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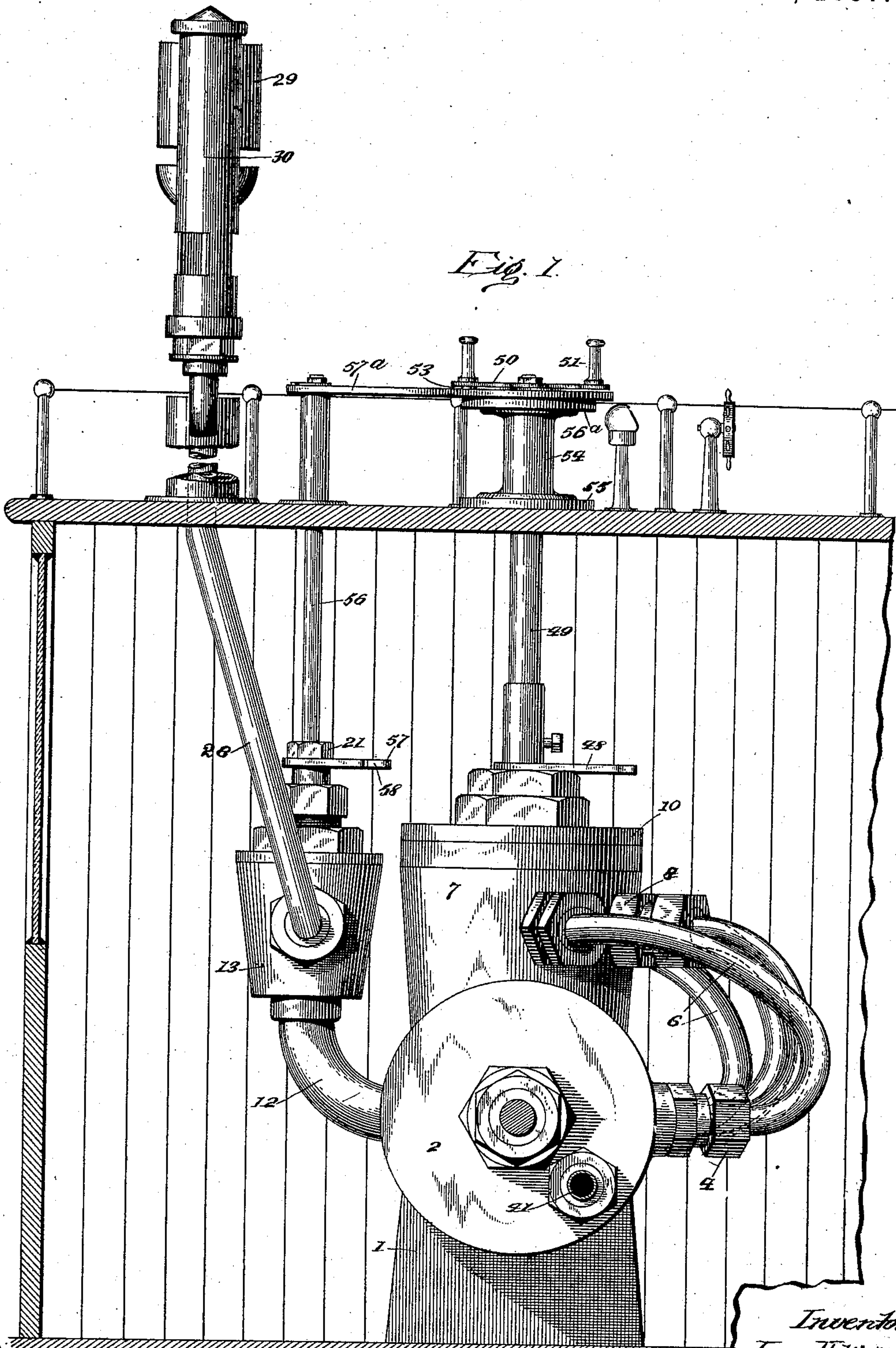
3 Sheets—Sheet 1.

J. H. WALKER.
MARINE SIGNALING APPARATUS.

No. 577,088.

Patented Feb. 16, 1897.

Fig. 1.



Witnesses:
Thos. H. Hatchel.
J. Ross of house.

