W. MICHAEL.

SIGNAL CONTROL MECHANISM.

APPLICATION FILED OCT. 29, 1912.

1,066,300.

Patented July 1, 1913.

2 SHEETS—SHEET 1.

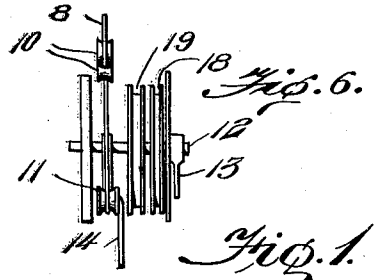


Fig. 6.

Fig. 1.

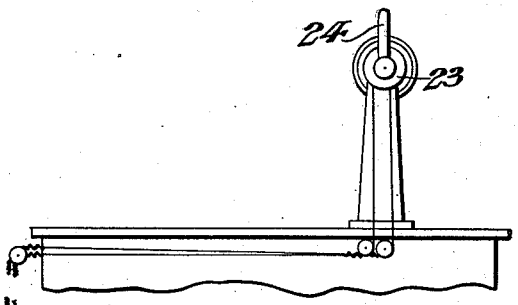
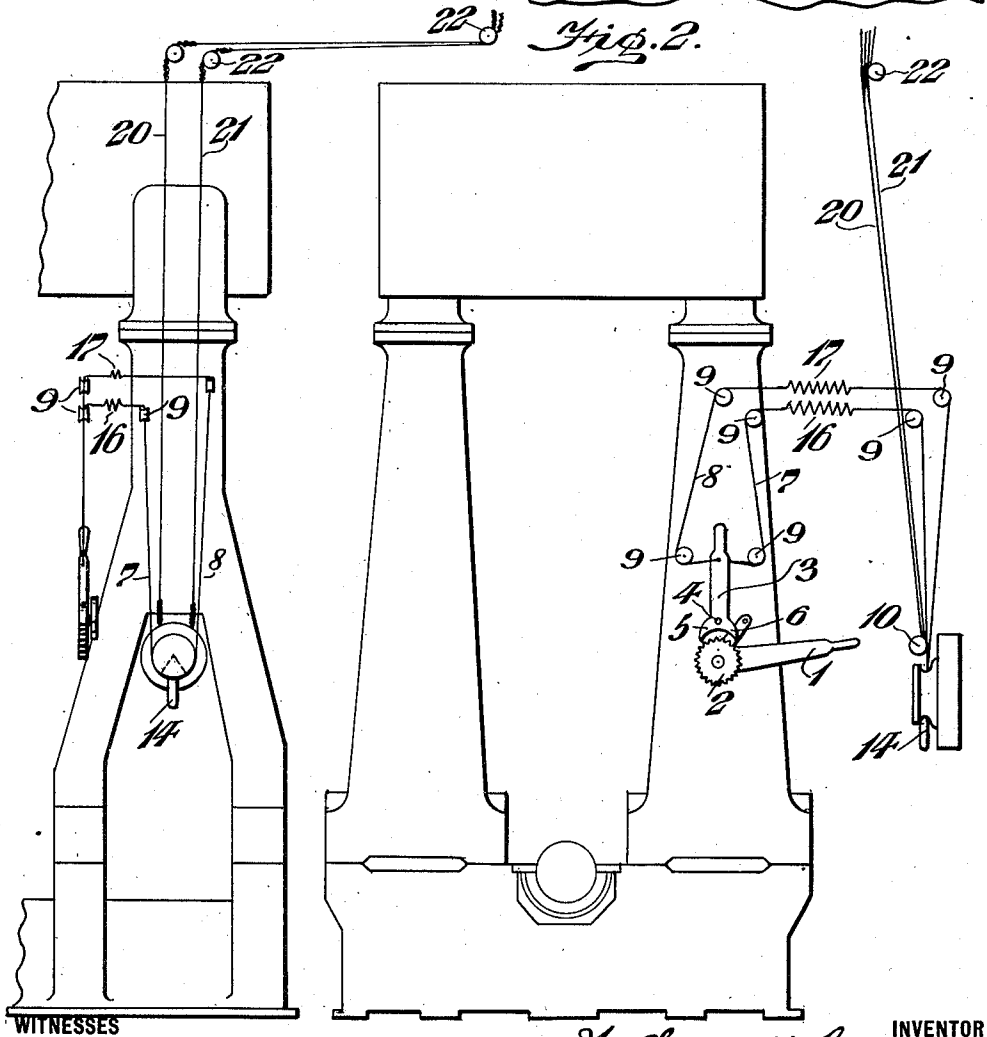


