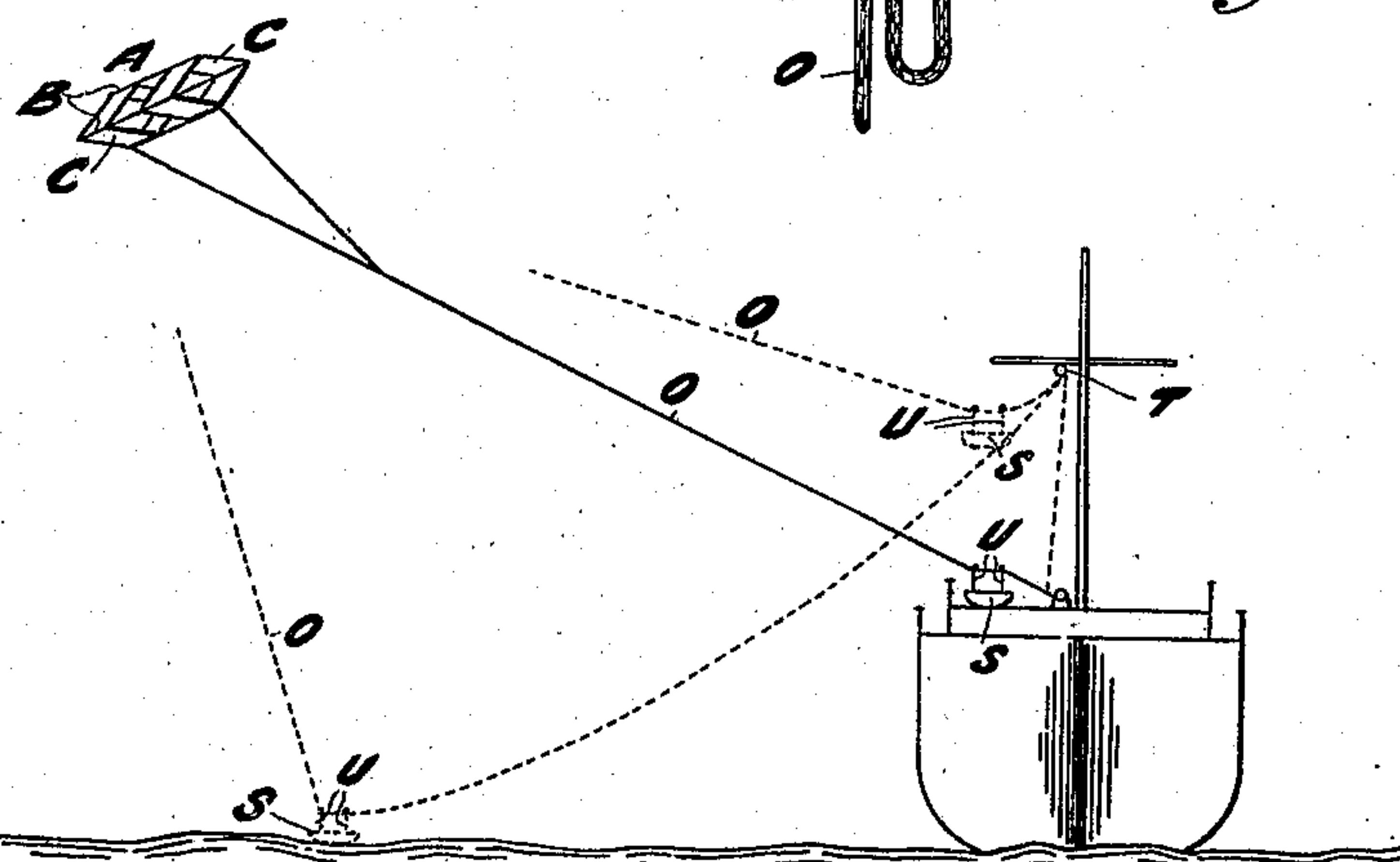
