

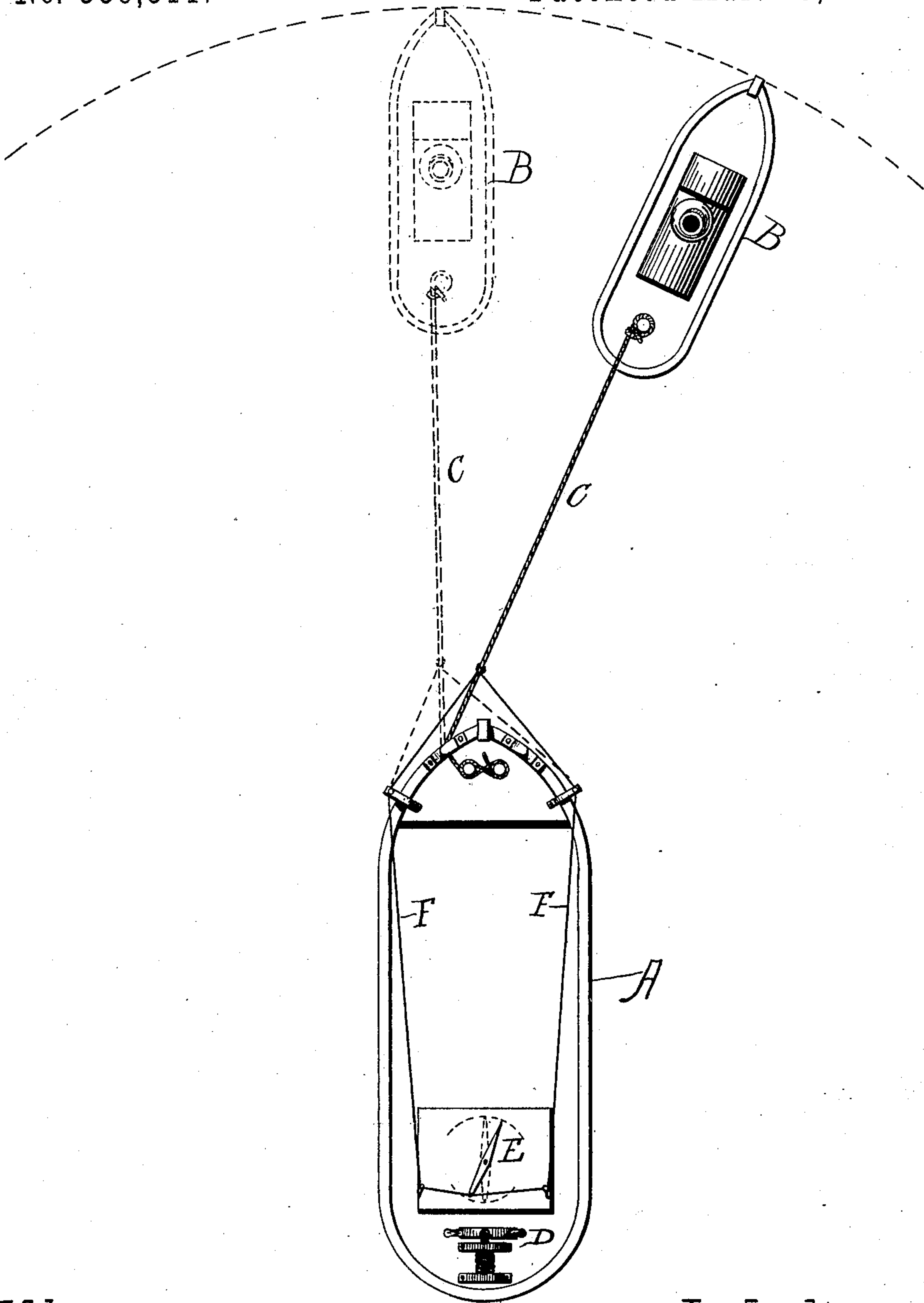
(No Model.)