Fig. 2.



WITNESSES

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2 SHEETS—SHEET 2.

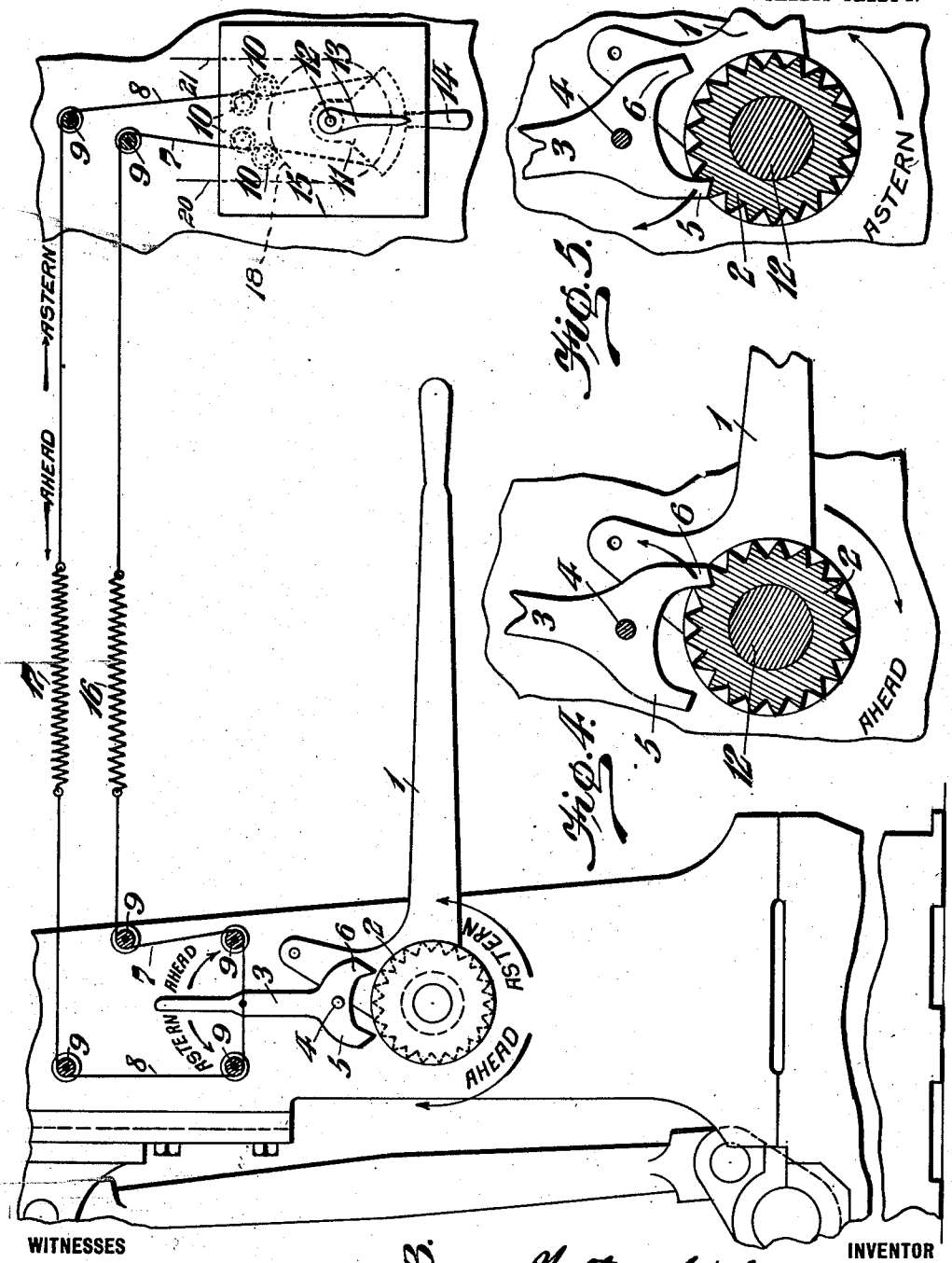

Fig. 3.

Fig. 4.

Fig. 5.

WITNESSES

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UNITED STATES PATENT OFFICE.

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SIGNAL-CONTROL MECHANISM.

1,066,300. Specification of Letters Patent. Patented July 1, 1913.

Original application filed June 12, 1912, Serial No. 703,130. Divided and this application filed October 29, 1912. Serial No. 728,457.

To all whom it may concern:

Be it known that I, WALTER MICHAEL, a citizen of the United States, residing at Oakland, in the county of Alameda, State of California, have invented a new and useful Signal-Control Mechanism, of which the following is a specification.

My present invention is a division of application No. 703,130, filed June 12th, 1912, and has for an object to provide a mechanically controlled device which may be operated by the engine room telegraph and positively prevent the misunderstanding of signals from the bridge to the engine room of vessels.

With the above in view my invention in its broad and generic scope consists of novel means for locking the reverse lever of the main engine in such position that it is only operative in the direction for which the signal has been given, and novel means for mechanically operating the locking mechanism.

It further consists of other novel features of construction, all as will be hereinafter fully set forth.

For the purpose of illustrating my invention, I have shown in the accompanying drawings those forms thereof which are at present preferred by me, since the same have been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of these instrumentalities as herein shown and described.

Figure 1 represents a front elevation of a device embodying my invention, in assembled condition with respect to the reverse lever of an engine. Fig. 2 represents a side elevation of Fig. 1. Fig. 3 represents a side elevation of my device as adapted for mechanical operation. Fig. 4 represents a sectional elevation of a portion of Fig. 3 on an enlarged scale. Fig. 5 represents a sectional view similar to Fig. 4, but showing the parts in a different position with respect to each other. Fig. 6 represents a side elevation of a portion of Fig. 3.