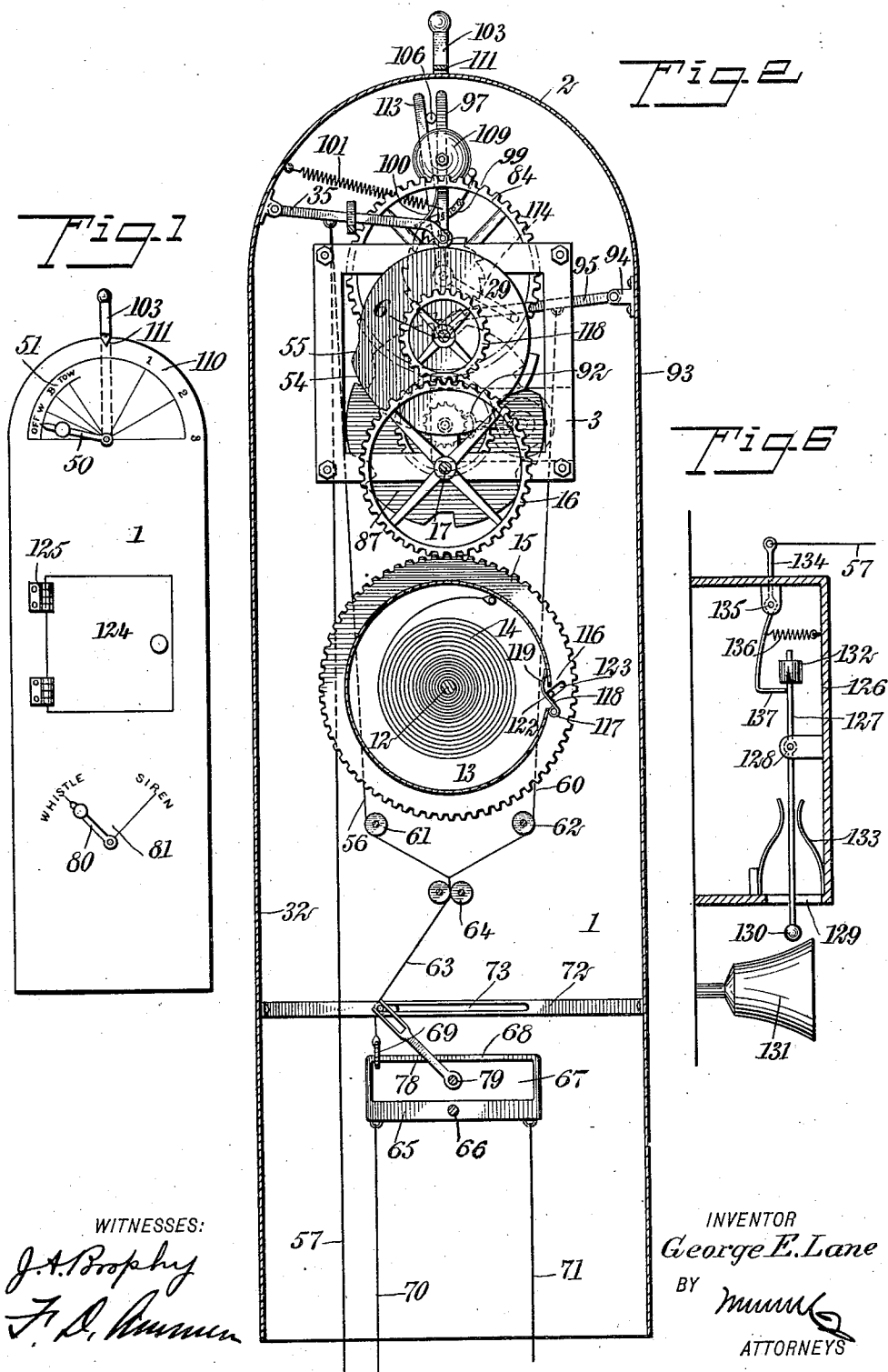


1,018,506.

G. E. LANE.
MARINE SIGNAL.
APPLICATION FILED AUG. 1, 1905.

Patented Feb. 27, 1912.

