

No. 651,163.

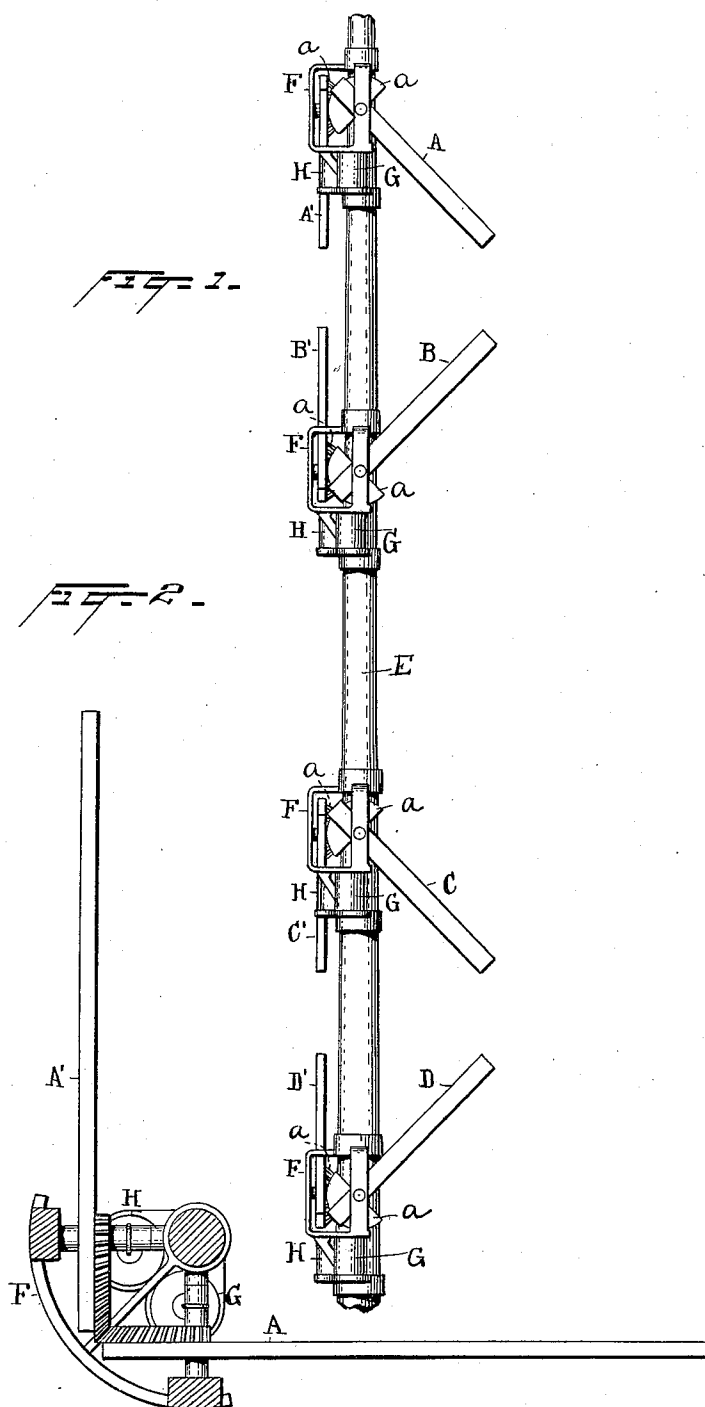
Patented June 5, 1900.

B. A. FISKE.
SYSTEM OF DAY SIGNALING.

(Application filed Aug. 21, 1896.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses
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Geo. R. Taylor.