Inventor:
James H. Walker.
By Benjamin
Attorney.

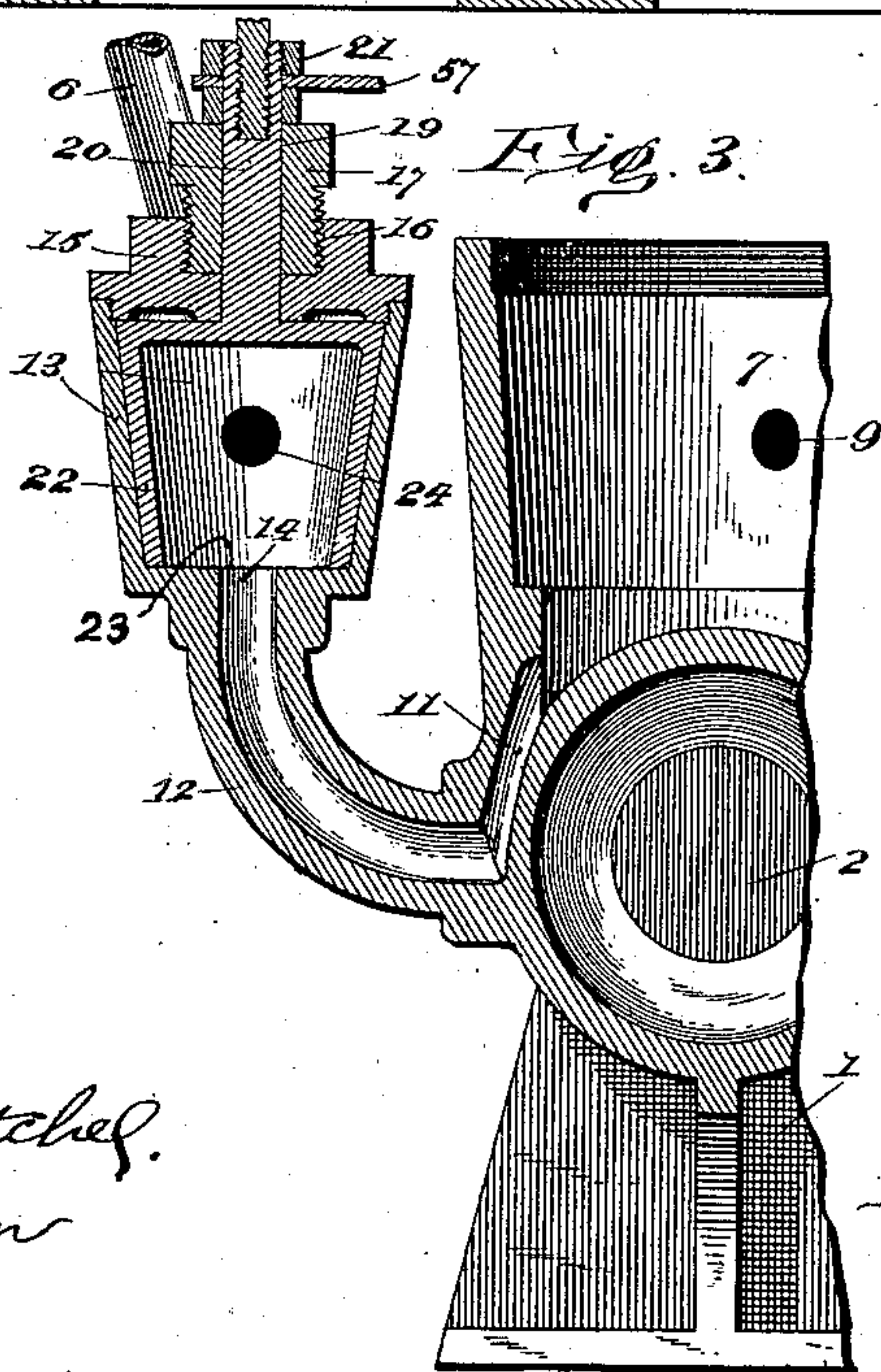
