

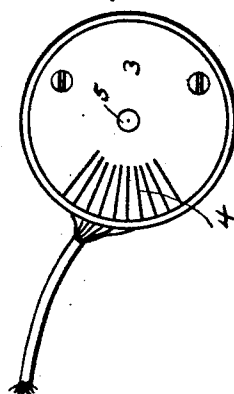
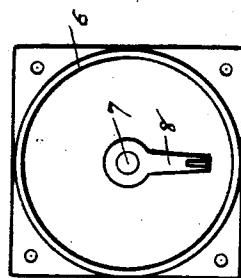
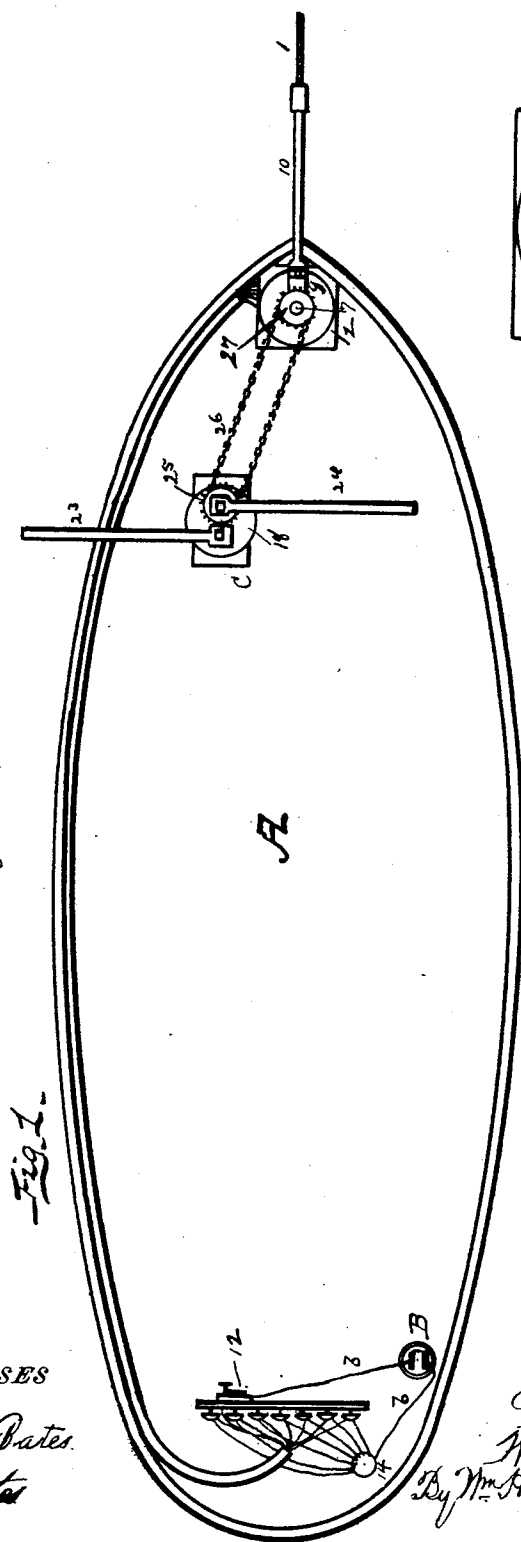
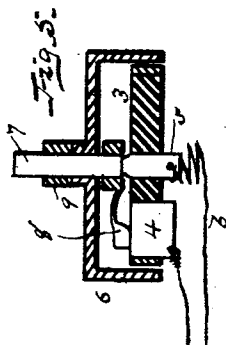
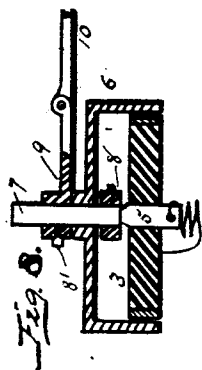
(No Model.)

2 Sheets—Sheet 1.

W. R. MOORE & W. MEGARVEY.
APPARATUS FOR STEERING VESSELS.

No. 541,286.

Patented June 18, 1895.



WITNESSES
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INVENTORS.
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(No Model.)