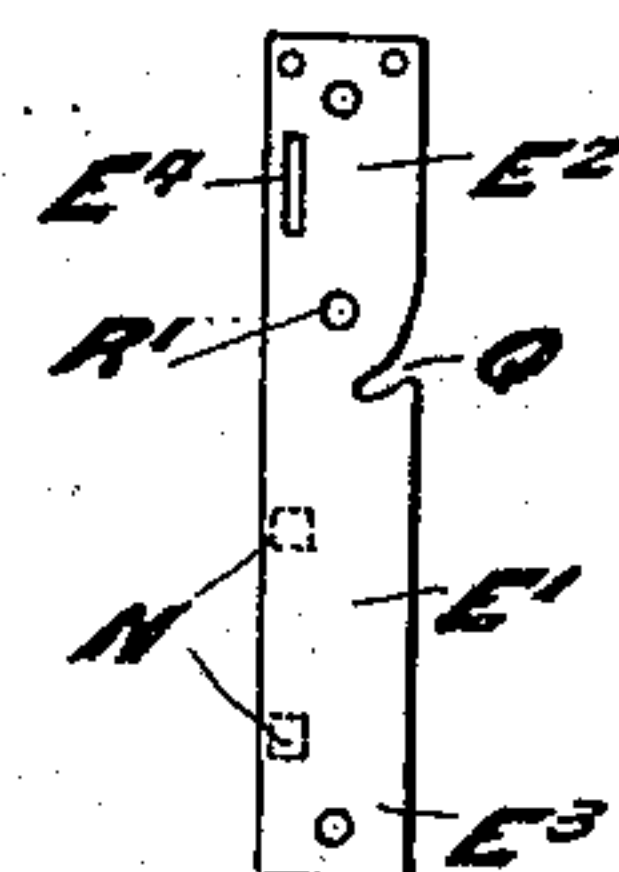
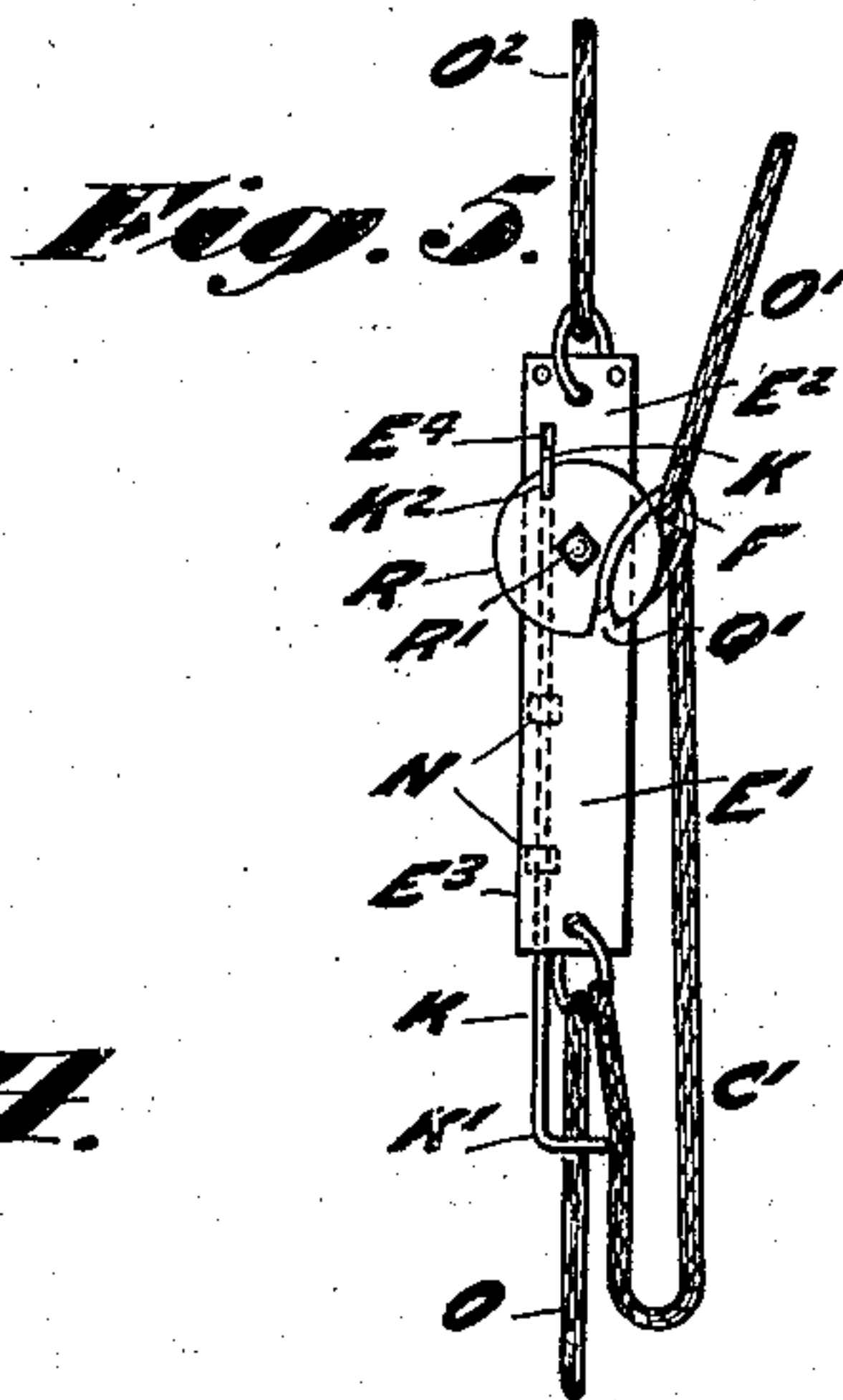