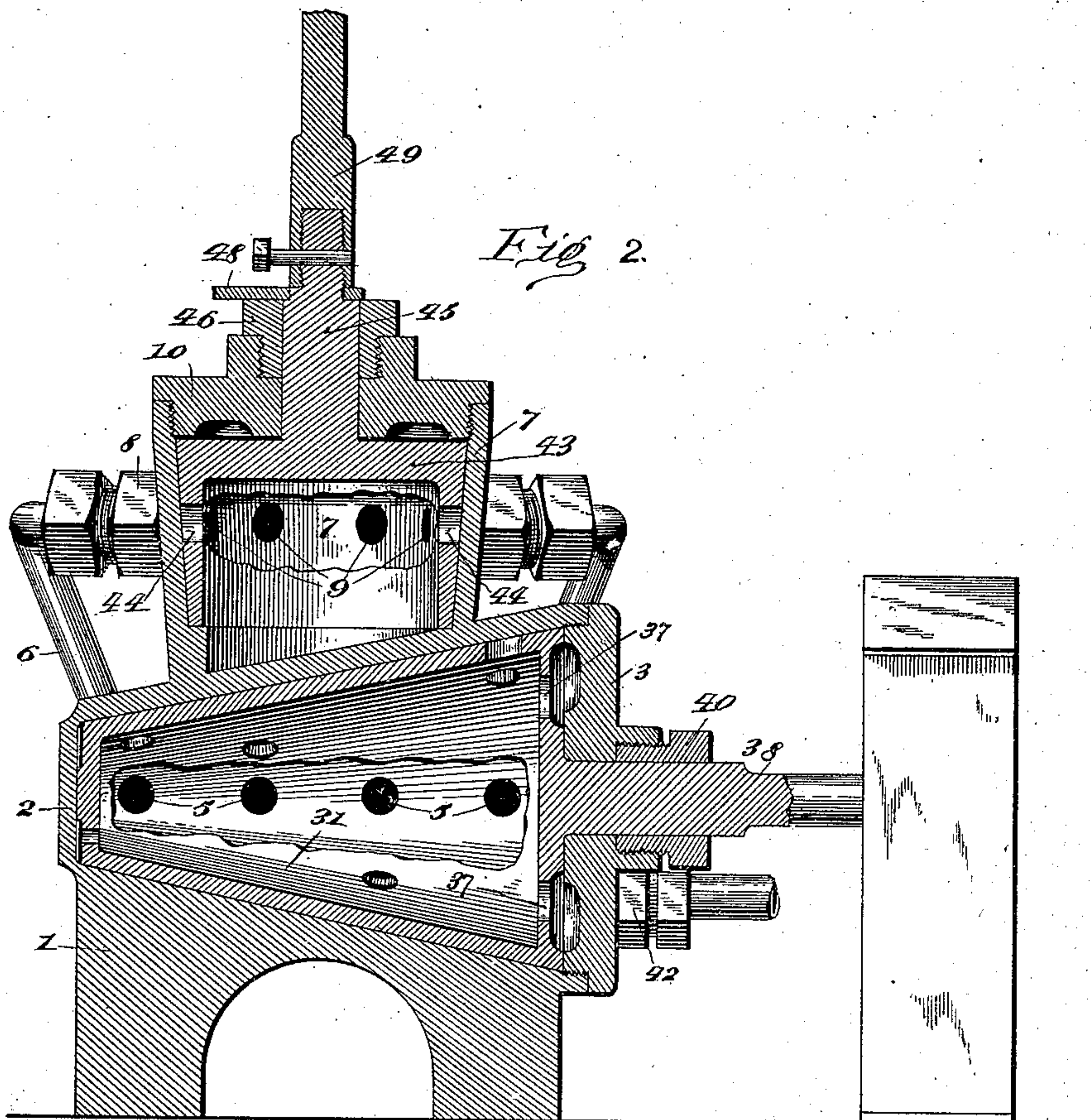
(No Model.)

