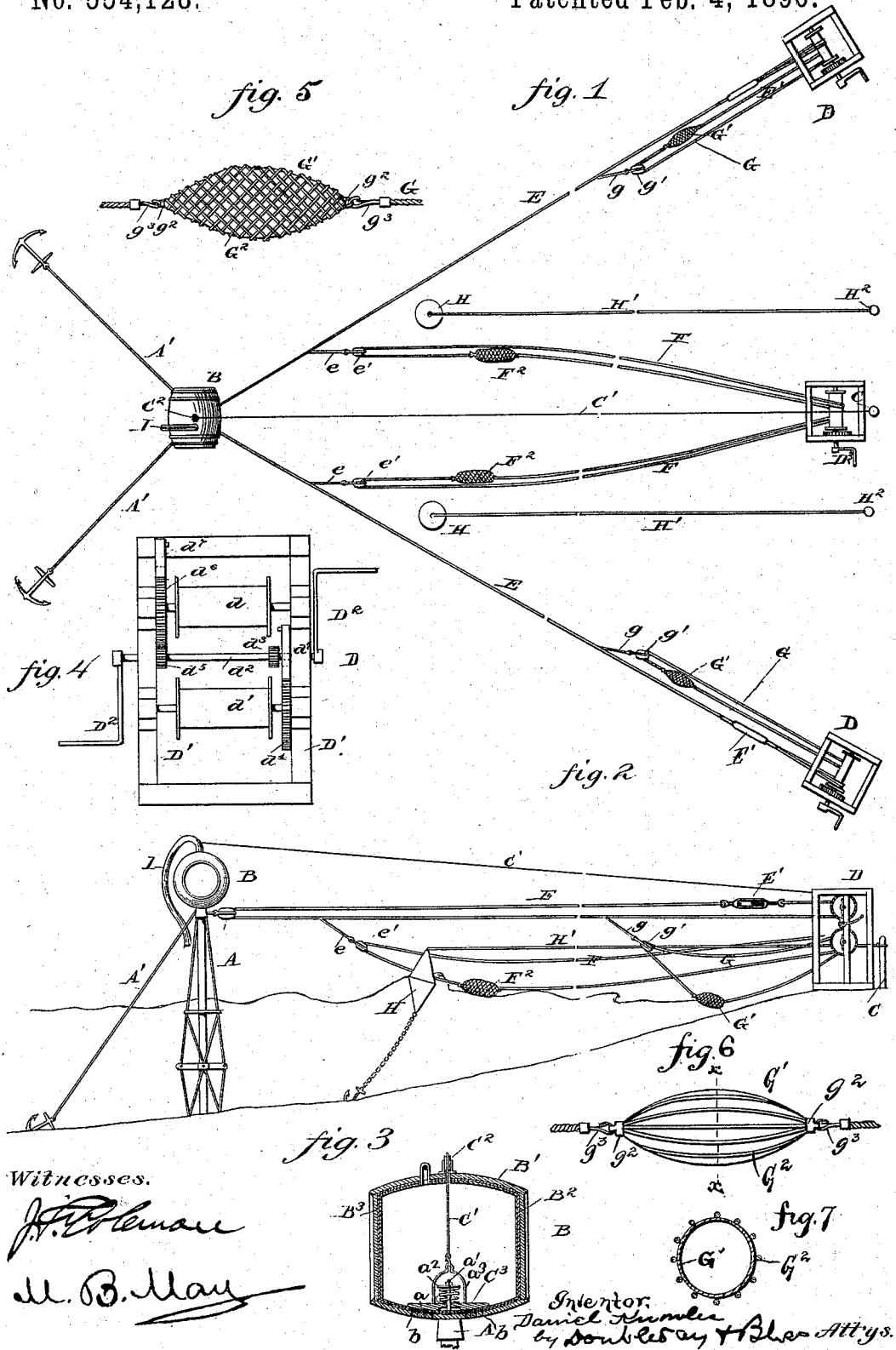
(No Model.)

D. KNOWLES.

APPARATUS FOR DISTRIBUTING OIL FOR CALMING WAVES.

No. 554,128.

Patented Feb. 4, 1896.



UNITED STATES PATENT OFFICE.

DANIEL KNOWLES, OF NORFOLK, VIRGINIA.

APPARATUS FOR DISTRIBUTING OIL FOR CALMING WAVES.

SPECIFICATION forming part of Letters Patent No. 554,128, dated February 4, 1896.