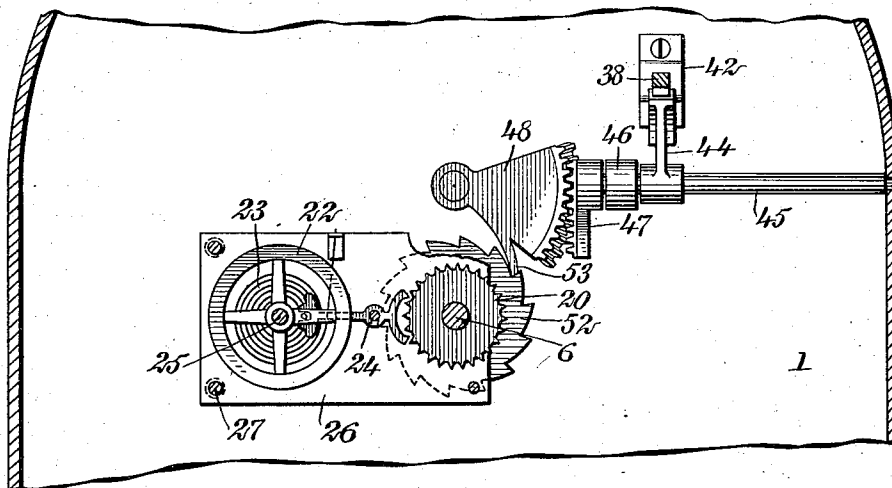
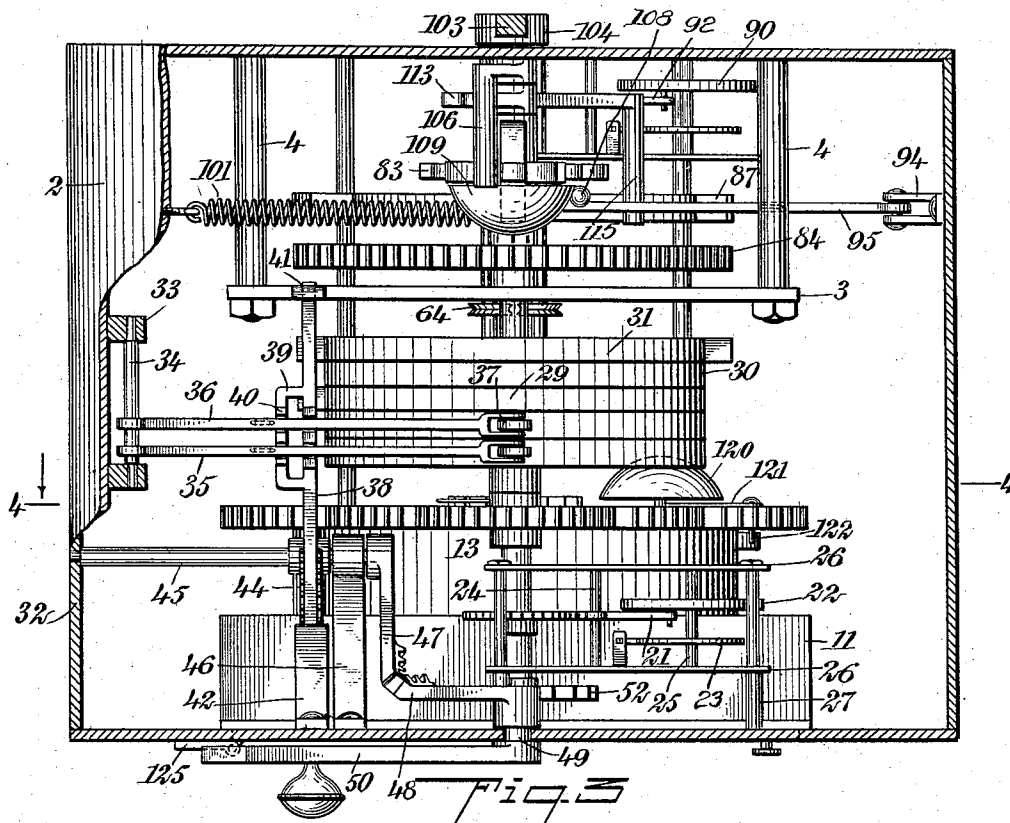
4 SHEETS—SHEET 1.



WITNESSES:

J. A. Propoy
F. D. Hummer

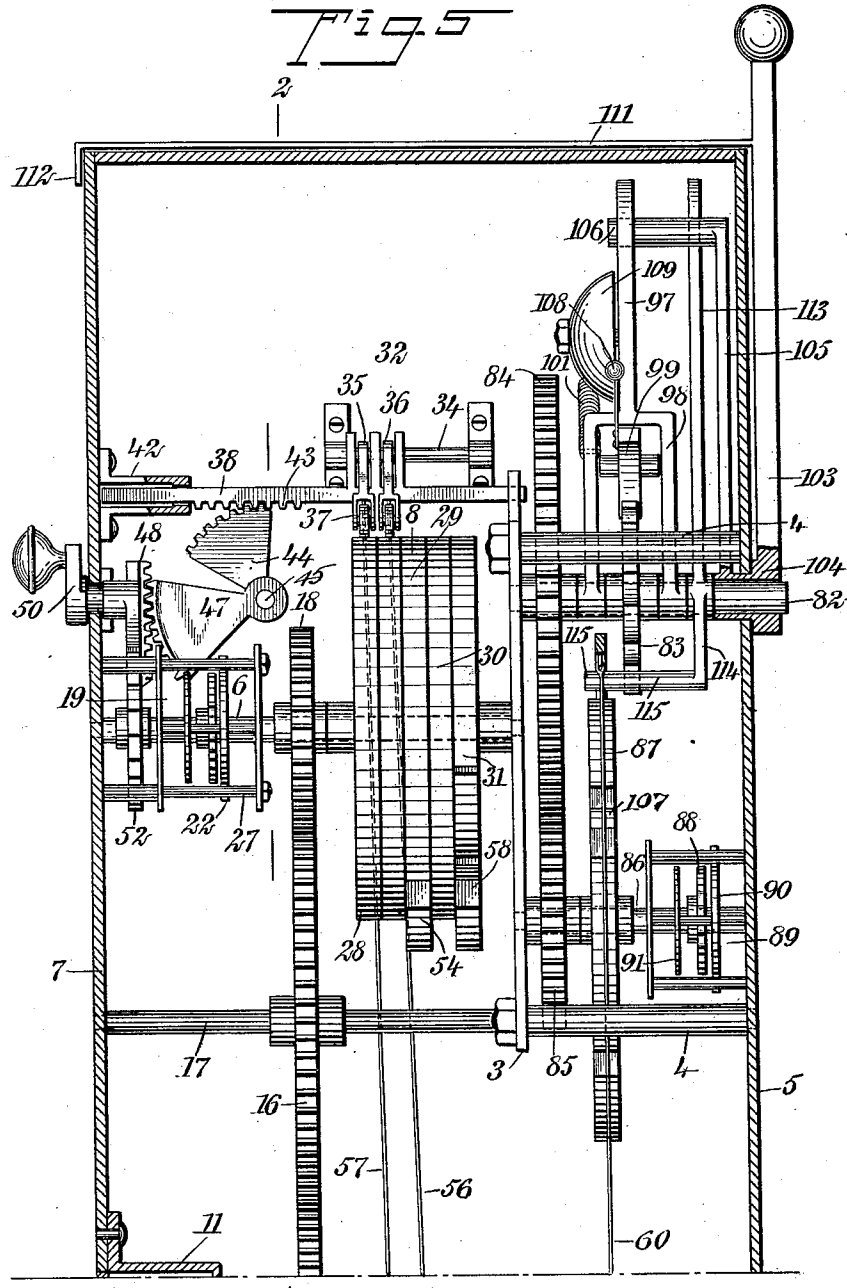
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Fig. 4