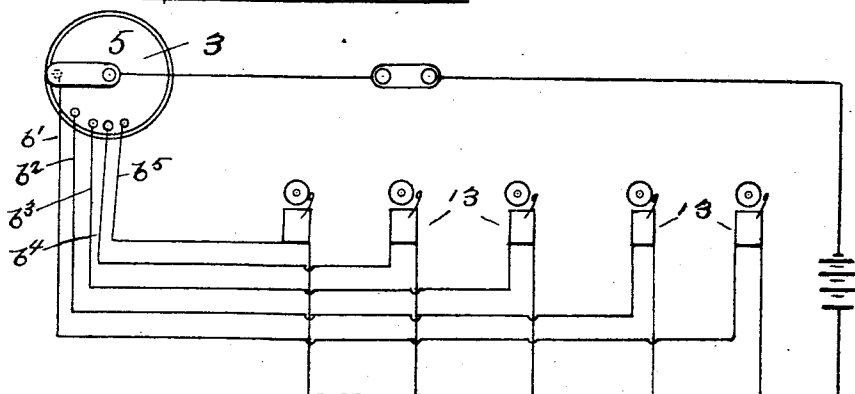
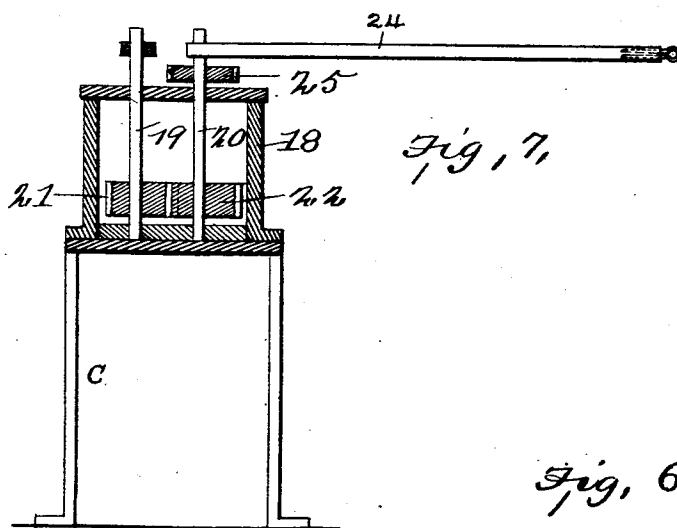
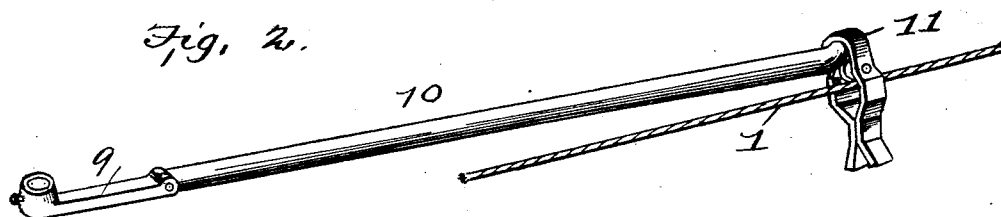
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WITNESSES-

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UNITED STATES PATENT OFFICE.

WILLIAM R. MOORE AND WILLIAM MEGARVEY, OF CLEVELAND, OHIO.

APPARATUS FOR STEERING VESSELS.

SPECIFICATION forming part of Letters Patent No. 541,286, dated June 18, 1895.

Application filed February 23, 1895. Serial No. 539,378. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM R. MOORE and WILLIAM MEGARVEY, citizens of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Apparatus or Means for Steering Vessels, &c.; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention has relation to apparatus or means for indicating on a vessel being towed the change in the course or direction of a steam boat while towing another vessel, whereby the pilot or man at the wheel may be enabled to direct his vessel in the course taken by the towing vessel, by the indications given by and through the appliances or devices of our invention.

The object therefore, is to provide a correct indicating apparatus controlled by the direction assumed by the towline connecting the vessels.