Application filed November 29, 1892. Renewed April 5, 1895. Serial No. 544,621. (No model.)

To all whom it may concern:

Be it known that I, DANIEL KNOWLES, a citizen of the United States, residing at Norfolk, in the county of Norfolk and State of Virginia, have invented certain new and useful Improvements in Apparatus for Distributing Oil for Calming Waves, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in apparatus for distributing oil for calming waves, to permit of the use of life-saving devices, and is intended to be used at the coast-guard stations which line the shores at intervals along the most dangerous portion of the coast where there are shoals and reefs. It is well known that in heavy seas oil has been successfully used by ships in pacifying the waves and making them comparatively quiet, and I have devised a means whereby oil may be used in rendering safer the transfer of the passengers and crew from a wrecked vessel to the shore. Whenever along the coast there are shoals and sand-bars the breakers make landing from the vessel by means of the life-boats well-nigh impossible, and it frequently occurs when the wind is blowing landward that the shots from the mortars fail to carry the life-line as far as the vessel, thereby cutting off means of escape by the life-cars. The way in which I utilize the oil, and the manner of distributing it upon the waves, will be hereinafter more fully set forth and described.

My invention consists of the features of arrangement and construction of the different parts, as more fully hereinafter described and claimed.

In the drawings, Figure 1 is a plan view of my apparatus. Fig. 2 is a side elevation. Fig. 3 is a section, enlarged, of the oil-receptacle. Fig. 4 is a front view of the windlass. Fig. 5 is one form of oil-bag which I employ. Fig. 6 is a side view, and Fig. 7 is a cross-section on line $x x$, Fig. 6, of a modified form of oil-bag.

I propose to place my apparatus at points, as aforesaid, along the coasts where there are shoals and sand-bars, and, as shown, the post A is firmly secured in place just beyond the edge of a sand-bar.

It will be seen that I employ a post or pole upon which to mount the oil-receptacle; but that is merely for convenience, as the said receptacle may float upon the water and be anchored in any suitable way.

The post A is firmly braced, as shown in Fig. 2, and has two or more back-stays or guy-wires A' A', the ends of which are attached to anchors securely embedded in the sand. Upon the post is mounted a large oil-tank B, capable of holding a large number of gallons of oil, and composed of the outer shell, B', of wood or iron or other material, and the inner metallic shell, B², there being an asbestos packing B³ between them. This packing is of great advantage and is necessary in order to prevent the oil from freezing during the cold weather. I do not limit myself to the use of asbestos, as any other non-conductor of heat may be used. I fill the tank when empty by means of the pipe I, using a small force-pump to force the oil up into the tank. Within the inner shell, B², there is a spring-valve C³, which may be of any ordinary sort, that shown being composed of the plate a, guide a', spring a², and bail or lifting device a³. There are apertures or slots b in the shells B' B² to allow the oil to escape when the valve is lifted. To the bail a³ is fastened the end of a rope or cable C', the said rope passing out of the top of the receptacle over a loose wheel C².

The rope or wire C' is fastened to a small post C erected on the shore, and it is merely necessary to exert a strain on the rope to allow the oil to escape from the tank and diffuse itself over the waves.

At a considerable distance on either side of the post C, I erect windlasses D D on the shore, and extending from them to blocks on the post A are wire cables E E, which are kept taut by wire-tighteners E' E'. These wires E, as will be seen, are at all times elevated above the surface of the water.

The windlasses D are of the sort having two drums d d', as shown in Fig. 4, for a purpose to be hereinafter described. The drums d d' are mounted in a frame D' and are alternately actuated by means of spur-gears d⁶ d⁴ and pinions d⁵ d³, said pinions being mounted on a sliding shaft d², to which is keyed a handle

or crank D². \bar{d}^r \bar{d}^r are pawls engaging the spur-gears \bar{d}^6 \bar{d}^4 to prevent their rotating in the wrong direction.

Depending from the wires E E are short cables $e e g g$, having secured to their ends respectively blocks $e' e' g' g'$. Passing through the blocks are endless ropes or cables F F G G, each having an oil-bag G', of canvas or other material which will allow the oil to ooze through its meshes.