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J. H. WALKER.
MARINE SIGNALING APPARATUS.

No. 577,088.

Patented Feb. 16, 1897.



Witnesses:
Theo. L. Gatchel.
Jess. L. Gatchel.

Inventor:
James H. Walker.
By *A. Benjamin.*
Attorney.

(No Model.)

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J. H. WALKER.
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Fig. 4.

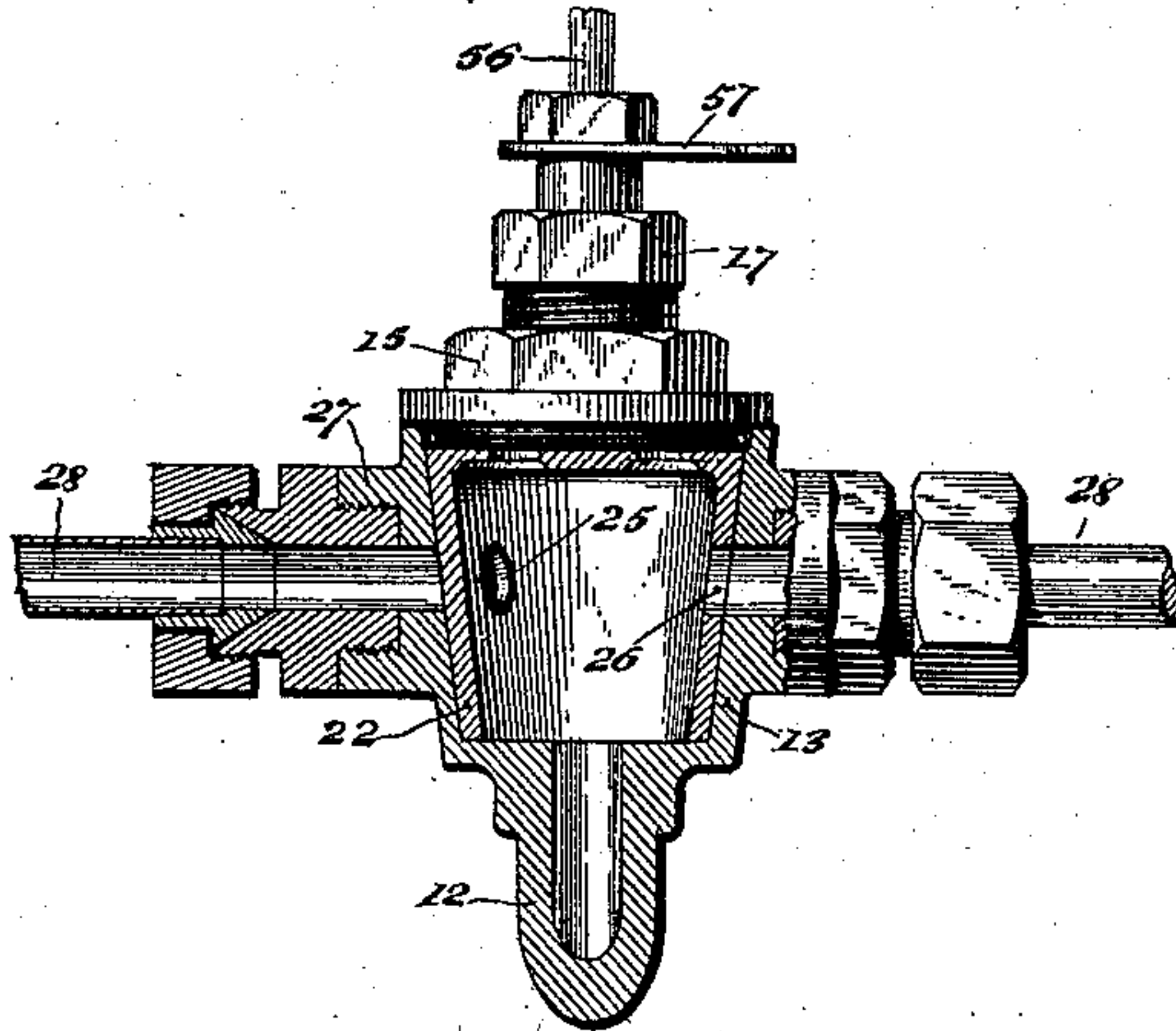


Fig. 5.

