

No. 775,507.

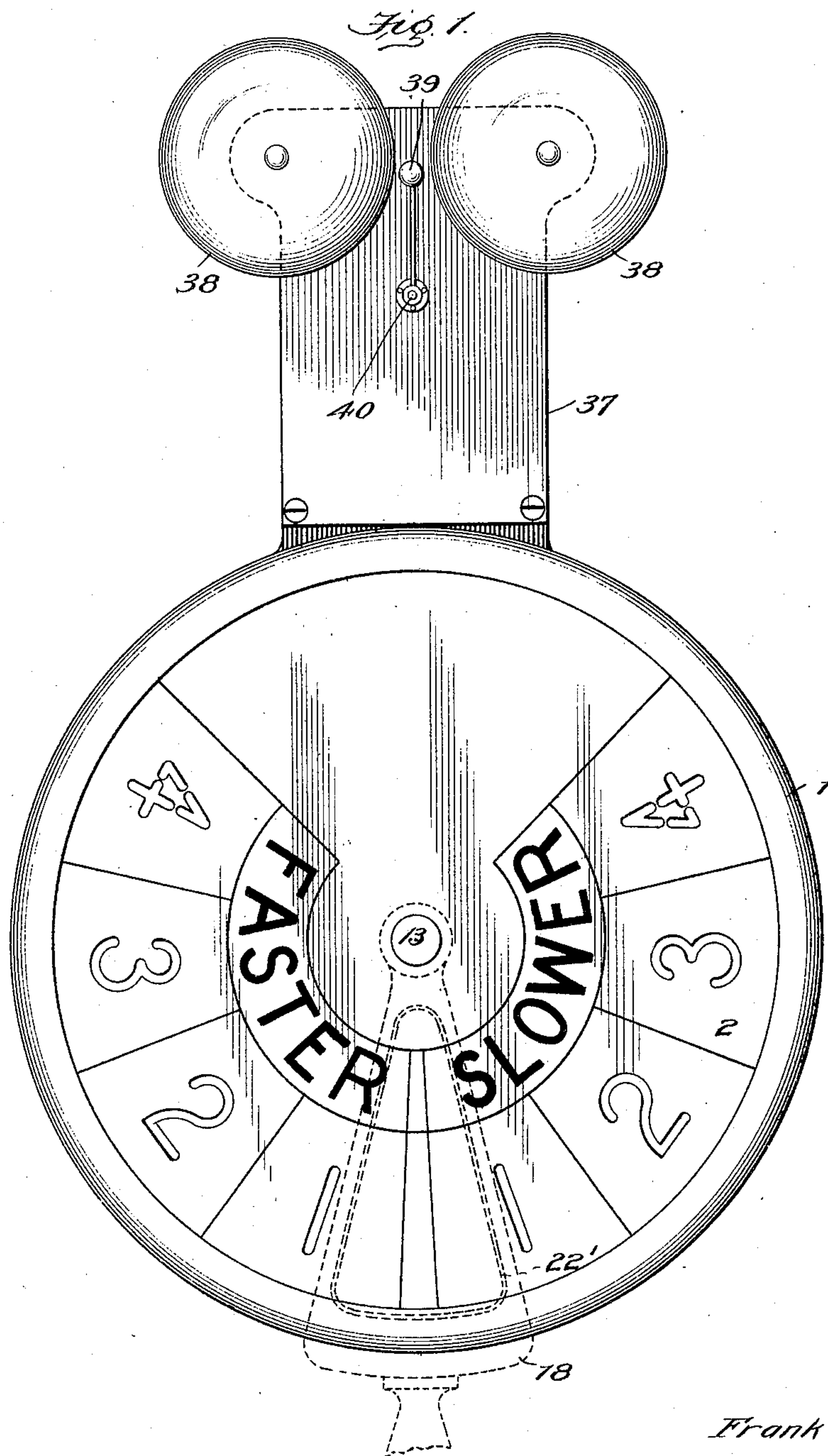
PATENTED NOV. 22, 1904.