Inventor
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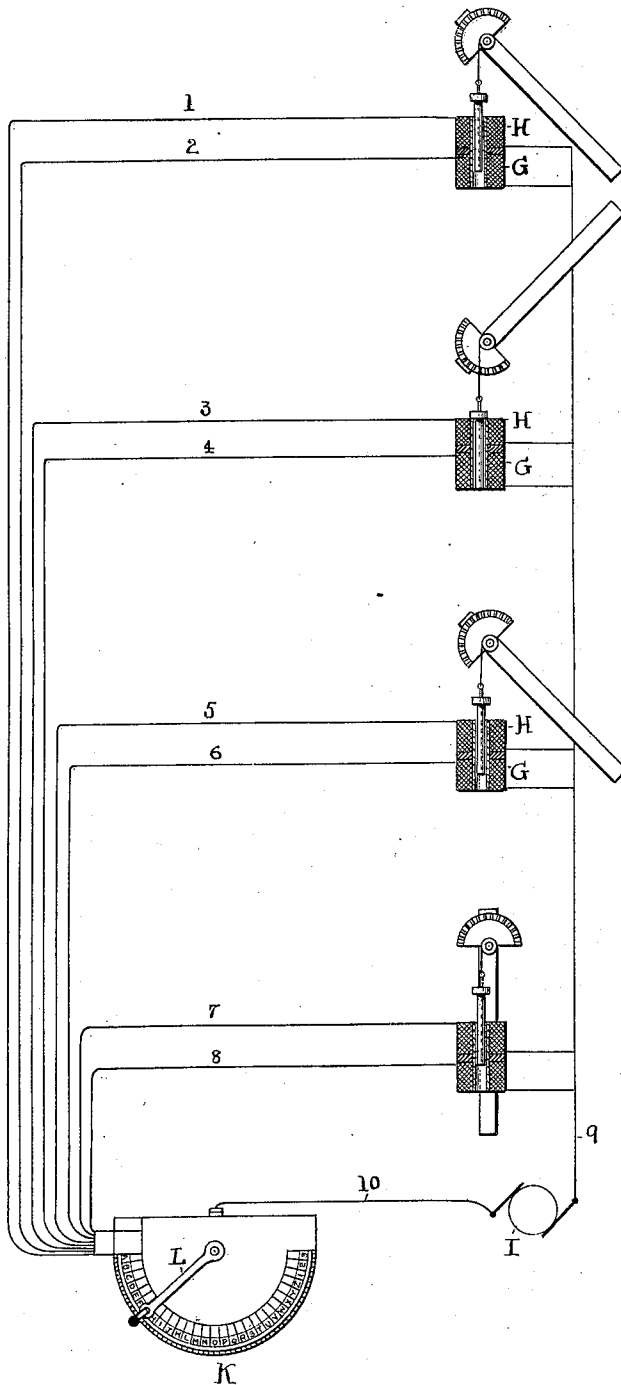


FIG. 3.

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UNITED STATES PATENT OFFICE.

BRADLEY A. FISKE, OF THE UNITED STATES NAVY, ASSIGNOR TO THE
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SYSTEM OF DAY SIGNALING.

SPECIFICATION forming part of Letters Patent No. 651,163, dated June 5, 1900.

Application filed August 21, 1896. Serial No. 603,545. (No model.)

To all whom it may concern:

Be it known that I, BRADLEY A. FISKE, of the United States Navy, have invented a certain new and useful Improvement in Systems of Day Signaling, of which the following is a specification.

The object I have in view is to produce a system and apparatus for complete signaling by daylight in accordance with a preconcerted code especially adapted for ships' use, which system and apparatus will be simple and effective in construction and operation and will meet all the conditions of practical use. A system is already in practical use for night signaling, consisting of four pairs of red and white electric lamps operated by a key-board and forming by the numerous permutations made possible by the arrangement the various signals of a preconcerted code.

It is my object to produce a daylight signaling system which will be equally effective and certain, a thing which has not heretofore been accomplished. To this end I employ one or more pairs of semaphore-arms pivoted substantially at right angles and adapted to be moved simultaneously from a normal position to one or more exposed positions, whereby at least one of said semaphore-arms will be observable from all points of the horizon, and I employ means, preferably electric in character, for operating the said arms in accordance with a preconcerted code.

In the accompanying drawings, forming part hereof, Figure 1 is an elevation showing four sets of semaphore-arms mounted in position on a mast. Fig. 2 is a top view showing one set of semaphore-arms and their actuating-solenoids. Fig. 3 is a view, largely in diagram, illustrating the method of operating the semaphores from a keyboard.