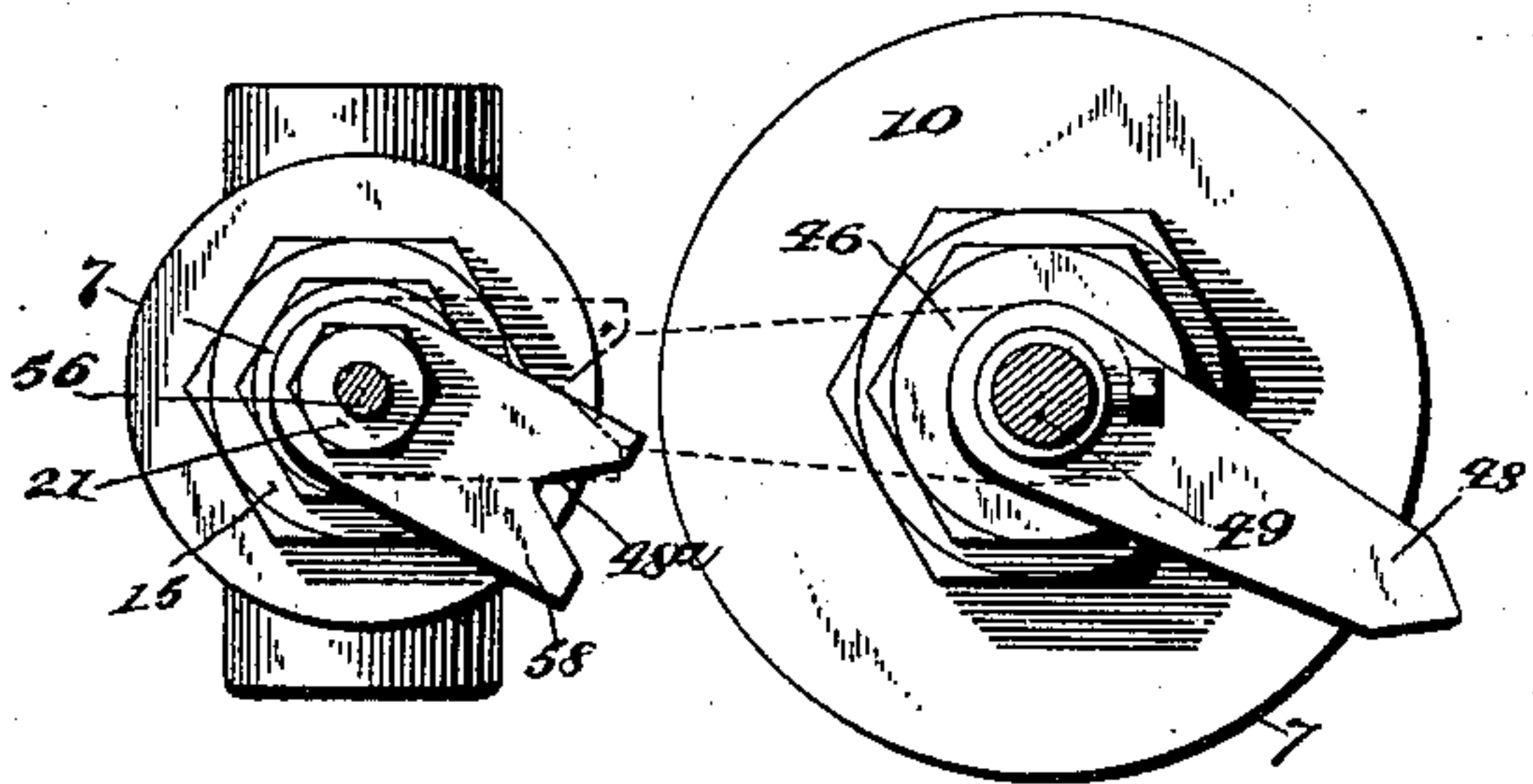


Fig. 6.