F. W. WOOD.
SHIP'S SIGNAL.

APPLICATION FILED APR. 11, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



Inventor

Frank W. Wood

Witnesses

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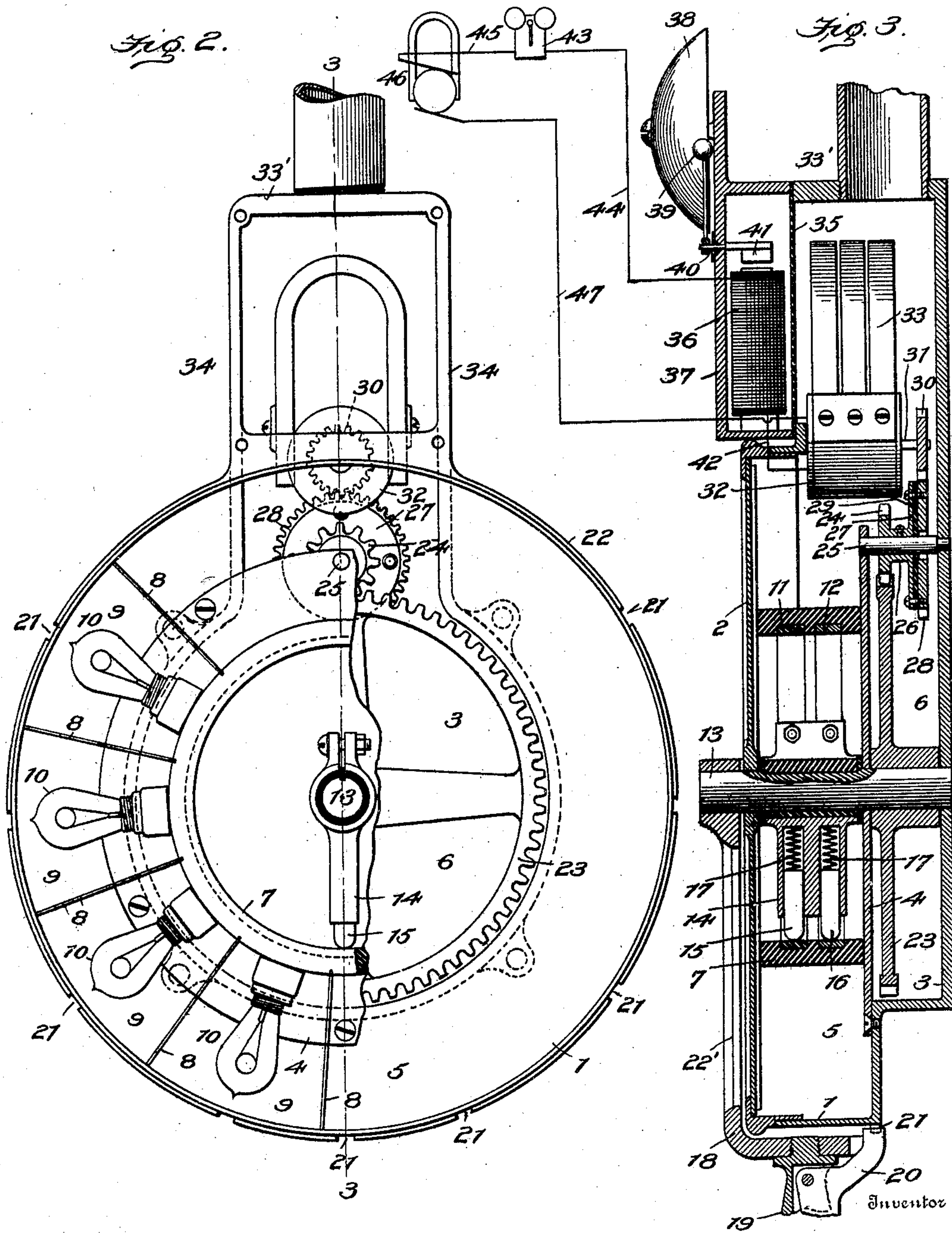
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UNITED STATES PATENT OFFICE.

FRANK WASHINGTON WOOD, OF NEWPORT NEWS, VIRGINIA, ASSIGNOR
TO CHARLES CORY & SON, OF NEW YORK, N. Y.

SHIP'S SIGNAL.

SPECIFICATION forming part of Letters Patent No. 775,507, dated November 22, 1904.

Application filed April 11, 1904. Serial No. 202,667. (No model.)

To all whom it may concern:

Be it known that I, FRANK WASHINGTON WOOD, a citizen of the United States, residing at Newport News, in the county of Warwick and State of Virginia, have invented new and useful Improvements in Ships' Signals, of which the following is a specification.

My present invention has relation to new and useful improvements in electrically-operated ship's telegraphs of that general character or type for use on shipboard by means of which messages or orders may be transmitted from one station or point on the vessel to another—as, for example, from the bridge to the engine-room.

The improvements contemplated by this invention have particular reference to ship's telegraphs of that general type shown in Letters Patent of the United States No. 667,859, granted to me February 12, 1901; and the object is to provide, in combination with transmitting and indicating instruments, such as are shown in said patent, an electric signaling-bell the circuit of which is energized by means actuated by the operation of the device or devices for operating the transmitter, so that an initial movement of said devices preparatory to the giving of the desired signal will sound the bell to announce that an order is about to be given.

The invention consists in constructing and associating, in combination with the transmitting and receiving instruments of the kind shown in my patent above referred to, a bell signaling-circuit in which is interposed a magneto-generating machine and providing means operated by the movements of the signal-controlling means of the instruments for rotating the armature of the generator, so that when the controlling means is actuated to transmit or acknowledge an order an initial movement of said means will rotate the armature to charge the bell-circuit and ring the bells associated with the instruments to indicate to the transmitter or receiver that an order is about to be or is being given or has been acknowledged.