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Fig. 6

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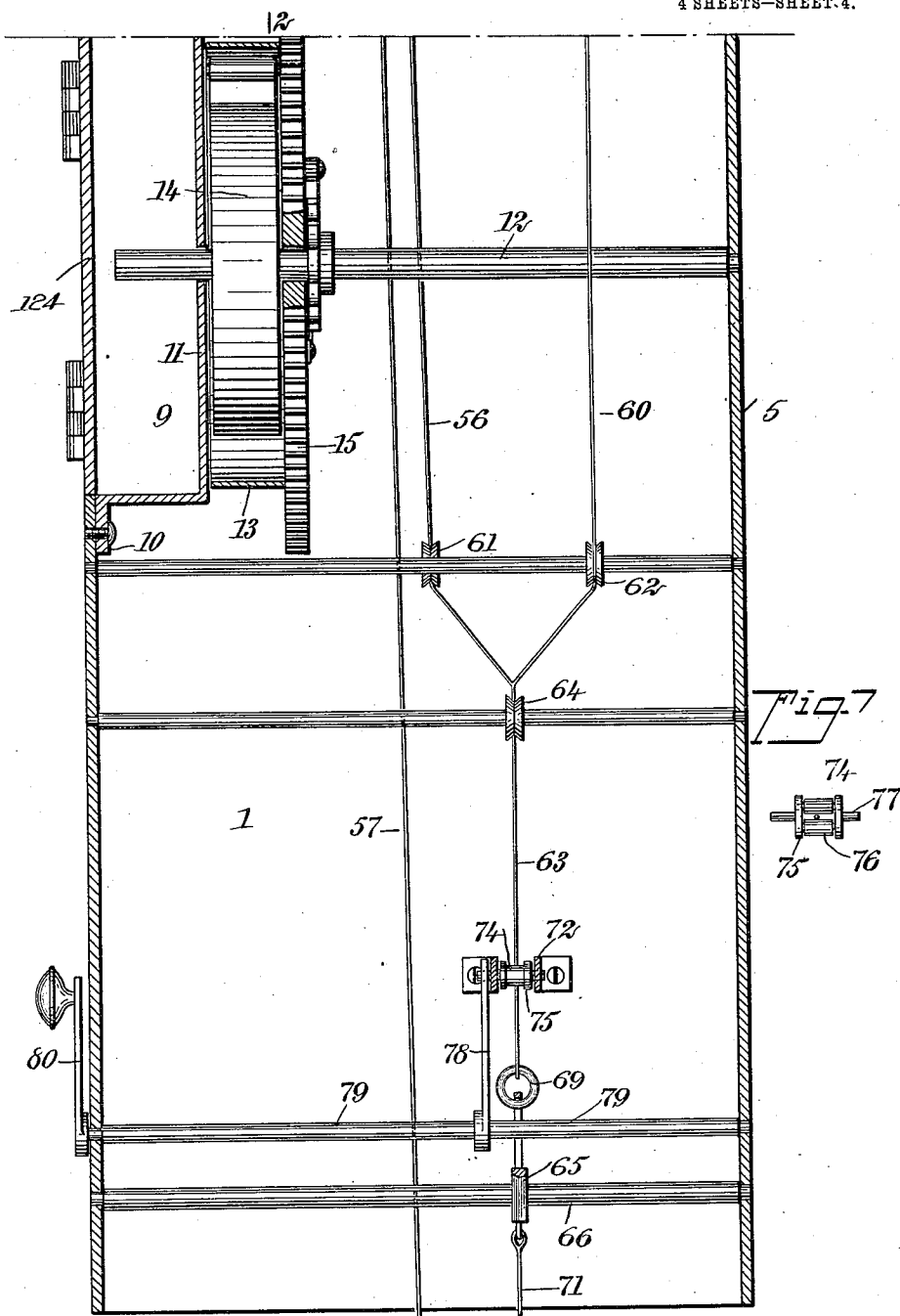
ATTORNEYS

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4 SHEETS—SHEET 4.