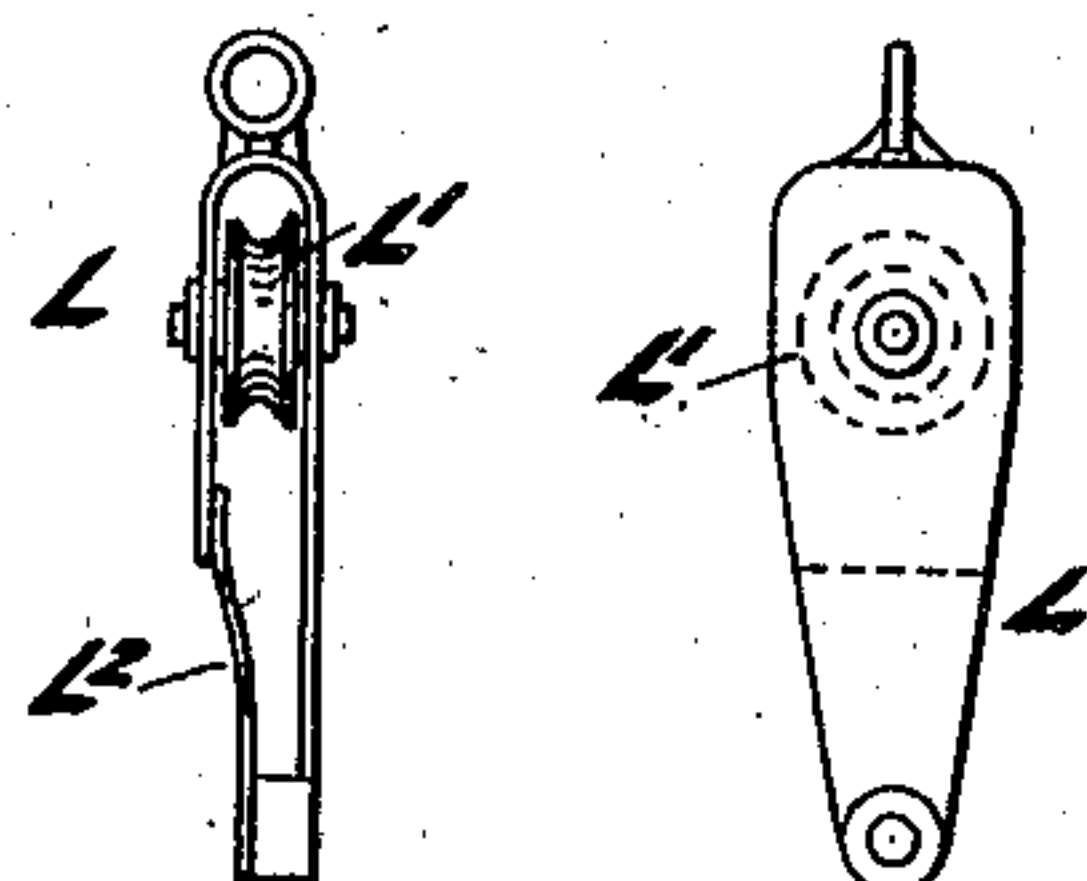