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings: 1 designates the reverse lever of the main engine, the hub of which has connected therewith a ratchet 2 so positioned as to be engaged by a pawl 3 which is pivoted at 4 to the engine frame or like fixed part and provided with ratchet engaging members 5 and 6, the function of which is to interlock with the ratchet 2 at certain times to prevent movement of the said ratchet in one direction or the other. Thus when one of the ratchet engaging members is interlocked with the ratchet 2 the movement of the reverse lever is prevented in one direction but permitted in the opposite direction and corresponding interlocking of the other ratchet engaging member operates in a converse manner.

7 and 8 designate cables passing around pulleys 9 and secured at one end to the pawl 3 in juxtaposed relation so that operation of the said cables causes the pawl 3 to move in one direction or the other according as to which of the cables exerts the pulling action. The opposite ends of the cables 7 and 8, in the present instance, pass between guide sheaves 10 and around the sheave segment 11, which latter is mounted on the spindle 12 which carries the telegraph pointer 13. It will be noted that the said segment 11 and its adjuncts are preferably mounted in a box 15. The segment 11 is provided with an operating handle 14 it being understood that the segment 11 and its adjuncts are preferably mounted in a box 15.

16 and 17 designate springs interposed in the lengths of the cables 7 and 8 respectively in order that the cables may be kept under tension and any slack taken up thereby. The spindle 12, in the present instance, carries a plurality of pulleys 18 and 19, which are suitably mounted to rotate therewith, to which are connected the cables 20 and 21, these latter passing over suitable pulleys 22 and operatively connected to a sheave 23 which is preferably mounted on the bridge of the ship and may be shifted as desired through the medium of the operating handle 24.