Referring to the drawings, A B C D are four semaphore-arms mounted upon the mast E, and A' B' C' D' are four similar semaphore-arms mounted upon the mast and operating in a plane perpendicular to that in which the semaphores A B C D operate. Each pair of semaphore-arms is pivoted in a suitable frame F, secured to the mast, and the arms of each pair are geared together by two segments *a*, so that they are moved simultaneously to the same position.

G H are two solenoids whose cores are connected by cords or otherwise with the shafts of a pair of semaphore-arms, so as to operate such shafts when energized. The core of the solenoid G has a movement three times as great as the core of the solenoid H, so that when the solenoid H is energized the semaphores will be raised from a vertical position to a position of forty-five degrees, and when the solenoid G is energized the semaphores will be raised to an angle of one hundred and thirty-five degrees. The semaphore-arms will be properly balanced, so as to be operated with the minimum power, but still over-weighted, so that when released by the solenoids they will resume a vertical position close to or against the mast.

In Fig. 3 for simplicity of illustration the solenoids G H are shown as arranged together as a double solenoid and acting upon the same core. This construction may be employed in practice; but I prefer to use the two separate solenoids.

In Fig. 3, I is the dynamo or other source of electrical energy, and K is the keyboard. Though not shown, a relay may be introduced into the circuit should a device be necessary to operate the signals with the available electrical power. Separate wires 1 2 3 4 5 6 7 8 lead from the keyboard to the eight solenoids, from which a return-wire 9 extends to one pole of the dynamo I, from the other pole of which the wire 10 extends to the keyboard. The keyboard illustrated is that employed in the present system of night signaling in the United States Navy, the circuiting being the same as that employed with the electric lights of that system. As will be understood, the movement of the lever L of the switch to any letter of the keyboard and the movement of the key on the end of that lever will close such a combination of circuits as will move the semaphore-arms to the proper positions to indicate that letter.

The keyboard of the present night signaling system may be employed for my day signaling system, since the individual wires running to the lamps are at the present time connected with a plug adapted to contact with coacting parts on the keyboard-base. The individual wires of my system may terminate

in a similar plug, so that the same keyboard may be used either for night signaling or day signaling by the use of the proper plug.

It will be understood that in the ordinary 5 naval code the letters are made by permutations of digits—for instance, the digits “2, 1, 1, 2” may be the letter “A,” &c.

In all forms of my system, as illustrated, the movements or positions of the different 10 shapes will form the necessary combinations of digits.

In Fig. 1 the positions of the different arms indicate (counting from the top) “1, 2, 1, 2,” which may be the letter “B,” for instance.

15 In Fig. 3 the arms indicate “1, 2, 1,” which may be, for instance, the letter “S.”

I claim—

1. A system of day signaling for ships, wherein each signal made is distinguishable 20 and readable irrespective of the ship's position from all points of the horizon, having in combination two or more pairs of semaphore-arms supported in an elevated position, the arms of each pair being operated simulta- 25 neously and working in planes which are angular to each other, and means for operating said arms in accordance with a preconcerted code, substantially as set forth.

2. A system of day signaling for ships 30 wherein each signal made is distinguishable and readable irrespective of the ship's posi-

tion from all points of the horizon, having in combination two or more pairs of semaphore-arms supported in an elevated position, the arms of each pair being operated simulta- 35 neously and working in planes which are angular to each other, electromotive devices capable of moving the pairs of semaphore-arms to two or more different angular positions with reference to their support, a source 40 of electrical energy for actuating said electromotive devices, and a keyboard or transmitter for controlling such electromotive devices in accordance with a preconcerted code, substantially as set forth. 45

3. In a system of day signaling, the combination with two or more pairs of semaphore-arms, the arms of each pair being coupled together and working in planes perpendicular 50 to each other, two electromotive devices for each pair of arms, capable of moving such arms to two different angular positions, a source of electrical energy and a keyboard or transmitter for controlling such electromotive devices in accordance with a preconcerted 55 code, substantially as set forth.

This specification signed and witnessed this 27th day of July, 1896.

BRADLEY A. FISKE.

Witnesses:

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EUGENE CONRAN.