In the accompanying drawings, Figure 1 is a view illustrating the application of our invention to a vessel. Fig. 2 is a detail of the lever which is connected to the towline. Fig. 3 is a plan view of the commutator interposed to change the circuit from one indicator to another. Fig. 4 is an inverted plan view of the cap of the commutator, showing the contact-arm on the lever-post. Fig. 5 is a transverse section through the commutator. Fig. 6 is a diagram showing the system of circuits employed to give the respective signals on the alarm or to operate the annunciators. Fig. 7 shows a lantern-swinging device. Fig. 8 is a vertical longitudinal sectional view of the commutator.

Our invention is especially applicable on boats or barges used on the great lakes of our country, such barges or boats being usually towed to and from their ports loaded with various heavy freight. The routes of these barges extend over many miles, and progress at night is common and often essential; and fogs at night and day are often encountered, during which the men on the vessels being towed cannot see the lights on the towing vessel, which is usually six or seven

hundred feet ahead and connected only by the tow-line. As heretofore mentioned our purpose is provide a certain and reliable means for indicating the course of the towing vessel to the vessel being towed.

Referring to the drawings, A designates the vessel to which our invention is applied. On the bow of the vessel is attached a tow-line 1, fixed to the vessel by any of the usual fastenings. On the vessel adjacent to the bow is mounted a suitable stand or support 2, carrying a commutator 3, consisting of a non-conducting plate having conducting strips 4, in number corresponding to the numbers of circuits used in connection with the alarm or annunciators. In the center of the plate of the commutator is an aperture in which is fitted a spring-supported contact-plug 5, to which is connected one of the battery lines as will be more fully specified when the circuits are described. Over the commutator is fitted and secured a cover 6, having suitably mounted therein a rotatable post 7, carrying on its lower end, which projects into the interior, a contact-arm 8, to make circuit from the contact-plug 5, with the conducting-strips 4, of the commutator. The end of the post 7, is always contacted by the upper end of the plug 5, through the agency of the spring which supports the plug. On the upper portion of the post 7, is fitted an arm 9, set to the post by a set screw 8, or it may be splined thereto. To the outer end of the arm 9, is hinged or jointed a lever 10, so as to have free up and down movement, but being rigidly held in its connection against lateral movement independent of the arm. On the free end of the lever 10, is secured a catch piece 11, preferably consisting of two spring-jaws adapted to set down over the tow-line and thus hold the lever in place and in alignment with the line, substantially as indicated in the drawings. It will now be perceived that the lever 10, may be swung laterally by the movement of the tow-line and thereby bring the contact-arms on the post into contact with the conducting-strips of the commutator and thus operate the alarm or throw the annunciator, of the circuits touched through this connection.

In Fig. 1 of the drawings we have illustrated with general clearness the apparatus

mounted in operative relation, but it is readily perceived that the dispositions and arrangements of the signals may in any position convenient to the visual observation to the person to whom the indications of direction are to be made apparent. To properly illustrate the arrangement of the circuit we have shown them in Fig. 6 of the drawings and reference being thereto had, B designates the battery or source of electric energy, from one pole of which runs a wire *b*, having the other end attached to the yielding contact-plug 5, in the commutator, and as heretofore mentioned, continuity of this side or line of the battery is made through the contact-arm 8, with the conducting-strip 4, successively when turned to such contact. In the line *b*, is interposed a switch-button, 12, by which the circuit is made and broken in the usual manner. When the contact-arm 8, engages the conducting-strips 4, the circuit is made according to such contact, by wires *b'*, *b''*, *b'''*, *b''''*, *b''''''*, *b''''''''*, leading and secured to one of the binding-posts of the indicators 13, substantially as shown. The other limb or line of the circuit is made by wire *a*, which has connection to a coupling-ring 14, from whence wires *a'*, *a''*, *a'''*, *a''''*, *a''''''*, *a''''''''*, which lead to the binding-post of the indicators, and complete the circuits. The conducting-strips 4, radiate from the center of the commutator and are intended to indicate in their arrangement a definite number of points of direction and thus be the mediums of indicating the precise change of course on the indicator or alarm. The strips 4, may be conveniently disposed to announce every quarter-point of a sailor's compass.