The invention consists, further, in the arrangement and aggroupment of the various

elements in operative combination, to be more fully described hereinafter, and the novelty of which will be particularly pointed out and distinctly claimed.

I have fully and clearly illustrated my invention in the accompanying drawings, forming a part of this specification, and wherein—

Figure 1 is a view in front elevation of an instrument the construction of which embodies my invention. Fig. 2 is a view in front elevation of one of the instruments, the front plate being partly broken away to disclose the interior of the invention. Fig. 3 is a central vertical section through the instrument, taken on the line 3 3 of Fig. 2 and also showing a diagram of the bell-circuit between the bells on the transmitting and receiving instruments and the magneto-machines associated therewith, the receiver being omitted from the diagram, its structure being identical with the transmitter, so that the description of one will be sufficient for both instruments.

Referring to the drawings, wherein is illustrated an instrument of the character hereinbefore mentioned, 1 designates a cylindrical casing the front of which is closed by means of a plate 2, of transparent or translucent material, constituting an indicating-dial, and at its rear portion the casing is closed by a head or cover 3, substantially as shown in the drawings. Arranged intermediate the front and rear of the cylindrical casing is a vertical wall or partition 4, which separates the casing into front and rear chambers 5 6, substantially as shown in Fig. 3. Within the chamber 5 concentric to the casing and supported by the plate 2 and wall 4 is a ring 7, and extending from said ring to the periphery of the cylindrical casings are radially-directed partitions 8, which divide the annular space between the ring 7 and the casing into a number of compartments or pockets 9. Mounted upon the periphery of the ring 7 are a number of incandescent lamps 10, one lamp being shown as projecting into each of the compartments 9, to which reference is above made. As shown in Fig. 1 of the drawings, on the face of the dial-plate 2 and over the

respective compartments 9 are designated in opaque or colored letters the desired orders usually transmitted to the engine-room. The dial also has delineated thereon two designations—"Faster" and "Slower." In the drawings the designations over the compartments 9 are in figures to denote the degree of speed to which the engines are desired to attain. By this arrangement it will be evident that the lamps will only illuminate or render visible those orders actually transmitted or received, all the other indications of orders remaining invisible until the lamps in the compartments behind the same are brought into action. On the inner side of the ring 7 are fixed two sets of terminal contacts 11 12, the numeral 11 indicating the contacts for the lamp-circuit and the numeral 12 the common return-wire terminal, extending around the inner side of said ring 7 entirely. Journaled in the dial-plate 2, the head 3, and partition 4 is a spindle 13, which carries a contact-maker comprising a metal arm 14, provided with two longitudinal sockets, in which are arranged carbon pencils 15 16. In the sockets between the inner ends of the carbon pencils and the bottoms of the sockets are expansive coil-springs 17, which operate to force the said pencils into contact with the ring 7 or the contacts 11 12. One end of the spindle 13 projects in front of the dial-plate 2, and rigidly mounted thereon is an operating-arm 18, provided at one end with a handle 19, said handle having a latch 20 associated therewith, which is operable to engage notches 21, formed in an annular flange 22, and hold the arm at any point to which it may be adjusted, one of such notches being located opposite to each of the compartments 9 in which the lamps are arranged. In order that the arm in moving across the indicating-dial will not obstruct the view of the order-designations, I form said arm with an opening 22', through which the order to which the arm may be swung is plainly visible.

The description above given applied briefly to those mechanical features embodied in my Letters Patent above referred to in order that the improvements to be presently set forth and embodying my present invention may be more readily understood. I have not shown or described the circuits for the lamps or shown their connections with said lamps and the contacts 11 and 12, inasmuch as they have no bearing upon my present invention and do not affect it in its structure or operation in the least.

I will now proceed to describe my present invention.

Within the chamber 6 of the casing and rigidly mounted upon the spindle 13 is a large driving-gear 23, which meshes with a smaller gear 24, rigidly mounted upon a shaft 25, journaled in suitable bearings in the wall 4 and the head 3. This gear 24 is formed at its

side portion with a hub or sleeve 26, carrying at its end opposite to the gear a disk 27, to which is secured, by means of suitable fastenings, a gear-wheel 28, which is spaced apart from the shaft 25 and is insulated from the disk 27 by a plate of insulation 29, arranged between said gear and disk. The gear-wheel 28 in turn meshes with a smaller gear-wheel 30, mounted on the shaft 31 of the armature 32 of a magneto-machine 33, arranged within a suitable casing or housing located at the upper portion of the cylindrical casing, said housing being provided by extending the head 3 vertically above the casing 1 and forming it with an upper horizontal wall 33' and vertical side walls 34, as shown in Figs. 2 and 3 of the drawings. This housing is closed at its front portion by a plate 35 of any desired insulating material.

