

(No Model.)

3 Sheets—Sheet 1.

W. T. W. THACKERAY & I. HURN.  
TELL TALE APPARATUS FOR SHIP TELEGRAPHS.

No. 414,343.

Patented Nov. 5, 1889.

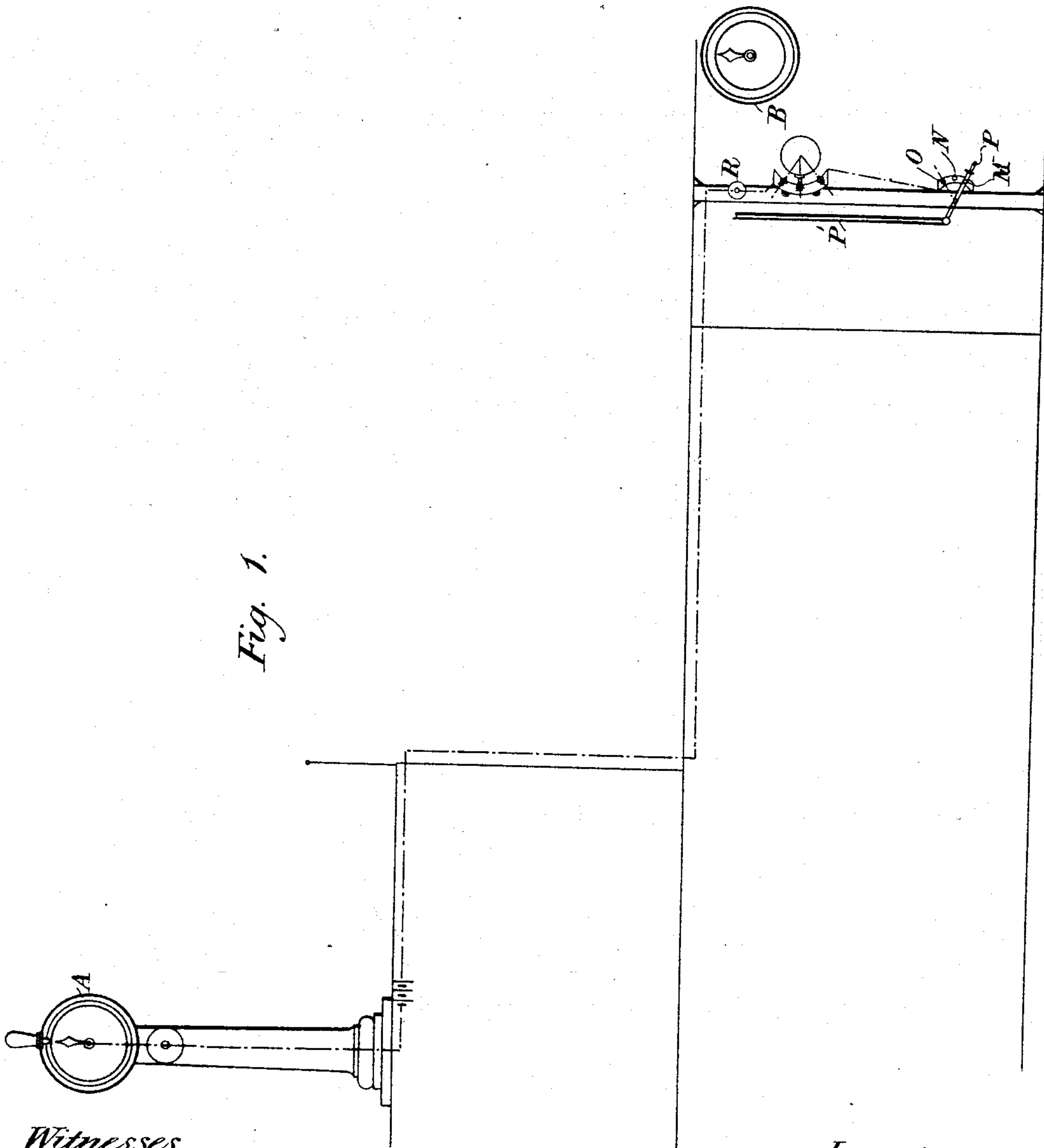


Fig. 1.

Witnesses.