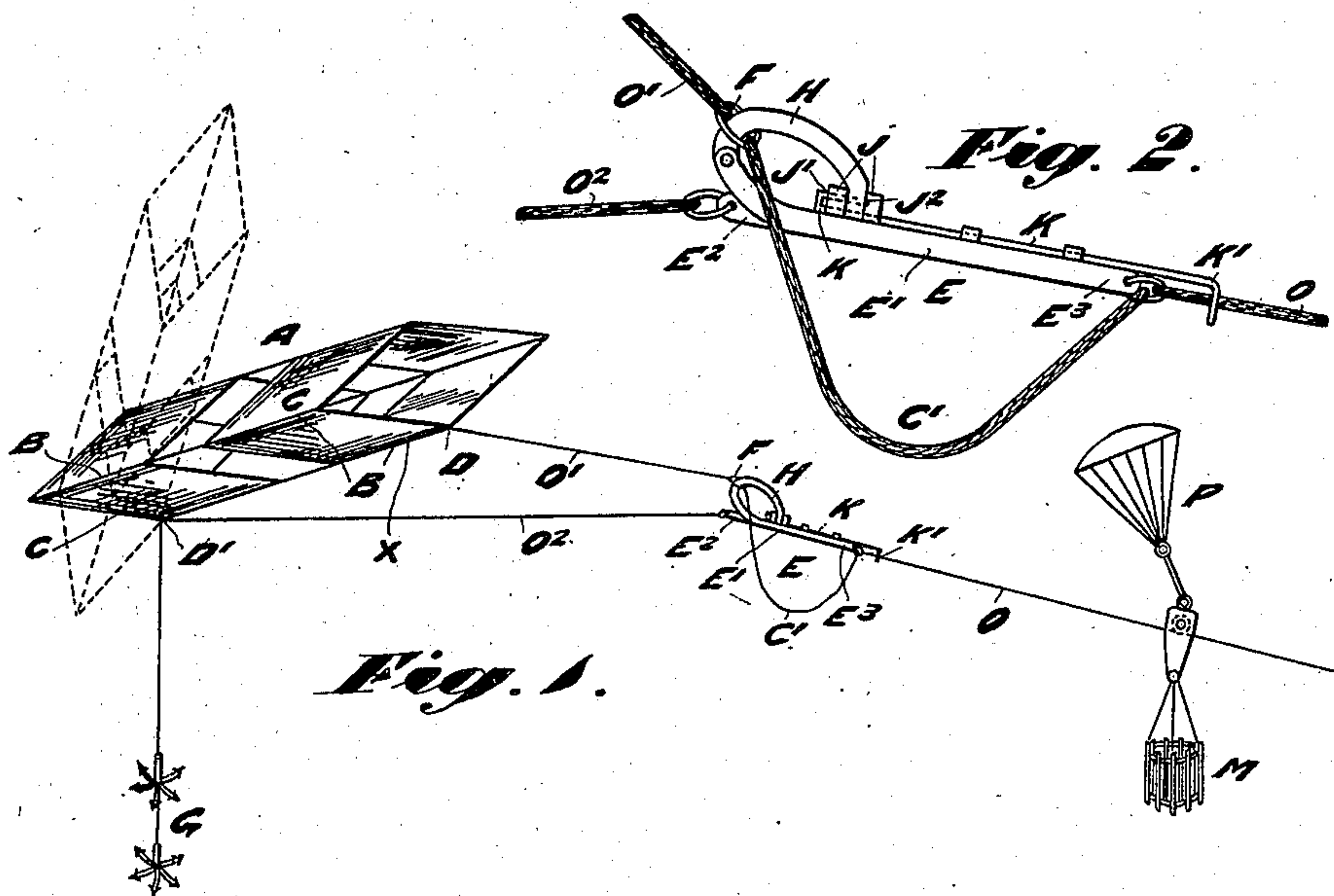