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Fig. 5^A

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UNITED STATES PATENT OFFICE.

GEORGE EDWARD LANE, OF SANTIAGO DE CUBA, CUBA.

MARINE SIGNAL.

1,018,506.

Specification of Letters Patent.

Patented Feb. 27, 1912.

Application filed August 1, 1905. Serial No. 272,157.

To all whom it may concern:

Be it known that I, GEORGE E. LANE, a citizen of the United States, and a resident of Santiago de Cuba, Cuba, have invented a new and Improved Marine Signal, of which the following is a full, clear, and exact description.

The invention relates to signals such as used aboard ship for indicating a ship's course, or for preventing such accidents as are likely to occur from fogs.

The object of the invention is to produce a mechanism of simple construction which will operate to give a signal automatically, and the mechanism includes an arrangement for enabling it to operate the usual whistle, the siren or the bell.

The invention consists in the construction and combination of parts to be more fully described hereinafter and definitely set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of the case containing the signal mechanism; Fig. 2 is a vertical cross section through the case and illustrating the signal mechanism mounted therein; Fig. 3 is substantially a horizontal cross section taken through the upper portion of the case and representing the mechanism in plan; Fig. 4 is a cross section taken substantially on the line 4—4 of Fig. 3 and illustrating a portion of the mechanism more in detail; Fig. 5 is a vertical section taken in a front and rear direction and showing the upper portion of the case and mechanism included therein; Fig. 5^a is a view similar to Fig. 5 but representing the lower portion of the mechanism and its case; Fig. 6 is a cross section through the case containing mechanism for operating a jangle bell and showing the bell adjacent thereto; Fig. 7 is a plan showing a shoe which is useful in shifting the mechanism so as to operate either the siren or the ordinary whistle; and Fig. 8 is a view showing the extremity of a lever which affords means for actuating the signal, and this view shows also a portion of the disk which actuates the lever.

Referring more particularly to the parts, 1 represents a case having substantially the form of a box elongated vertically and

formed above into a rounded dome 2. Within the interior of this case I provide a main frame-plate 3 of substantially rectangular form, which is rigidly supported in a vertical position by means of studs 4 which project inwardly from the rear wall 5. I provide a main shaft or arbor 6 which is disposed in a horizontal position, being rotatably mounted between the frame-plate 3 and the forward wall 7 of the case. (See Fig. 5.) Adjacent to the frame-plate 3 this shaft 6 carries rigidly a plurality of signal disks 8, the construction and operation of which will be more fully described hereinafter.

Arrangement is made for driving the shaft 6 so as to rotate the signal disks 8 continuously when the signal is in operation. For this purpose, upon the forward wall 7 at a suitable point and on the inner face thereof, a dished bracket 9 Fig. 5^a is attached, the same having substantially the form of a shallow cup with a flange 10 which is attached rigidly to the inner face of the wall as shown. In the wall 11 of this cup a motor shaft 12 is rotatably mounted, the rear extremity of said shaft being rotatably mounted in the rear wall 5 of the case; this shaft is in a horizontal position. Surrounding the shaft 12 near the bracket 9 I provide a spring barrel 13 and in which there is arranged a coil spring 14 similar to the main spring of a chronometer or clock. Upon the motor shaft 12 adjacent to the spring barrel, there is attached a gear wheel 15 which is adapted to be impelled to rotate by the spring 14 when the same is wound up. This gear wheel 15 meshes with another gear wheel 16 which is carried by a countershaft 17 disposed between the shaft 12 and the shaft 6. This gear wheel 16 meshes with a gear wheel 18 which is rigidly carried upon the shaft 6, and in this way the rotation of the gear wheel 15 is transmitted to the disks 8. In order to enable these disks 8 to rotate at a uniform velocity, I provide an escapement mechanism 19.

Referring now especially to Figs. 3 and 4, I provide an escapement wheel 20 which is rigidly attached to the shaft 6, and with this escapement wheel coöperates a verge 21, the said verge being actuated by a balance wheel 22 having a suitable hair spring 23. The arbors 24 and 25 of the verge and balance wheel are preferably mounted be-

tween small frame-plates 26 which are rigidly mounted on the studs 27, projecting in from the forward wall 7 of the case. It should be understood from this arrangement that the escapement mechanism, in connection with the motor, constitutes a clock-work for driving the disks 8 at a uniform speed, such as that observed in the hands of a clock. The disks 8 are preferably five in number. At the left, as viewed in Fig. 5, there are two blank disks 28; by blank disks I mean that they are simply disks of circular form having plane edges. At the right of these disks 28 there is arranged a disk 29, the function of which is to operate the signal every half-minute for a certain period of time. Beyond the disk 29 there is a blank disk 30, the purpose of which will appear more fully hereinafter, and beyond the disk 30 there is a disk 31, the function of which is to give a signal every half-minute, the said signal being of a predetermined character or code. On the side wall 32 of the case, at a point opposite to the disks 8, I mount a pair of brackets 33 connected by a horizontal guide bar 34. Upon this guide bar 34 two signal levers 35 and 36 are attached pivotally. These levers extend to a point over the disks 8 and are provided at their extremities with rollers 37 which rest upon the edges of these disks, as indicated most clearly in Figs. 2 and 5; in these figures, the signal levers are represented in a normal inoperative position, resting as they do upon the blank disks 28. From this arrangement, as will appear more fully hereinafter, a rotation of the disks 28 will not affect the levers so as to produce a signal.