In Fig. 5 is shown an oil-bag G' covered with a rope netting G² and having at each end an eye g^2 , with which a swiveled hook g^3 on the rope G engages. A modified form of oil-bag will be seen in Figs. 6 and 7. Instead of using a rope net to cover the bag, I merely employ ropes secured longitudinally to the body of the bag, which serve as strengthening-ropes and also to protect the canvas from contact with the beach. The longitudinal strain on these ropes when the bag is being drawn out toward the post A will force the oil out through the meshes of the canvas or other material forming the bag.

At points between the cables or wire ropes E E, I anchor floating oil-tanks H H with spring-valves, which are operated by ropes or wires H' H' extending to the shore.

It will be understood that when my apparatus is not in use the cables E E are always kept tightly stretched between the post A and the upper drums of the windlasses D D, thereby acting as forward stays to keep the post A upright. The ropes F F and G G are kept in coils in the life-guard station, and the oil-bags are kept ready for service, being removed from the ropes; but when a gale is approaching and it is necessary to use the apparatus I pass one end of rope G through the block g' on the end of rope g and an end of rope F through block e' on rope e , and, holding the said ends on shore, run the cables E E out by means of the windlasses D. Then after passing the rope G several times around the lower drum of windlass D, I secure to its ends by means of the hooks and eyes the oil-bag G', thus making the rope practically endless. The ropes F F are treated in a like manner, one being passed around the upper drum and the other around the lower drum of the windlass D². Then by means of the windlass (for I have found it very difficult to do it by hand) I run the oil-bags out toward the open sea. The oil trickles through the meshes of the bags and spreads over the waves. At the same time the valve in the tank B is opened by means of rope C' and those in the floating tanks H H by means of the ropes H' H'.

The oil from the various tanks and bags will be sufficient to render the breakers comparatively safe for the launching or landing of a life-boat, and a clear track toward the open sea beyond the point of danger is provided.

When necessary, I provide the life-boats with a small tank in their sterns, so arranged

that the oil will trickle out, but generally this is unnecessary.

What I claim is—

1. In an oil-distributor, the combination with the supporting-post, and the oil-receptacle, comprising an outer shell and an inner shell, and a non-heat-conducting packing between them, of a valve in said receptacle and means for operating said valve, substantially as set forth.

2. In an oil-distributor, the combination with the stationary post at a distance from the shore, of one or more cables or ropes extending from the shore to said post and back to the shore, and oil-bags secured to said cables and adapted to be drawn from the shore toward said post, substantially as set forth.

3. In an oil-distributor, the combination with the stationary post at a distance from the shore, of endless cables E E extending from the post to points on the shore on either side of said post, and oil-bags secured to said cables, whereby they may be drawn from the shore-line to points near the post, substantially as set forth.

4. In an oil-distributor, the combination of the post A, at a distance from the shore, the windlasses D, D, located on the shore at points on either side of said post A, endless cables extending from windlasses D, D, to post A, and oil-bags secured to said endless cables, and adapted to be drawn toward said post A, substantially as set forth.

5. In an oil-distributor, the combination with the oil tank or receptacle anchored at a distance from the shore, and means operated from the shore for permitting the escape of the oil, of one or more cables extending from the shore to the post, and having secured thereto supplemental oil bags or receptacles, adapted to be drawn toward the first aforesaid receptacle by operators on shore, substantially as set forth.

6. In an oil-distributor, the combination with the stationary post, erected in the water at a distance from the shore, of an endless rope or cable E extending therefrom to a point on the shore, and having attached thereto, one or more blocks, endless cables passing through said blocks and extending to the shore, and oil-bags, attached to the last said cables, and adapted to be drawn out toward the said stationary post, substantially as set forth.

7. In an oil-distributor, the combination with the oil-receptacle having escape-valves, a post or support therefor, stays extending from the post to the shore, stays extending in an opposite direction to those aforesaid, and means for operating said valves from the shore, for permitting the oil to escape from said receptacle, substantially as set forth.

8. In an oil-distributor, the combination with a post A erected at some distance from the shore, a cable or rope extending therefrom to the shore, an oil bag or receptacle secured to said cable, and means for moving said cable by power, for drawing the oil bag

or receptacle toward the post A, substantially as set forth.

9. In an oil-distributor, the combination with the post erected at some distance from the shore, a cable extending from said post to the shore, a supplemental endless cable passing through a block attached to the first said cable, an oil bag or receptacle attached to the said endless cable, and means for shift-

ing said endless cable, substantially as set forth.

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

DANIEL KNOWLES.

Witnesses:

W. W. WEBSTER,
W. M. HANNAH.