

(No Model.)

W. B. BARKER.
MARINE SIGNALING CODE.

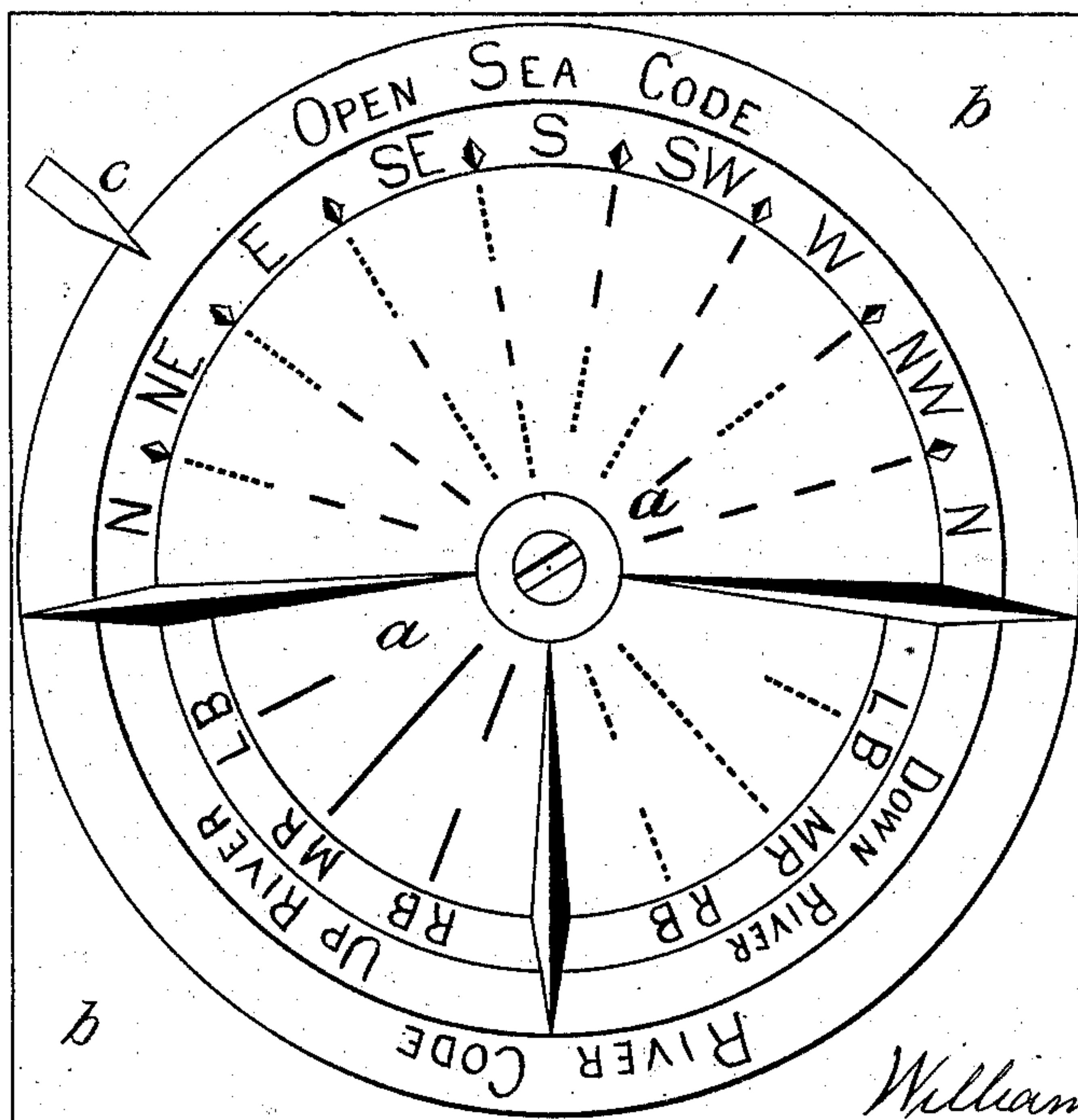
No. 257,913.