The method of operating my novel device should now be readily apparent and is as follows: When the sheave 11 is in the position seen in Fig. 3 which corresponds to the stop position of the telegraph pointer 13, the pawl 3 will be in the position seen in said Fig. 3 in which the ratchet engaging members 5 and 6 are out of agreement with the

ratchet 2, so that the ratchet 2 and the reverse lever 1 will be free to move in either direction. If the handle 24 is actuated to move the sheave 11 in the ahead direction about 40° which would correspond to ahead slow, the pawl 3 is moved in the direction ahead and the ratchet engaging member 6 will engage with the ratchet 2 in the manner seen in Fig. 4, so that the reverse lever 1 can only move in the ahead direction and consequently prevents the reverse lever 1 from being moved in the wrong direction. If the sheave 11 is moved in the astern direction, then the ratchet engaging member will interlock with the ratchet 2, so that the reverse lever 1 can only be moved in the astern direction.

It will now be apparent that I provide means for preventing any misunderstanding of signals from the bridge to the engine room since the reverse lever of the main engine is positively locked so that it is operative only in the direction for which the signal has been given, and I provide means for operating the locking mechanism in a direct and positive manner.

It will now be apparent that I have devised a novel and useful construction of a mechanism for insuring understanding of signals from bridge to engine room which embodies the features of advantage enumerated as desirable in the statement of the invention and the above description, and while I have, in the present instance, shown and described a preferred embodiment thereof which has been found in practice to give satisfactory and reliable results, it is to be understood that the same is susceptible of modification in various particulars without departing from the spirit or scope of the invention or sacrificing any of its advantages.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a device of the character stated, the combination with the engine reverse lever, of a ratchet carried thereby, a pawl interlocking with said ratchet to prevent its movement in one direction, cables connected with said pawl to throw it into and out of interlocking position, a tension device secured to said cables, and an operating member connected with said cables.

2. In a device of the character stated, the combination with the engine reverse lever, of a ratchet carried thereby, a pawl interlocking with said ratchet to prevent its movement in one direction, cables connected with said pawl to throw it into and out of interlocking position, an operating lever connected with said cables, a shaft for said operating lever, a pulley on said shaft, and means operatively connected with said pulley for actuating said operating lever from a distant point.

3. In a device of the character stated, the combination with the engine reverse lever, a ratchet carried thereby, a pawl interlocking with said ratchet to prevent its movement in one direction, cables connected with said pawl to throw it into and out of interlocking position, and an operating member connected with said cables.

4. In a device of the character stated, the combination with the engine reverse lever, a ratchet carried thereby, a lever pivotally mounted adjacent said ratchet, a plurality of pawls carried by said lever, cables connected with said lever to throw it into and out of interlocking position in either direction of movement, and an operating member connected with said cables, said parts being arranged so that one of said pawls interlocks with said ratchet in either position of said lever.

5. In a device of the character stated, the combination with the engine reverse lever, of a ratchet carried thereby, a pawl interlocking with said ratchet to prevent its movement in one direction, cables connected with said pawl to throw it into and out of interlocking position, an operating lever connected with said cables, a shaft for said operating member, a signal device carried by said shaft, a second operating lever located at a distant point, and connections between said second operating lever and said shaft for actuating said signal device.

6. In a device of the character stated, the combination with the engine reverse lever, of a ratchet carried thereby, a lever pivotally mounted adjacent said ratchet, a plurality of pawls carried by said lever, cables connected to said lever to throw it in either direction, an operating lever connected with said cables, said parts being arranged so that one of said pawls interlocks with said ratchet in either position of said lever, a shaft for said operating lever, a signal device carried by said shaft, a second operating lever located at a distant point, and means forming a connection between said second operating lever and said shaft to actuate said signal device.

WALTER MICHAEL.

Witnesses:
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MAURICE ASHER.