No. 881,417.

PATENTED MAR. 10, 1908.

C. H. KRÜGER.
LIFE SAVING APPLIANCE.
APPLICATION FILED JUNE 15, 1907.



WITNESSES
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Fig. 7. INVENTOR Charles Henry Krüger
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UNITED STATES PATENT OFFICE.

CHARLES HENRY KRÜGER, OF BRADFORD, ENGLAND.

LIFE-SAVING APPLIANCE.

No. 881,417.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed June 15, 1907. Serial No. 379,234.

To all whom it may concern:

Be it known that I, CHARLES HENRY KRÜGER, a subject of the King of Great Britain and Ireland, whose postal address is 7 Manor Row, Bradford, in the county of York, England, have invented certain new and useful Improvements in and Relating to Life-Saving Appliances, of which the following is a specification.

This invention relates to appliances for life saving to be used more particularly on steamers, ships, or the like, and has for its object the use of aeroplanes, kites, or the like, to be used for carrying life lines or cables to the shore, the appliance being provided with a device for destroying the equilibrium of the aeroplane or the like, when desired to drop the cable on the land, the passengers and crew reaching the shore as hereinafter described. Further, should a vessel be stranded or in difficulties where there is no land within reasonable distance, the aeroplane or the like may be used as a means of launching the boats in such a manner that the boats may be kept clear of the vessel, and thereby be prevented from being broken or damaged by sudden contact with the vessel as is often now the case when boats are launched from vessels in a gale or heavy sea.

It will be hereinafter described and shown that when a cable is sent ashore by the aeroplane or the like, shore assistance is not essential to the working of the appliance.

In describing my invention in detail, reference is made to the accompanying sheet of drawings, similar letters indicating similar parts, in which,

Figure 1 represents a view of an aeroplane carrying a cable and life saving devices. Fig. 2 represents a form of device whereby the equilibrium of the aeroplane is destroyed. Figs. 3 and 4 represent details of a form of pulley block, whereby the life belts or the like are attached to the cable as hereinafter described. Figs. 5 and 6 represent views of another form of equilibrium disturbing device, and, Fig. 7 represents a diagrammatic view, showing the device as applied to boat launching.

In carrying out my invention, I may employ any successful form of box kite, aeroplane, or the like, but for the purpose of illustrating my appliance, I have shown a box kite A, made preferably from bamboo rods B, and sail cloth C. End stays may be

provided, and the whole arranged so as to be collapsible for storage on the vessel's deck in any convenient position. To the kite or the like are fastened, substantially at the points D and D¹, portions or lengths of cable O¹ and O², the two points being brought together at the equilibrium disturbing device E, hereinafter more particularly described. The upper portion of cable O¹ being shorter than the lower, the kite will fly somewhat in the position shown in Fig. 1, the point or center of equilibrium being at or about the point X. A grapnel G of any suitable shape is allowed to depend from the kite as shown.

From the device E, the cable O continues to the vessel, the cable being, when out of use, wrapped round a drum, winch, or the like on the vessel's deck. When in use the cable is payed out as required. I have found by experiment that a kite of the type shown will easily carry a half inch cable any distance according to the length of cable at disposal.

One form of device for disturbing the equilibrium of the kite, and thereby allowing the same to fall is shown in Fig. 2, but it must be understood I do not confine myself to this device alone, the same being shown for the purpose of illustrating the principle of my invention. This device E consists of a bar E¹, to one end E² of which is attached a length of cable O² leading to the point D¹ of the kite. Attached to the other end E³ is the cable O itself, a length C¹ of such cable being allowed to hang down, or be slack, from this point to a ring F, attached further along the cable, such ring being passed round the hinged hook or the like H. From the ring F the cable O¹ passes to the point D on the kite.

The hook H is secured between bosses J formed on the bar E¹, and apertures J¹ and J² are formed in the bosses for the reception of a bolt such as K, the end K¹ of which projects towards the end E³ of the bar E¹. Thus, when the bolt K is pushed towards the kite by means hereinafter described, the hook H will be freed and the pull of the cable O¹ from the point D will cause the ring F to come off the hook, the before mentioned slack will be taken up, and the kite take the position shown by dotted lines in Fig. 1. The kite will then drop.