Patented May 16, 1882.

Fig. 1

OPEN SEA CODE			
WEST		EAST	
North. North.	— — — — —	North West to North	North to North East
	— — — — —	West to North West	North East to East
	— — — — —	South West to West	East to South East
	— — — — —	South to South West	South East to South
RIVER CODE			
DOWN RIVER		UP RIVER.	
— — — — —		Left Bank.	— — — — —
— — — — —		Mid River.	— — — — —
— — — — —		Right Bank.	— — — — —

Fig. 2.



Witnesses.

J. D. Williams
Hugh A. McManis

William B. Barker

Inventor.

per. Alfred Thedlock
Atty.

UNITED STATES PATENT OFFICE.

WILLIAM B. BARKER, OF HOBOKEN, NEW JERSEY.

MARINE SIGNALING CODE.

SPECIFICATION forming part of Letters Patent No. 257,913, dated May 16, 1882.

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To all whom it may concern:

Be it known that I, WILLIAM B. BARKER, of Hoboken, county of Hudson, State of New Jersey, have invented a certain new and useful Improved Marine Signaling Code, of which the following is a specification.

This invention relates to marine signaling codes consisting of combinations of sounds adapted to be produced by steam-whistles or other sound-producing instruments. In Letters Patent of the United States No 216,820, granted to me June 24, 1879, is described and shown a code of signals to be used in open-sea sailing, consisting of eight signals, composed of combinations of long and short plain sounds, systematically arranged so as to clearly indicate the direction the vessel from which the signal emanates is steering. Each signal embraces four points of the compass. In other proposed codes the compass has been divided into more than eight parts; but such extended division is likely to be ineffective on account of the liability of mistaking one signal for another and the difficulty of committing the signals to memory. It has been fully demonstrated that, if the course of vessels which are out of sight is known to within four points of the compass to the masters of other vessels, collisions may be avoided as well as when they are plainly seen.

This present invention has for its object to make the long and short sounds so distinctive in their nature or character that it will be impossible to mistake one for the other, and to combine with a code of signals adapted to be used for open-sea sailing a simple code of signals for river navigation, as no code of signals can be considered perfect unless adapted to be used in all locations in which a vessel may be placed.

The open-sea code of this present application consists of eight signals, composed of long and short sounds, systematically arranged, as set forth and shown in my before-mentioned patent, but with a most important change in the character of the long sound. All signal-sounds heretofore used have been of a plain character—that is, short steady blasts for the short sounds and prolonged steady blasts for the long sounds; and I have found in practice that for

long distance and under certain peculiar conditions of the atmosphere a long blast is sometimes taken for a short blast or blasts on account of the first or last part of the sound being inaudible or a break occurring in the middle, and that a short blast or consecutive short blasts may, unless great care is exercised, be taken for a long blast. Now, I entirely obviate any such mistake occurring by giving to the long sounds an intermittent character, or making them undulatory, and retaining for the short sounds short steady blasts, so that if any part of or as soon as a vibratory blast is heard it becomes instantly known as a long sound, and the position it occupies in relation to the short plain blasts with which it is combined in the signal being given enables the signal to be fully understood wherever heard. The combinations of long vibratory or undulatory sounds and short plain sounds constituting the eight signals of the open-sea code, or part of the code, are as follows, the long vibratory or undulatory sound being indicated by a long dotted line, thus, and the short plain sound by a short plain line, thus ———:

North to north-east,	— — —
North-east to east,	— — —
East to south-east,	—
South-east to south,	— — —
South to south-west, — — —
South-west to west, — — —
West to north-west, — — —
North-west to north, — — —	— — —