The disks 29 and 31 referred to above are cam disks, their peripheries being of irregular form so that when they rotate, they could operate to displace a member resting on their peripheries; this is their function with respect to the levers 35 and 36. For this purpose I provide an arrangement for shifting the levers 35 and 36 bodily across the disks. This mechanism comprises a shifting bar 38, which is preferably provided at its middle portion with an offset rest 39, at which point it is provided together with the rest with upwardly projecting spurs 40 between which the levers 35 and 36 rest, as indicated. From this arrangement it should be understood that if the rack 38 is displaced longitudinally, it will operate to shift the levers 35 and 36 bodily in a lateral direction. In order to enable the levers to be shifted in this way from one extreme position to the other, the aforesaid guide bar 34 is preferably of substantially the same length as the combined width of the disks 8, as illustrated. The rear extremity of the shifting rack 38 is guided so as to move horizontally through an opening 41 formed

at a suitable point in the aforesaid frame-plate 3, and the forward extremity of this shifting rack is slidably mounted in a guide bracket 42 which is attached to the rear face of the forward wall 7 of the case, as indicated most clearly in Fig. 5. As shown also most clearly in this figure, the under side of the shifting rack 38 is formed with rack teeth 43 which cooperate with a segment 44. This segment is rigidly carried by a shaft 45 which is disposed horizontally in the upper portion of the case, having its remote extremity rotatably mounted in the wall 32, as shown most clearly in Fig. 3. Adjacent to the segment 44 a supporting bracket 46 is arranged, which constitutes a bearing for the shaft 45, being attached rigidly to the rear side of the forward wall 7 of the case. Beyond the bracket 46 a second bevel gear segment 47 is arranged and this segment meshes with a corresponding segment 48, the said segment 48 being rigid with a stub shaft 49 carrying a rigid handle 50, the said handle being disposed on the outer side of the case at the forward side thereof. In this connection, it should be stated that the stub shaft 49 passes through a suitable opening in the wall 7 for this purpose.

As indicated most clearly in Fig. 1, the handle 50 constitutes a pointer for a dial 51, the said dial being formed on the forward face of the case near the dome 2. This dial 51 presents preferably four marks or symbols, the first bearing the word "Off" and this position of the handle renders the mechanism inoperative. Beyond this point the letter "W" is placed and when the handle is in this position the whistle or siren will be operated automatically. Beyond the "W" there is a "B" which indicates the position for the handle or dial pointer when the bell is to be rung, and beyond this "B" there is the word "Tow"; when the dial or handle 50 is opposite the word "Tow" the mechanism will operate to give automatically the signal which indicates that the ship is towing a second craft.

As stated above, when the handle 50 is in the "off" position, the mechanism is inoperative. This effect is produced by means of a ratchet wheel 52 the teeth of which cooperate with a pawl 53, the said pawl being preferably formed integrally upon the aforesaid bevel gear segment 48; this mechanism is shown most clearly in Fig. 4, the same being shown in the "off" position. However, by rotating the handle 50 upwardly, the pawl 53 will be disengaged from the ratchet wheel 52 so that the motor spring 14 will begin to drive the signal disks 8. The character of the signal which will be given by these disks will, of course, depend upon the point at which the handle or pointer 50 of the dial is brought to rest.

If the pointer or handle 50 is brought to the position of the letter "W" and left in this position, the shifting rack 38 will operate to shift the signal levers 35 and 36 through a distance laterally equal to the width of one of the disks. In this way the lever 36 will be brought over the cam disk 29. The lever 35 will then operate on the right hand blank disk 28 and will hence be unaffected by the mechanism.

The cam disk 29 is formed on its periphery with a projection or tooth 54 such as that illustrated in Fig. 2, and this tooth presents an inclined forward face 55 which operates to raise the roller 37 carried by the lever 36, moving the lever up to a slightly elevated position, as will be readily understood. The character of the signal given by this disk may be anything desired, but I prefer that the signal shall give a continuous sound extending over a period of six seconds, and that the signal shall be operated every half-minute. If the handle or pointer 50 is stopped at the point marked "B" on the dial, the levers 35 and 36 will be shifted through a space equivalent to the width of two disks, so as to bring the lever 35 over the disk 29. Under these circumstances, the bell will be operated instead of the whistle. In this connection, it should be stated that a whistle cord 56 is provided which is attached to the under side of the lever 36, while a bell cord 57 is supplied, the same being attached to the under side of the lever 35. The manner in which these cords operate their respective devices will be described more fully hereinafter. When the lever 35 is resting over the cam disk 29, it will be understood that the lever 36 is resting upon the blank disk 30, so that this latter lever will not be affected by the movement of the mechanism. In this way I am enabled to operate the bell without the whistle, or vice versa. If the handle or pointer 50 is thrown over to the position "tow" which corresponds to the extreme position for the levers 35 and 36, the lever 36 will then rest upon and be actuated by the cam disk 31, the lever 35 then running on the blank 30; with this arrangement, the lever 35 will, of course, be unaffected by the movement of the mechanism, while the disk 31 will actuate the lever 36 so as to give the conventional signal indicating a tow. For this purpose, the disk 31 will have its periphery provided with suitable teeth 58 which will operate to give the usual one-long and two-short blows of the whistle, and I prefer to arrange the mechanism so that a signal is given every half-minute.