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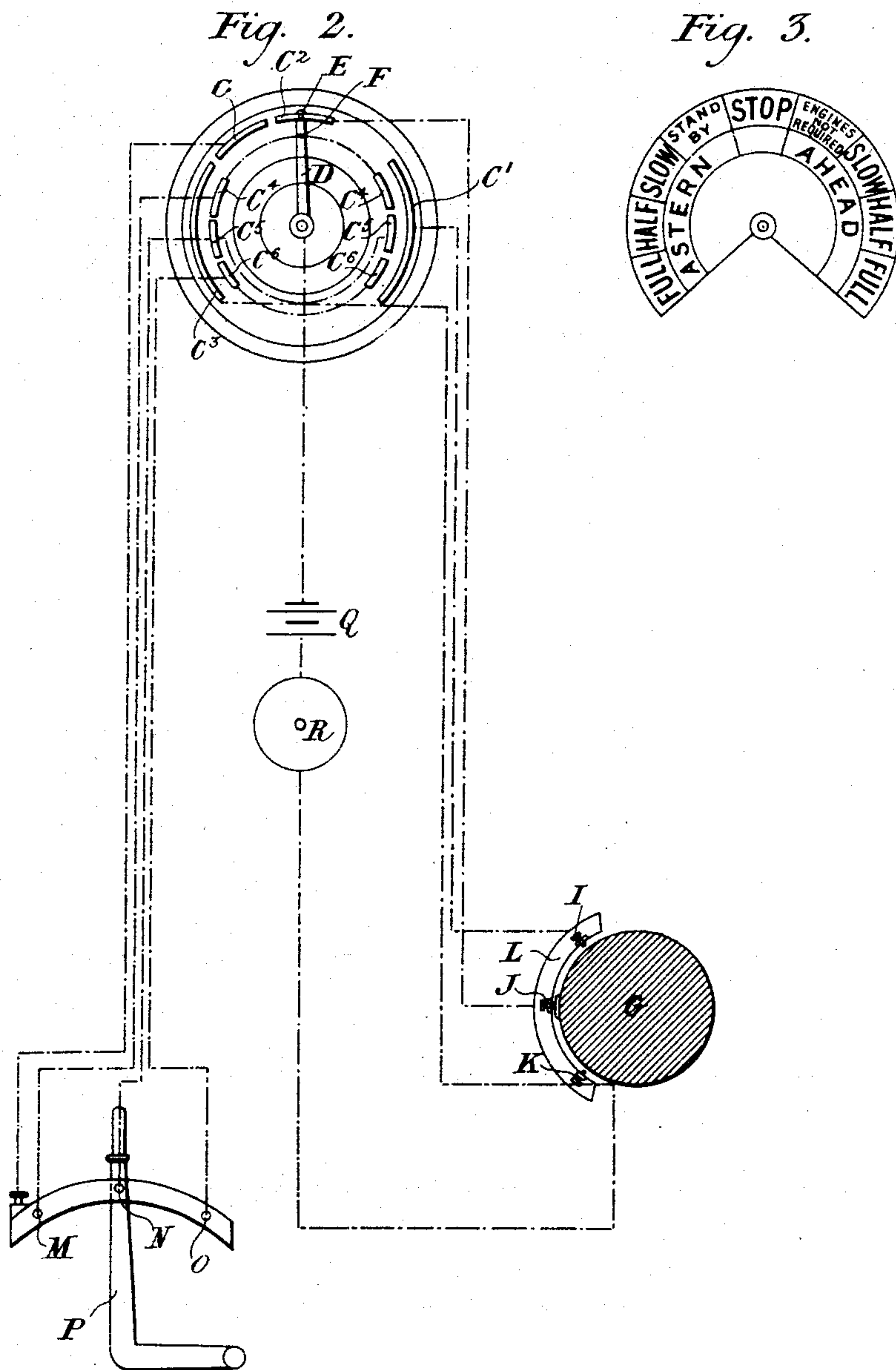
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Witnesses.  