The accompanying drawings represent two ways in which the signals may be arranged for ready reference. In Figure 1 they are represented as arranged on a rectangular card, the open-sea code in the upper part and the river code below it, and in line with the different courses are the corresponding signals, represented by dotted long and plain short lines. "West" and "East" on the second line indicate that the four signals beneath each are respectively westward and eastward signals, and the brackets marked "North" and "South" on the left-hand side embrace horizontally across the card, respectively, all the northward and southward signals. The river code will be understood by reference had thereto hereinafter. Fig. 2 rep-

resents the various signals of the two codes arranged in a circle, the initials of the signals being substituted for the full names of the different courses. In this form the circular piece
 5 of card, &c., may be pivoted at its center *a* to a base-board, *b*, so as to enable it to be rotated to bring the desired signal opposite a lubber-point, as shown at *c*, and it also represents the dial-plate of the machine, hereinafter referred
 10 to. If, for instance, in a fog the master of a vessel which is steering between north-east and east hears a signal of three short plain sounds and one long vibratory sound (— — — — —
 15 — — — — —) from a vessel in front of him, he would immediately change the course of his vessel either northward and respond by giving the signal one vibratory long sound and two plain short sounds (.....
 20 — — — — —) or change the course of his vessel eastward and give the signal one long vibratory sound, one short plain, and one long vibratory sound, (.....
 25 of the direction he is going. This as an illustration will be ample to show the advantages to be derived by the use of this code.

It will be observed that in the above code no two long vibratory or undulatory sounds
 30 are together; but where they occur in a signal they are separated by one or two short plain blasts, so that it is impossible to mistake the signal given by imagining that a vibratory blast is a part of a preceding vibratory blast;
 35 nor can two short blasts be confused as belonging to one blast, as the interval of time between blasts will be about two seconds, and the short blasts themselves will only occupy
 40 of at least six or eight seconds duration; and it will also be observed that the approximate course a vessel is steering may be learned the instant the first part of a signal is heard, as all signals for eastward courses commence with
 45 long vibratory sounds and all signals for westward courses commence with short plain sounds; and, again, supposing the first part of a signal is not heard, or a doubt exists as to its nature, then the approximate course of a
 50 vessel signaling may be learned by the finishing sound of the signal, as all signals for northward courses end with a short plain blast and all signals for southward courses end with a long vibratory blast.

55 It is evident from the foregoing that by the use of this code of signals vessels on the darkest nights or in the heaviest fogs may be perfectly advised of not only the positions of other vessels in their neighborhood, but may indicate to each other the direction in which they
 60 are steering, so that collisions may be entirely avoided.

The river code, which I will now describe, which, though under some circumstances may
 65 be considered an independent code from the

open-sea code just described, yet must necessarily be used in conjunction with it, or, rather, in sequence with it, by almost all vessels, and must be understood and employed by masters
 70 of sea-going vessels. The signals as at present required by law to be used by vessels in river navigation are: a long steady blast when under way, both going up and down stream, the vessel going down stream to have the right of
 75 way; two short blasts when steering or about to change the course to the left, and one short blast when steering or about to change the course to the right. Now, it will be seen by a little consideration that there is considerable
 80 chance of accidents occurring in dark or foggy weather, as the master of a vessel, for instance, going up stream may hear a signal from another vessel ahead of him indicating that she is moving to the right, and, not knowing whether
 85 the vessel from which the signal emanates is going up or down stream, he would, as required by law, slacken his speed or go to the right, and would in all probability, if going
 90 faster than the signaling vessel, collide with her should she happen to be going up stream. Such chances of accidents would be avoided
 95 by the use of my improved river code, as I provide signals for down-river movements of an entirely distinctive character from those to be used when going up river—that is to say,
 100 all down-river signals are sounds of a vibratory or undulatory character and all up-river signals plain sounds, the signals in both cases being alike as to the duration of the sounds, and also similar in this respect to the signals
 used at present.