We have shown seven indicators in the drawings which may be alarms, or annunciators, or both combined; and in this arrangement, with the circuit line *b*, in force through the switch 12, and the tow-line holding the lever straight ahead, the center indicator will be energized, and when the lever turns a quarter point to the left, the first alarm to the left of center will be sprung; and when the turn reaches the "half-point" to the left the second alarm will be announced; and at the "three quarter point" the third or outmost alarm will be announced; and then when the "full-point" has been reached in the same direction the center alarm will act again, and so on acting on the center alarm every "point" turned in the same direction. The "point" here stated relates to the thirty-two points of the compass used to designate the course of a vessel by sailors; and the conducting strips of the commutator can be multiplied accordingly. The circuit wires may be grouped in an insulated cover or cable as indicated in Fig. 1.

In Fig. 9 of the drawings we have shown a lantern-support consisting of a hub 15, to fit over the post 7, and from the hub extend two arms 16, 17, to the ends of which lanterns can be hung or otherwise secured, so that as the

lever in connection with the tow-line is turned, the direction of the course to be steered may be reasonably ascertained by the position of the lanterns to a line at right angles to the lever.

Some barges and other boats usually towed have sails, and in the use of the sails the lanterns indicated in Fig. 9, would not be visible, and to obviate this dilemma or objection, we have devised a means illustrated in Figs. 7 and 8 of the drawings. Referring to these figures of the drawings, C designates a suitable stand mounted on the deck and made detachable and movable to different positions thereon. On the stand C is mounted a casing 18, having journaled therein two upright shafts 19, 20, carrying intermeshing pinions 21, 22. These shafts 19 and 20 may be connected either by sprocket wheels or chain. The shafts 19, 20, project above the casing and have secured thereto the respective ends of two arms 23, 24, having their free ends adapted to sustain lanterns. If preferred one lantern arm only may be used. On the projecting portion of the shaft 19, is fixed a sprocket-wheel 25, on which is arranged a sprocket-chain 26, carried about a sprocket-wheel 27, on the post 7. From this description it will be perceived that when the lever is moved by the tow-line the arms 23, 24, will be swung in opposite directions through the medium of the chain and the gearing on the shafts, and the course to be steered thus indicated by the position of the lanterns. When the sails are set on one side of the vessel the stand can be moved to the other side thereof and into position where the lantern on the arms will be in full sight of the man at the wheel.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In an apparatus for announcing the course to be steered by a towed vessel, the combination of an electric-generating medium, a commutator mounted at the prow, a rotatable post in the commutator, a wire between the commutator and the generating medium, a series of wires leading from the conductors of the commutator to one side of the indicators a wire from the opposite side of the generating medium, branch-wires therefrom to the other side of the respective indicators, a contact arm on the rotatable post of the commutator, a lever to turn the post and contact-arm, and a tow line attached to the vessel, and a loose mechanical connection between the tow line and lever whereby the lever is made to assume the direction of the tow line, substantially as specified.

2. The combination with electric circuits arranged to operate indicators therein, and a commutator to change the circuit from one indicator to another, of a rotatable post having connection in the circuit and provided with an arm to engage the conductors of the commutator, a lever to turn the rotatable post,

and a tow line attached to the vessel, and a loose mechanical connection between the tow line and lever whereby the lever is made to assume the direction of the tow line, substantially as and for the purpose specified.

3. The combination of the rotatable post, the lever to turn the post, a sprocket wheel on the rotatable post, a stand, vertical, shafts in the stand, pinions on the shafts, lantern-arms secured to and projecting from the shafts, a sprocket-wheel on one of the shafts and a sprocket-chain connecting the sprocket-wheel, as described.

4. The combination of the tow-line, a lever connected thereto and adapted to be swung

on a horizontal plane thereby, a rotatable post to support the lever and to be turned thereby, two horizontally swinging arms, and connections between the arms and the rotatable post whereby when the lever is swung the arms will be moved in opposite directions on a horizontal plane, substantially as and for the purpose specified.

In testimony whereof we affix our signatures in presence of two witnesses.

WM. R. MOORE.

WM. MEGARVEY.

Witnesses:

N. E. BACON,

GEO. HESTER.