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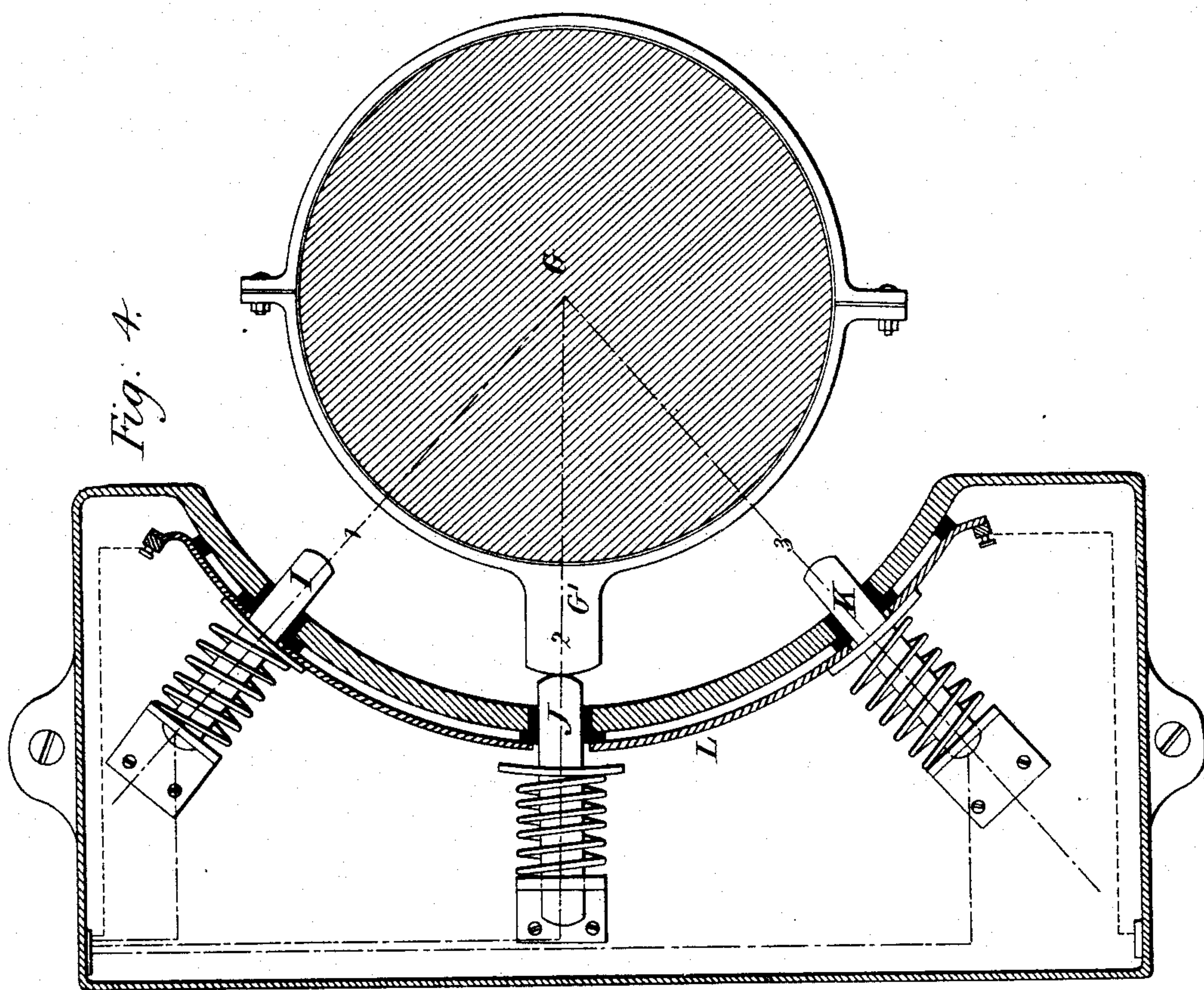
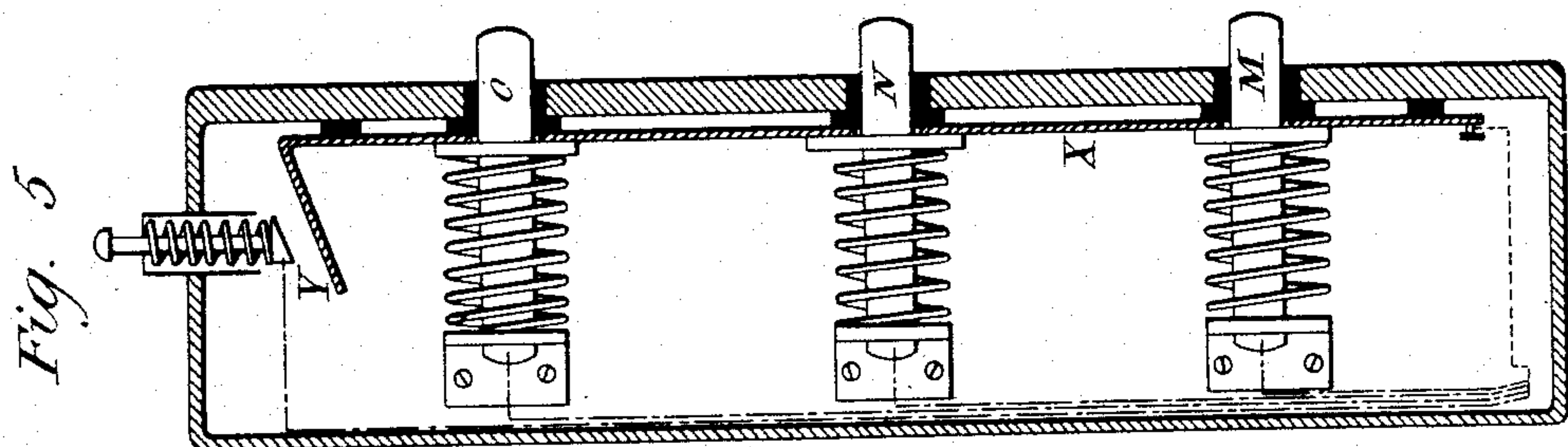
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Witnesses.