The principle on which this code depends is a division of the river into three parts—viz., mid-river, right bank, and left bank, the right bank
 105 being the right-hand bank going down river, and the left bank being the left-hand bank going down river. For mid-river the signal will be a prolonged blast of a vibratory character when going down river and a prolonged plain
 110 blast when going up river; two short vibratory blasts when moving along the right bank down river or when changing the course toward this bank, and two plain blasts moving
 115 along the right bank up river or when changing course toward this bank; one short vibratory blast when moving along the left bank down river or when changing the course toward this bank, and one plain blast when
 120 moving along the left bank up river or when changing the course toward this bank. And when two vessels are approaching one another in mid-river or at either bank, then the vessel
 125 going up stream will change her course to give the right of way to the downstream vessel, because vessels moving against the stream answer the helm more quickly than vessels moving with the stream, as is well understood by mariners.

The following, as well as the drawings, graphically illustrates the river code by the same 130

class of symbols as used in the preceding illustration of the open-sea code.

Down river.

Up river.

Left bank,

5 Mid-river,

Right bank,

It will be observed that as soon as a signal is sounded it becomes evident to the masters of other vessels in what part of the river the signaling vessel is, and whether she is moving up or down river, for it is impossible, as in the other part of the code, to mistake the short plain for the long vibratory or undulatory sounds, or vice versa; and it is also obvious that if the masters of vessels exercise any care in managing their vessels and give the proper signals and pay attention to signals from other vessels rivers may be navigated with equal safety when the vessels cannot be seen from one another, even when in close proximity, as in broad daylight, and that this, as well as the open-sea part of the code, is so simple in the arrangement of the sounds in the different signals as to be readily committed to memory by the most illiterate, and when once known not easily forgotten.

These signals are adapted to be given on any sound-producing instrument or apparatus, and may be automatically produced by machines such as described in the before-mentioned Letters Patent, granted to me June 24, 1879, No. 216,820, and in the application for Letters Patent, No. 12,110, filed by me June 21, 1880, Fig. 2 of the accompanying drawings representing the dial-plate of said machine, in either of which machines the vibratory or undulatory sounds may be produced by serrating the edges of the parts of the cams for giving the long sounds, which act on the lever to open the valve or operate the steam-whistle; or a ball-valve may be placed under or above the cut-off valve, to be freed by suitable means actuated by the cams to allow the compressed air to pass to the fog-horn in intermittent puffs when a vibratory sound is to be given. The valve and whistle operating cams of such machines may be formed to produce all of the signals above specified; but I wish it understood that the mechanism for producing the signals forms no part of this invention, attention being called to the same merely to show that the signals may be given by automatic machines.

The mechanism for giving the vibratory or undulatory sound will form the subject of another application.

Although I have described the improvements in sound-signals as applied to a river-signal code, I do not here claim the same, as said improvements will form the subject of another application.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The improved method of indicating the course of vessels at sea by eight predetermined sound-signals, each composed of systematically-arranged long notes of a vibratory or undulatory character and short notes of uniformly plain character, the four eastward signals commencing with a long vibratory or undulatory sound, the four westward signals commencing with a short plain sound, the four northward signals ending with a short plain sound, and the four southward signals ending with a long vibratory or undulatory sound, as described, and adapted to be produced by means substantially as and for the purpose set forth.

2. The improved method of signaling by sound to indicate the courses of vessels, adapted to be produced by means substantially as described, the north to north-east signal being composed of one long note of a vibratory or undulatory character and two short notes of a uniformly plain character; the north-east to the east signal one long vibratory or undulatory note and three short plain notes; the east to south-east signal one long vibratory or undulatory note, one short plain note, and one long vibratory or undulatory note; the south-east to south signal one long vibratory or undulatory note, two short plain notes, and one long vibratory or undulatory note; the south to south-west signal two short plain notes and one long vibratory or undulatory note; the south-west to west signal three short plain notes and one long vibratory or undulatory note; the west to north-west signal one short plain note, one long vibratory or undulatory note, and one short plain note; and the north-west to north signal four short plain notes, all produced with proper intervals of rest between each two distinct sounds or notes, as hereinbefore set forth.

In testimony whereof I have hereunto set my hand this 25th day of May, A. D. 1881.

WM. B. BARKER.

Witnesses:

ALFRED SHEDLOCK,
H. D. WILLIAMS.