In the rear portion of the case 1, behind the frame-plate 3, I provide a mechanism which is operated both by hand and automatically. This mechanism will be described more fully hereinafter. It operates

only upon the whistle or the siren. For this purpose, a whistle cord 60 runs downwardly therefrom in the case in substantially the same manner as the cords 56 and 57 referred to above.

Referring especially to Fig. 2, the whistle cords 56 and 60 have their lower extremities pass around guide pulleys 61 and 62, and these cords converge beyond these pulleys and attach to a main whistle cord 63; from this arrangement, the whistle cords 56 and 60 constitute branches from the main cord, either of which may operate to pull the main cord, as will be readily understood. This main cord 63 passes downwardly between guide pulleys 64 arranged adjacent to each other, as shown, and beneath this point I provide mechanism for enabling the cord to operate upon the ordinary whistle or upon a siren. For this purpose I provide a rocker or rocking-plate 65 which is of substantially rectangular form and pivoted near its lower edge and on its central axis upon a suitable stud 66. The principal portion of the body of this rocker is cut away by an opening 67 so that it presents at its upper edge a longitudinally disposed guide bar 68. Upon this guide bar there is slidably mounted a ring or collar 69, which collar may occupy an extreme position at either end of the rocker, as will be readily understood. From the lower edge of the rocker 65 at one extremity thereof, a whistle cord 70 leads to a common whistle (not shown), and at the opposite extremity a siren cord 71 is attached which leads to the siren (not shown) which the ship is supposed to carry. At a suitable point just above the rocker 65, I provide a pair of transverse horizontal guide bars 72, as indicated most clearly in Fig. 5^a. These guide bars are arranged parallel and their extremities are securely attached to the side walls of the case as indicated. Near their middle points the guide bars 72 are provided with longitudinally disposed slots 73 and these slots afford means for guiding a slidable shoe 74, the construction of which is shown very clearly in Fig. 7. This shoe comprises a pair of oppositely disposed end plates 75 between which pulleys or rollers 76 are rotatably mounted, and on the outer sides of the plates 75, gudgeons 77 are arranged, which run in and project beyond the aforesaid slots 73. One of these gudgeons 77 is engaged by the forked extremity of a rocker lever 78, the said lever being rigidly carried by a shaft or spindle 79 which is arranged parallel with the stud or spindle 66, passing, however, through the opening 67 formed in the rocker 65.

To the outer extremity of the shaft 79 which projects through the forward wall 7 of the case, I attach a handle 80 which enables the lever 78 to be shifted from one side to the other, as desired. Upon the outer

face of the case adjacent to the handle 80, a partial dial 81 is formed, having two divisions, one of which is marked "Whistle" and the other marked "Siren", the said marks corresponding to the two extreme positions for the handle, which positions correspond, as stated above, to the two extreme positions for the lever 78; thus, when the lever 78 occupies the position shown, the signal mechanism will operate the ordinary whistle; if thrown to the opposite position, the mechanism would then operate the siren. This mode of operation is made possible by passing the main whistle cord 63 between the guide rollers or pulleys 76 and attaching the same to the ring 69 referred to above. From this arrangement it will be seen that when the shoe 74 occupies the position shown in Fig. 2, a pull upon the cord 63 will operate to raise the left extremity of the rocker-plate 65, in this way operating the whistle cord 70; in so doing, the siren cord 71 will be slackened so the siren will not be affected thereby. When the lever 78 occupies its other extreme position so as to hold the shoe 74 at the opposite ends of the slots 73, a pull upon the main cord 63 would operate to raise the right extremity of the rocker 65, which would pull upon the siren cord 71 and affect the siren without affecting the whistle controlled by the cord 70. In this way the rocker plate 65 constitutes a switch.

I provide mechanism shown more particularly at the right of Fig. 5 for giving signals of a kind used for indicating the ship's course in order to prevent danger of collision. This mechanism I will now describe.

Between the rear wall 5 of the case and the main frame-plate 3 in the upper portion of the case, I mount a shaft or spindle 82. Near its middle point, this shaft carries rigidly a ratchet wheel 83 and near its inner extremity it carries also rigidly a gear wheel 84. This gear wheel 84 meshes with a second gear wheel 85 which is carried by a disk shaft 86, the said shaft being rotatably mounted below the shaft 82 as indicated. This shaft 86 carries rigidly a cam or cam disk 87 which operates to give automatic signals in a manner which will be described more fully hereinafter. Beyond the cam 87 the shaft 86 carries an escapement wheel 88 which coöperates with other escapement mechanism 89 including a balance wheel 90, and a hair spring 91 having the usual verge 92 coöperating therewith. To the side wall 93 of the case I opposite the cam 87, I attach a bracket 94, at which there is pivotally supported a whistle lever 95 and this lever extends to a point over the cam 87, carrying a roller 96 adapted to coöperate with the said cam, as indicated in Fig. 8. To the under side of this lever 95, the aforesaid cord 60 attaches, as indicated in Fig. 2.