Baltus D. Long.

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# UNITED STATES PATENT OFFICE.

WALTER THOMAS WRIGHT THACKERAY, OF WANDSWORTH, COUNTY OF SURREY, AND ISAAC HURN, OF LONDON, COUNTY OF MIDDLESEX, ENGLAND.

## TELL-TALE APPARATUS FOR SHIP-TELEGRAPHS.

SPECIFICATION forming part of Letters Patent No. 414,343, dated November 5, 1889.

Application filed September 14, 1889. Serial No. 323,949. (No model.)

*To all whom it may concern:*

Be it known that we, WALTER THOMAS WRIGHT THACKERAY, engineer, residing at 80 Eccles Road, Wandsworth, in the county of Surrey, England, and ISAAC HURN, electrician, residing at 1 St. James Street, Pall Mall, in the county of Middlesex, England, subjects of the Queen of Great Britain, have invented certain new and useful Improvements in Tell-Tale Apparatus for Ship-Telegraphs, for indicating whether orders given to the engine-room of steam-vessels are properly carried out, applicable also as a steering tell-tale and for like purposes, of which the following is a specification.

This invention has for its object to provide a simple automatic and inexpensive check on the working of marine or other engines and machinery to indicate whether and when any order has been carried out.

The invention is also applicable as a steering-indicator and for other like purposes.

Any ordinary dial-indicator, either electrical or mechanical, may be used for the transmission of orders to the engine-room. With it is used an electrical tell-tale apparatus, so arranged that whenever the transmitting-handle of the dial-indicator is moved from one order to another a bell is rung, and it rings until the order has been carried out. Ordinarily in marine steam-engines the direction of movement of the engine is controlled by the position of a weigh-shaft connected with the slide-valve mechanism, and the speed is controlled by a cut-off valve regulating the amount of steam admitted to the engines. In such a case we construct the tell-tale mechanism in such a manner that in transmitting the order electric circuits in which an electric bell is included are closed, and in moving the valves these circuits are again opened. In the drawings annexed we have shown our invention applied to such a case.

Figure 1 shows in diagram the positions of the parts of the apparatus. Fig. 2 shows the electrical connections. Fig. 3 represents the dial-face. Fig. 4 is a section on a larger scale of the contact mechanism acted on by the weigh-shaft used for shifting the valve mechanism, by which the movement of the

engine forward or backward is controlled. Fig. 5 is a section of the contact mechanism acted on by the hand-lever used for opening or closing the steam-supply valve.

In Fig. 1, A is the dial at the transmitter end of any ordinary engine-room telegraph. It may be placed upon the bridge or in any other convenient position from which orders have to be transmitted to the engine-room.

B is the dial in the engine-room. The index on the dial B indicates to the engineer in charge of the engines the orders sent to the engine-room.

No mechanism is shown in the drawings for causing the index of the dial B to move in unison with the handle of the transmitter at A, as various arrangements of mechanism are now commonly in use for effecting this object.

C, C', C<sup>2</sup>, C<sup>3</sup>, C<sup>4</sup>, C<sup>5</sup>, and C<sup>6</sup>, Fig. 2, are insulated contact-plates ranged in two circles concentric with the axis of the transmitter-handle or other axis which is turned in the act of transmitting the order. D is an arm on this axis, carrying two metallic pins E F, one of which comes to rest on the inner circle of contact-plates and the other on the outer circle.