A. LEITH.

INDICATOR FOR BOATS.

No. 359,511.

Patented Mar. 15, 1887.



WITNESSES

*As. Pare*  
*George C. Cook.*

INVENTOR  
*Alexander Leith.*  
By *Banning & Banning* -  
ATTORNEYS

# UNITED STATES PATENT OFFICE.

ALEXANDER LEITH, OF HUMBOLDT PARK, NEAR CHICAGO, ILLINOIS.

## INDICATOR FOR BOATS.

SPECIFICATION forming part of Letters Patent No. 359,511, dated March 15, 1887.

Application filed December 31, 1886. Serial No. 223,137. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER LEITH, a citizen of the United States, residing at Humboldt Park, near Chicago, Illinois, have invented certain new and useful Improvements in Indicators for Boats, of which the following is a specification.

The figure of the drawing represents a plan view of a vessel and a tug towing the same.

10 A represents the boat in tow; B, the tug; C, the tow-line; D, the pilot-wheel; E, a needle or indicator, and F cords leading from the needle or indicator to the tow-line.

Heretofore in navigation where boats are 15 towed by a tug or barge there has been difficulty on dark nights or in dense fogs for the pilot or other person steering the boat properly to follow the tug, owing to the impossibility of seeing it and observing its variations in course of direction. The object of my invention is to obviate this difficulty and to enable the person steering the boat to constantly know or see the various changes of direction which the tug may take, and be enabled to 25 change the course of the towed boat accordingly.

In applying my improvement I employ a needle or indicator, which I preferably pivot in front of the place where the pilot stands, 30 and in a position where he can observe it while manipulating the wheel. The manner in which this indicator may be pivoted is clearly shown in the drawing, and need not be minutely described. I attach to one end of this indicator, preferably the rear end, one or more cords 35 or wires, F, which lead out from the end of the needle, preferably at right angles to it, when pointing straight toward the prow of the boat. I pass these cords preferably around 40 rollers or pulleys, so that they will move back and forth with ease. I then carry the cords forward and pass them around another pulley, near the front end of the towed boat, and attach them to the tow-line. I have said that 45 either one or two cords could be employed.

Where one cord only is used passing toward one side of the boat and forward to the tow-line, a balance-weight or spring should be employed on the other side to bring the end of 50 the needle or indicator, to which the line is

attached, in the other direction when the cord is slack. An ordinary weight attached to a cord and hanging down over a pulley or an ordinary spring to bring the end of the needle back and toward the other side will be 55 sufficient. In operation, as the tug moves straight ahead the needle or indicator will point toward the prow of the boat, while, when the tug moves off in one direction, as shown in the drawing, the cord on the side of the 60 towed boat from which the tug is moving will be drawn tight and the end of the needle move in that direction, while the point of the needle will assume the position corresponding to that taken by the tug or barge. As the tug 65 changes its course and draws straight ahead of the boat in tow, the needle will assume its normal position, as above described. As the tug moves over toward the other side, the other cord (where two are used) will be drawn tight 70 and the end of the indicator move toward it, so as to correctly indicate the position of the tug. In this way the steersman can always tell the position and direction of the tug, although, owing to the night or the thickness of 75 the fog, he may not be able to see it.

I do not here claim specifically an indicator connected to the tow-line from one side alone, this construction being covered by my generic claim herein, and it being also my in- 80 tention to make it the subject of another or divisional application.

What I claim as new, and desire to secure by Letters Patent, is—

1. In combination with a towed boat, an in- 85 dicator adapted to vary with the movements of the tug to show the direction thereof, and means for attaching the same to the tow-line, substantially as described.

2. In combination with a towed boat, a piv- 90 oted indicator, and cords or wires connecting one end of the same to the tow-line from opposite sides, whereby the indicator is made to change its position with the variations in position of the tug, substantially as described.

ALEXANDER LEITH.

Witnesses:

FRANK L. DOUGLAS,  
THOMAS A. BANNING.