I provide a main lever 97 Fig. 5 having a

forked lower extremity presenting bars 98, the extremities of said bars being loosely mounted on the shaft 82 lying on the opposite sides of the aforesaid ratchet wheel 83. Between the bars 98 a pawl 99 is pivotally mounted, which pawl coöperates with the teeth of the ratchet wheel, for a purpose which will be described hereinafter, being maintained in engagement with these teeth by means of a leaf spring 100, as shown most clearly in Fig. 2. From inspection of this figure, it will be seen that the pawl 99 is curved in form, presenting substantially the outline of the rudimentary "S." To the main lever 97 a helical spring 101 is attached, as indicated in Fig. 2, the opposite extremity of the spring being anchored on the under side of the dome 2 near the side wall 32 of the case. This spring preferably is attached to one of the bars or forks 98 of the lever.

Loosely mounted upon the rear extremity of the shaft 82 I provide a handle 103, which handle has a hub 104 which is loosely mounted in an enlarged opening in the rear wall 5 of the case. Beyond this opening, the hub 104 has rigid therewith an arm 105 which lies adjacent to the handle 103 but on the inner side of the case, as indicated. At its upper extremity, the arm 105 is formed with a laterally projecting finger or dog 106, and this dog projects across the edge of the main lever 97 in such a manner as to enable this lever to be operated thereby, as will be readily understood.

The handle 103 affords means for setting the lever 97 over toward the right for the purpose of effecting the automatic pulling of the whistle. In this connection attention is called to the fact that the teeth of the ratchet wheel 83 project at the upper edge of the wheel toward the right. When the handle 103 is moved toward the right the lever 97 moves correspondingly in the same direction and the pawl 99 slips over the ratchet teeth until it reaches a position at the right of the position which it normally occupies. The spring 101 by such a movement as this is placed in tension and through the medium of the pawl 99 it tends to rotate the ratchet wheel 83 and the gear train 84, 85 so as to drive the cam 87. The escapement mechanism, however, which is in connection with the shaft 86 influences the return movement of the lever so as to make the same uniform and gradual. In this way the spring 101 is made to rotate the cam 87. As this cam rotates its irregular edge 107 operates to raise the whistle lever 95. Evidently when the lever is raised it operates to pull the cord 60 which actuates either the whistle or the siren.

I provide an arrangement for indicating to the operator of the signal how far he should push the lever 103 so as to obtain

one, two or three blasts of the whistle. For this purpose to the pawl 99 I attach a bell hammer 108 and this bell hammer is arranged so as to lie adjacent to the surface of the bell 109, said bell being rigidly attached to the upper portion of the lever 97. The arrangement is such that when the lever 97 is being set over as described above, the inclined faces of the teeth of the ratchet wheel 83 operate to raise the lower end of the pawl, and as the pawl is thrown back into engagement with the next notch in the wheel by means of its spring 100, the bell hammer 108 strikes the bell 109 so as to give a single sound or stroke. There is a definite angular relation existing between the ratchet wheel 83 and the cam 87 such that if the lever 97 is moved over sufficiently to engage the next adjacent tooth, the cam 87 will then be advanced sufficiently to produce one blast of the whistle. From this arrangement as the operator moves over the lever the bell 109 indicates the point where he should arrest its movement. Thus, two strokes of the bell indicate that two blasts will be given upon the return. In addition to the arrangement comprising the bell 109 for indicating the point to which the handle 103 should be moved, I also provide indications or marks 110 which are on the forward wall of the case on its outer side and constitute a continuation of the aforesaid dial 51. From the forward side of the handle 103, a pointer 111 extends forwardly, the same having a tip 112 which is bent down over the forward edge of the case so as to cooperate with the numerals of the scale or dial 110. If the handle 103 is moved to the right sufficiently to bring the pointer opposite the mark 2, there will then be two blasts of the whistle blown as the handle returns, said handle of course being returned by the spring 101.

I provide an arrangement whereby the handle 103 may operate to blow the whistle directly and without drawing the mechanism just described into operation. For this purpose, I provide a bell crank lever 113 which is loosely mounted on the shaft 82 adjacent to the arm 105. This bell crank lever has an arm which extends upwardly and projects across the side of the finger 106 as shown most clearly in Figs. 2 and 5, and it is provided also with a second arm 114 which extends downwardly inclining to the right as shown in Fig. 2. This arm 114 terminates in a laterally projecting finger 115 which projects across the lower edge of the whistle lever 95. From this arrangement evidently by moving the handle 103 toward the left, the finger 106 will displace the bell crank lever 113 so as to elevate the finger 115. In this way the lever 95 can be raised when desired and as long as it is held up the whistle will blow. In this way the same handle 103 which sets the

automatic mechanism in operation controls as well the manual pulling of the whistle cord.