G is the weigh-shaft for shifting the engine valve or valves into position for causing the engine to move either ahead or astern. It has upon it a projection G'. When the projection G' is on the radial line 1, Fig. 4, the valve mechanism is in position for the engine to be driven astern. When it is on the radial line 2, the valve mechanism is in position for stopping the engines, and when on the radial line 3 the valve mechanism is in position for the engine to be driven ahead. When in these positions, the projection comes against and presses back one or other of the pins I J K. When a pin is pressed back, a shoulder on it is removed from contact with a metal plate L, which is connected through the bell with the battery. The three pins I J K are connected, respectively, by insulated conductors with the three contact-plates C' C<sup>2</sup> C<sup>3</sup>. The arm D is connected to the battery. M N O are three other similar contact-pins acted on by a projection on the hand-lever P, or, it might be, by a projection on



any other part of the mechanism moved by it—say, for example, on the rod P' in Fig. 1. The pin M is connected by an insulated conductor with the contact-plates C<sup>4</sup>, the pin N with the plates C<sup>5</sup>, and the pin O with the plates C<sup>6</sup>. The pins M, N, and O when not pressed back make contact upon a plate X. The plate X is connected with the bell and the battery in the same way as the plate L. Q is a battery. R is an electric bell.

The action of the mechanism is as follows: As the parts are in Fig. 2, the battery-circuit may be traced by D and C<sup>2</sup> to J; but here it is open and the bell does not sound. If, now, for example, the handle of the transmitter is shifted to "ahead, slow," the arm D is brought into contact with the plates C' and C<sup>4</sup> and the bell rings because the battery-circuit is complete by D, C', I, L, and R, and also by D, C<sup>4</sup>, M, X, and R. The bell rings until the weigh-shaft has been turned into position to press back the pin I and the hand-lever turned into position to press back the pin M. So soon as both pins are pressed back both circuits are broken and the bell ceases to ring. For other positions of the indicator the circuits may readily be traced. The plate C, with which D makes contact in the "stand-by" position, is connected with a push-button Y, which the engineer pushes in to acknowledge the stand-by signal. It makes contact on the plate X, and so causes the bell to ring.

By the use of our invention the commander is satisfied that his engineer obeys exactly the order given. Thus should the order given from the bridge be "half-speed astern," and by any error the engines are put "ahead," the continuous bell-ringing tells the commander and also the engineer that a mistake has been made.

If the tell-tale apparatus were only required to indicate whether the engines were stopped when the order to stop had been given and whether they were being moved ahead or astern when an order to move ahead or astern had been given, then only the contact-plates C', C<sup>2</sup>, and C<sup>3</sup> and insulated wires leading therefrom to the three pins I J K would be required.

A steering tell-tale may be made in this form, or any desired number of pins corresponding to I J K may be provided and arranged around the rudder-head.

What we claim is—

1. The combination, with engine-room telegraphs or steering or other such like telegraphs, of an arm on an axis which is moved round when an order is given and passes over a series of contact-plates and establishes a

battery-connection with the plate or plates on which it rests, and insulated wires from these contact-plates to contact-pins, which normally make contact with a plate in connection with a bell and battery, but which are so disposed as to be pressed back by the part or parts whose position has to be indicated, so that as the indicator is brought to point to any order on the dial a circuit or circuits are completed by the arm, and a bell in the circuit is rung and continues to ring until the lever or other moving part or parts are moved into position to press back the contact pin or pins corresponding to the new position of the arm.

2. The combination of a dial telegraph-indicator, a series of contact-plates ranged in two circles concentric with the axis of its transmitting-handle, an arm on the axis of the transmitter-handle which is in electrical connection with two of these contact-plates whenever it is brought into position to point to a division of the dial-face, insulated wires leading from the plates in one circle to contact-pins, and other insulated wires leading from the contact-plates in the other circle to other contact-pins, an electric battery having one pole in electrical connection with the arm on the axis of the transmitting-handle, and the other pole normally in electrical connection with all the contact-pins, an electric bell or bells in the electrical circuit, a moving arm or mechanism by which any contact-pin in one set can be pressed back and the circuit through it broken, and a moving arm or mechanism by which any contact-pin in the other set can be pressed back and the circuit through it broken.

3. The combination of a dial telegraph-indicator, a series of contact-plates concentric with the axis of its transmitting-handle, an arm on the axis moved by the transmitting-handle, which is brought into electrical connection with one or other of these contact-plates whenever it is brought into position to point to any one or other of the divisions of the dial-face, insulated wires leading from the plates to contact-pins, an electric battery having one pole in electrical connection with the arm on the axis of the indicator-hand, and the other pole normally in electrical connection with all the contact-pins, an electric bell or bells in the electrical circuit, and a moving arm or mechanism by which any one or other of the contact-pins can be pressed back and the circuit through it broken.

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