Arranged above the casing 1 and in front of the housing for the magneto-machine are a pair of polarized magnets 36, which are protected by a boxing 37, at the upper exterior portion of which are mounted bells 38. Between the bells and adapted to strike the same is a striker 39, secured at its lower end to a stub-shaft 40, journaled in the face-plate of the boxing 37, said shaft extending within the boxing and engaged at its inner end by the rocking armature 41 of the magnets 36, which magnets are energized by a current generated by the magneto-machine 33.

Both the transmitting and receiving instruments are provided with a bell signaling mechanism and current-generating means, as above described, and in view of the fact that the transmitting and receiving instruments are identical in structure it will not be necessary to show in detail both instruments, but merely to indicate the circuits connecting the bells and their current-generating means, the bell and generator for the second instrument or receiver being designated by electrical symbols.

The circuit for the bells will now be described. From one terminal of the magneto-machine 33 a conductor 42 passes to the coil of the magnet 36, and the coil of said magnet at its other end is connected to the coil of the bell associated with the receiving instrument by a conductor 44. The bell-magnet 43 of the receiving instrument is electrically connected by a wire 45 to a magneto-generator 46, which is constructed substantially the same as the generator 33. From the generator 46 connection is made with the generator 33 by a return-conductor 47, substantially as shown in Fig. 3 of the drawings. It will be seen that the two bells and also the magneto-machines are arranged in series, and this being understood the operation of the invention is as follows: When it is desired to transmit an order, the operator grasps the handle 19 and releases the same from its locked position by disengaging the latch 20 from the notch 21 and swings the arm 18 in the desired direc-

tion until the order it is desired to transmit appears through the opening in said arm. This movement of the operating-arm 18 swings the contact-maker 14 around, so that the carbon pencils 15 16 make contact with the contact-strips 11 and 12 to light the lamp behind the order-designation corresponding to the one with which the opening and the operating-arm registers. At the initial movement of the operating-arm the spindle 13 is rotated, which revolves the large gear-wheel 23, which in turn revolves the gear-wheels 24 28 30 and the armature 32 of the magneto-machine 33. The armature 32 being rotated generates a current which traverses the magnets of the bells on both the transmitting and receiving instruments, flowing over the circuit just set forth. By this arrangement it will be seen that an initial movement of the arm 18 causes the current to traverse the circuit to ring the bells, which indicates to the party at the receiving end of the line that an order is about to be announced on the receiving instrument, and he is enabled to direct his attention to the instrument to read and acknowledge the instrument almost coincidently with the appearance of the order on the receiving instrument. This arrangement by which the bell is sounded at the instant the instrument is operated to transmit a message will save an appreciable amount of time in enabling the person to whom the order is given to promptly acknowledge and execute the same in view of the fact that he can be ready to read the order at about the same time it appears on the instrument. It will also be seen that the bells ring continuously during the swinging movement of the arm, so that the sound thereof is less likely to be rendered undiscernible by the noises incident to running machinery and there is less danger of the order given going unheeded.

In the drawings I have shown a simple and efficient arrangement of gearing for transmitting motion from the spindle 13 to the armature of the magneto-generator; but I do not desire to be limited to such an arrangement, inasmuch as I can utilize various other means equally efficient to transmitting the motion.

What I claim is—

1. In a transmitting and receiving instrument, for a ship's telegraph, the combination with a casing, circuit-terminals therein, and a shaft journaled transversely of the casing and carrying contacts for the terminals, of a gear-wheel mounted on said shaft to rotate therewith, a magneto-generator, the armature of which carries a pinion, a second shaft journaled in the casing, a gear thereon in mesh with the master-gear, and a second gear on said second shaft meshing with the gear on the armature, the gears on said second shaft being insulated from each other.

2. In a transmitting and receiving instrument for a ship's telegraph, a casing having a dial bearing characters indicating orders to be transmitted and received, signal-transmitting means, a shaft journaled in the casing, means operable by the shaft to render the transmitting means effective, a handle to rotate the shaft provided with means associated with the dial to assist in the control of the transmitting means, an audible-signal circuit, a magneto-generator in said circuit, and means controlled by the shaft to operate the generator.

3. In a ship's telegraph, the combination with the electric transmitting and receiving instruments and their manually-controlled operating devices to transmit and acknowledge messages, of a circuit associated with said instruments but independent of the signaling-circuit and including audible signals at each instrument, a magneto-generator in connection with each of the instruments and arranged in circuit with the audible signals and means whereby the operation of the manually-controlled operating devices of either of the instruments actuates its generator to charge the circuit and sound the audible signals therein.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK WASHINGTON WOOD.

Witnesses:

J. HEATH,

W. T. YOUNG.