While I prefer to use a motor operated by a spring such as the spring 14, described above, in practice it may be found advisable to use a motor of another description. In any case the motor would have a connection with an escapement, or other means for enabling it to run at a uniform rate. When I employ a spring motor I provide an arrangement for giving an alarm when the same is run down. For this purpose, referring especially to Fig. 2, I provide the spring barrel 13 with an opening 116. Pivotaly attached at 117 to the gear wheel 15, I provide a short clip or plate 118 which is preferably bent slightly as shown so that its tip rests against the inner face of the spring barrel. This plate is arranged so that when the spring 14 becomes uncoiled it will engage the same and force it outwardly. The movement of this plate affords means for actuating an alarm bell 120, which is rigidly attached at a suitable point on the rear face of the gear wheel 15, as indicated most clearly in Fig. 3. The connection between the plate 119 and the bell, includes a cord 121, which leads to the bell for actuating the same as will be readily understood. The extremity of this cord is attached to a pin 122, which projects through a slot 123 which slot is formed in the gear 15, as indicated in Fig. 2. From this arrangement when the spring 14 is run down the plate 119 will be displaced so as to pull the cord 121 and ring the bell.

In order to enable access to be had to the forward extremity of the motor shaft 12 for winding the same, the forward side of the case 1 comprises a door 124 which is preferably mounted on hinges 125 enabling the same to be opened as will be readily understood. This door is located just at the aforesaid bracket 11.

The bell which is actuated by the cord 57 is illustrated in Fig. 6. This bell is intended to give a succession of rapid strokes or jangle when the bell cord is released. For this purpose, I provide a case 126 which is attached at a convenient point. Within this case a clapper 127 is mounted pivotally at 128, said clapper comprising a stem which projects through an opening 129 in the casing and carries a head 130 adapted to strike a suitably placed bell 131. The clapper 127 is pivoted at or near its middle point and to its rear extension there is attached a counterweight 132. On opposite sides of the stem of the clapper, leaf springs 133 are arranged, the same being preferably curved and lying opposite each other in such a way as to operate to return the clapper when the clapper strikes them and moves them to one side. The rear ex-

tension of the clapper is engaged by a lever 134 which is pivoted to the case at 135, said lever having an arm which projects out of the case as indicated, and to this arm the aforesaid bell cord 57 is attached. A spring 136 is attached to the inner arm of the lever 134 and constrains its extremity, which is bent as indicated at 137 so that said extremity or tip is constantly held against the clapper. From this arrangement if the cord 57 be pulled to the right according to Fig. 6 and suddenly released the clapper will be made to vibrate back and forth a number of times between the springs 133; being first thrown by one spring against the opposite spring and then thrown back by the latter. This is because the spring 136 in consequence of the sudden release of the cord 57 forces the extremity 137 of the lever 134 against the upper portion of the clapper and the swinging head 130 of the clapper is thus hurled toward the left according to Fig. 6 striking one of the springs 133. These springs bend and by its reaction throws the clapper violently against the other spring 133. This vibration of the clapper causes its head 130 to strike against the bell 131 again and again in rapid succession so as to produce a chiming sound.

The mode of operation of the mechanism will now be reviewed: When the handle or pointer 50 is occupying the off position as indicated in Fig. 1, the automatic mechanism in the forward portion of the case is at rest; and when the handle is in this position the pawl 53 is in engagement with the teeth of the ratchet wheel 52 so as to lock the motor against running down. Immediately upon the removal of the pawl with the rotation of the handle, the motor begins to drive the signal disks 8. The movement of the handle will be arrested either at the points "W," "B" or "Tow". This movement of the handle 50 will operate to move the shifting bar 38 laterally so as to bring either of the levers 35 or 36 into engagement with one of the cam disks. In this way, the cam disk 29 may be made to operate either of the levers, and the cam disk 31 may operate the lever 36. The character of the movement produced by the rotation of these cams has been fully described hereinabove. They operate to pull the cords 56 or 57. The cord 56 may actuate an ordinary steam whistle or a siren. In Fig. 2, which corresponds to the relation shown in Fig. 1, when the pointer 80 is thrown toward the left, the ordinary whistle will be operated.

When the pointer 80 is thrown to its opposite position, the ring 69 is moved to the opposite extremity of the rocker 65 by means of the lever 78, and the cord 56 will then operate to pull the siren cord 71 instead of the whistle cord 70. By moving the handle 103 toward the right the spring 101 will be extended and through the medium of the pawl 99 this spring will operate to rotate the ratchet wheel 83, the rotation being transmitted down to the gears 84 and 85 and to the cam or cam disk 87. In rotating, this disk 87 will operate to raise the whistle lever 95 periodically, so as to blow a number of blasts of the whistle through the medium of the whistle cord 60, which connects with the main cord 63, which cord 63 is also actuated by another branch cord 56. As the handle 103 is moved over, the pawl 99 strikes the plate 109 with its hammer 108 so as to indicate the number of blasts of the whistle which will follow upon the release of the handle. The number of blasts is also indicated at the dial 110. If the handle 103 is moved to the left instead of to the right it actuates the lever 95 directly through the medium of the bell crank lever 113. By means of the alarm bell 120 and the contacting plate 119, an automatic alarm is given when the spring of the motor is about run down.

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

1. In combination, a lever, a signal device connected therewith, a second lever, a second signal device connected with said second lever, a cam, means for driving said cam, means for shifting said levers to engage said cam, and automatic means for starting said cam to rotate when the levers are shifted.

2. In combination, a lever, a signal device connected therewith, a second lever, a second signal device connected with said second lever, a cam, means for shifting said levers to engage said cam, mechanism for driving said cam, means for normally holding said mechanism idle, and automatic means for releasing said mechanism when said levers are shifted.

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

GEORGE EDWARD LANE.

Witnesses:

F. D. AMMEN,
JNO. M. RITTER.