Should a ship be driving on shore or rocks or reefs adjacent thereto, and the use of life-saving devices become necessary, the kite

would be put together and let go into the wind until sufficient line or cable had been taken out, that is to say, until the kite or the like is well over the land. Next, it is necessary to cause the kite or the like to fall. This is accomplished by placing on the cable a suitable block (that shown in Figs. 3 and 4 will answer the purpose). To the upper portion of this block is attached a parachute or the like. The wind will take the block rapidly up the cable, and the block will come in contact with the end K^1 of the bolt K , and the equilibrium of the kite will, as hereinbefore described, be destroyed, bringing the kite to earth. The cable will then be pulled tight to insure the grapnels gripping the ground. It is now necessary to get the passengers and crew ashore; this is accomplished by the following means, namely, a block L , (Figs. 3 and 4), provided with pulley L^1 and spring catch L^2 to allow of same being placed on the cable. To the lower end of this block is attached the ordinary life belt M by means of cords or the like, as shown in Fig. 1, and to the upper end is attached a parachute or the like P . The passenger or other person is carried ashore by means of the wind. The passenger or members of the crew may always grip the cable, should the wind momentarily fail. In any event, should the cable sag, and the passenger be temporarily submerged, there is always the cable support in addition to the life belt. The first person to make the passage could insure the grapnel holding. Thus it will be seen that shore aid is not essential, as in the case of a rocket apparatus. Each life belt will be fitted with the above described arrangement or its equivalent.

Another form of equilibrium disturbing device operated in a similar manner to that before described, is shown in Figs. 5 and 6, in which the bar E^1 is substantially of the form shown in Fig. 6, that is, provided with rings or the like to which the cables O and O^2 are attached. The bolt K is carried in suitable bearings N on the plate E^1 , and is similar in construction to the bolt shown in Fig. 2. In the plate E^1 is formed a slot E^4 for the bolt to operate in. In the plate is formed a slot such as Q having a slightly curved form, the center being struck from the point or pivot R^1 on which is carried a locking ring R , such ring being provided with slots Q^1 and K^2 . The ring F is placed in the slot Q^1 , and the ring R is turned until the ring F will enter the slot Q . The bolt K may then be drawn into the slot K^2 and the cables and kite or like be

thereby held in the desired position. On the end K^1 of the bolt K being knocked by the block or the like as before described, the ring F will be released, the equilibrium of the kite destroyed, and the kite will then fall. The second portion of my improvement relates to the launching of boats by means of the cable and kite or the like, when the land is far distant. The kite is sent up as before and the cable payed out as required. Each boat S is provided with a suitable number of uprights U , say two, composed of rope or other suitable material, and provided with a spring block of the type above described, the parachute not being required. The blocks are passed on to the cable O and the end of portion of the cable furthest from the kite is raised upwards by means of any well known tackle T attached to the mast or yard, until there is sufficient clearance for the boat to pass the bulwarks. The boat is then shoved off, the cable sags, and the boat gently touches the water endwise as opposed to broadside, as boats are now usually launched from ships' davits. Thus, the danger of the boat being stove in is considerably reduced. Passengers may be in the boat at the time of launching, or may reach the boat by means of the cable, if desired, and the boat may readily be cast loose and another boat launched, or one or more boats may be allowed to hang on to the same cable until all are launched, but preferably having separate kites for each boat. When on the cable, the upward pull of the kite or the like assists, as will be understood, the boat's buoyancy. The above arrangement is shown diagrammatically in Fig. 7.

What I claim as my invention is:—

A life saving apparatus comprising a kite, an equilibrium distributing device comprising a cable holding means and a trigger for releasing said means, a cable secured to one end of the device and to one end of the kite a main cable secured to the other end of the kite and to the cable holding means, to the other end of the device and to the ship, a block and means operated by the wind for causing the block to travel up the main cable to contact with the trigger and release the same.

In witness whereof, I have hereunto set my hand, in the presence of two witnesses.

CHARLES HENRY KRÜGER.

Witnesses:

CLIVE WAUGH,
JOSEPH P. KIRTY.