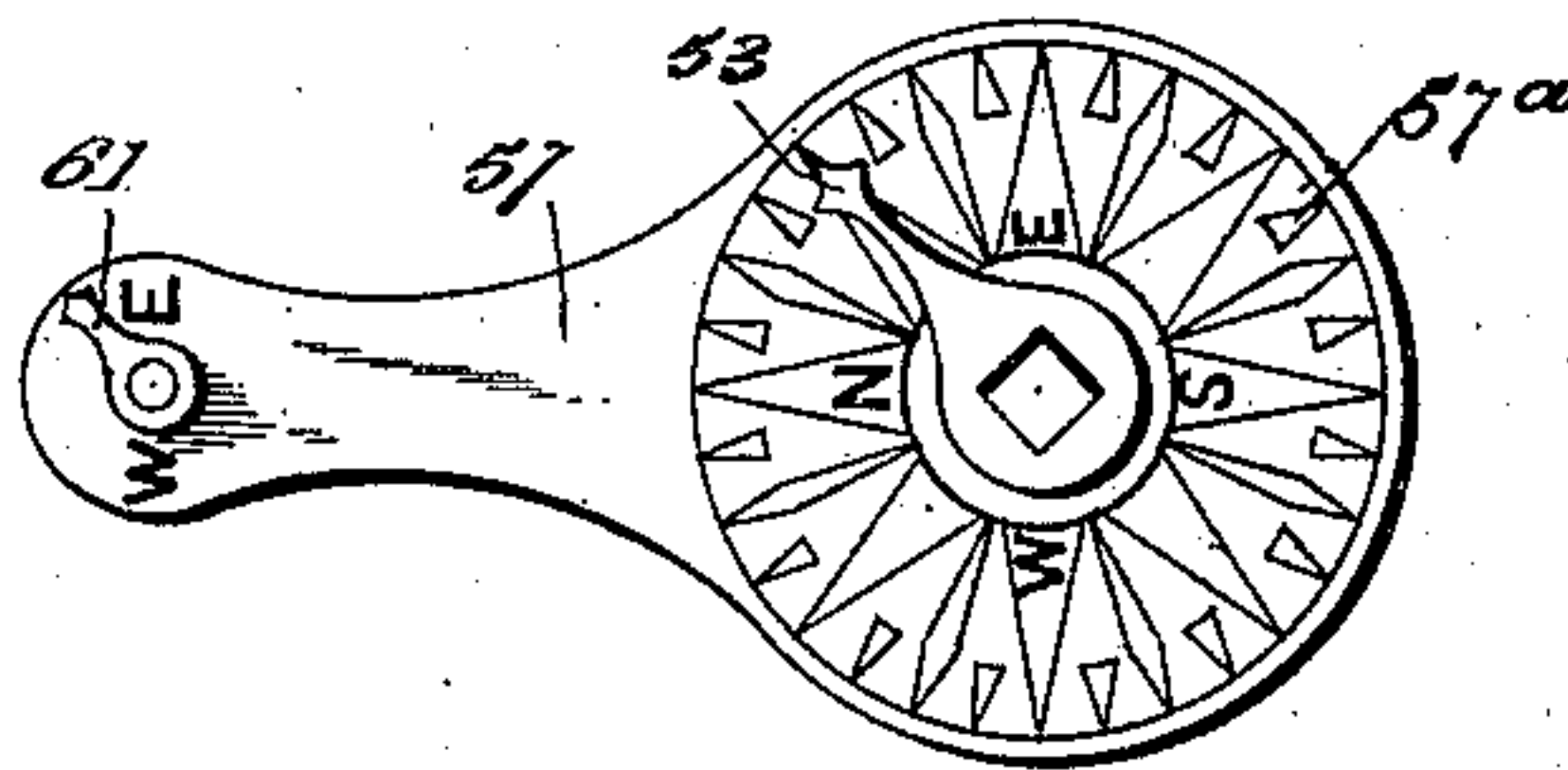
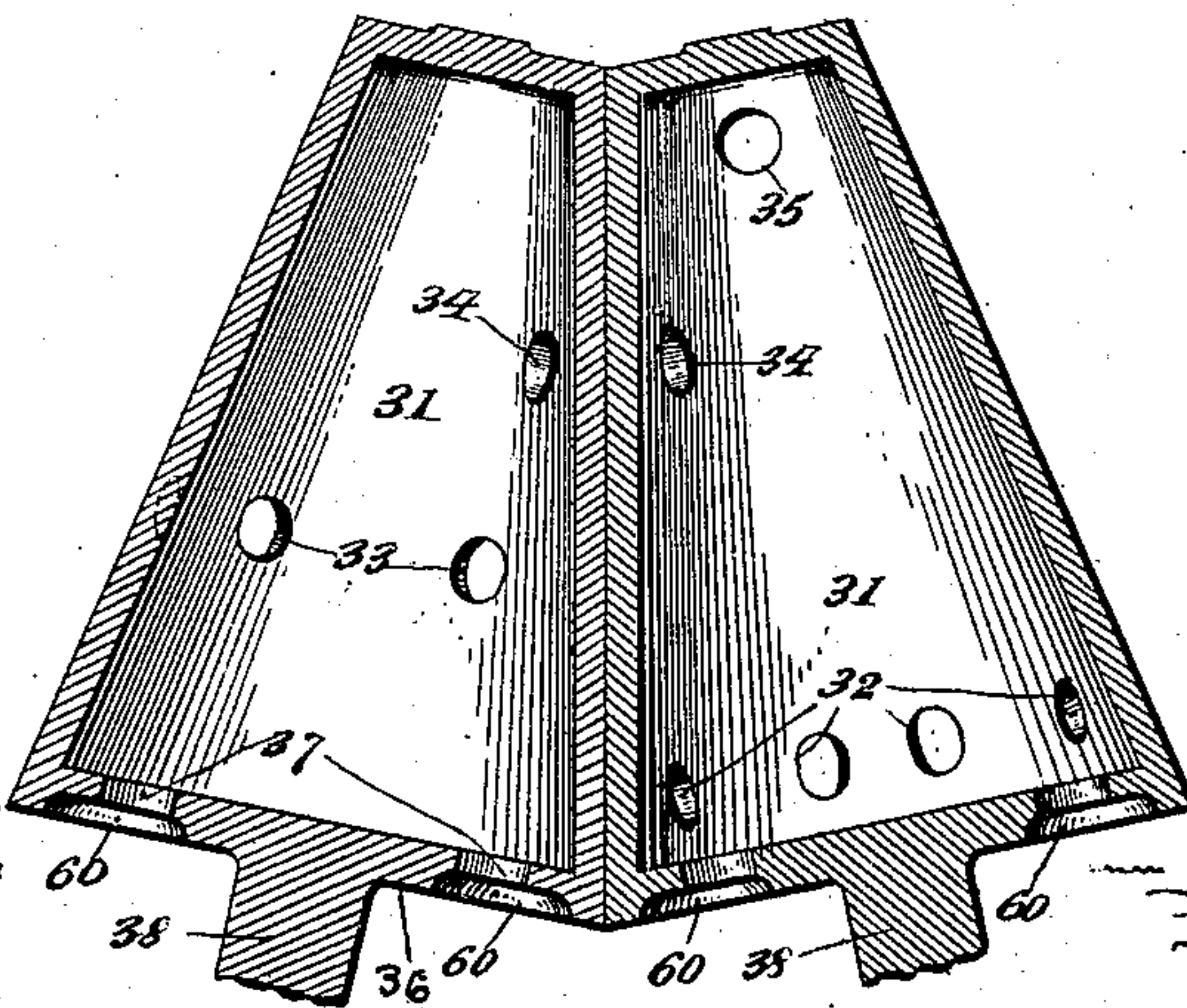


Fig. 7.



Witnesses:
Thos. L. Gatch.
J. Ross Lohman

Inventor:
James H. Walker.
By J. Benjamin
Attorney.

UNITED STATES PATENT OFFICE.

JAMES HENRY WALKER, OF HARTLEPOOL, ENGLAND.

MARINE SIGNALING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 577,088, dated February 16, 1897.

Application filed April 2, 1896. Serial No. 585,980. (No model.)

To all whom it may concern:

Be it known that I, JAMES HENRY WALKER, a subject of the Queen of Great Britain, residing at Hartlepool, county of Durham, England, have invented certain new and useful Improvements in Marine Signals; and I 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.

My invention relates to improvements in steam or air whistles and their operating mechanism, and especially to that class which is used as fog-signals on steam or sailing vessels, where it is important to provide regularity and certainty in the blowing of the whistle to indicate the position of the vessel and the direction of the movement of the same.

The object of my invention is to provide whistles of different tones and an apparatus for operating same with steam or air to be supplied from a steam-boiler or from a bellows or air-chamber by means of clockwork or weights or other suitable means which would secure a constant supply of the pressure medium when needed, said apparatus being so constructed and arranged that its operation is mechanically accurate and controlled by the wheelman or by an operator, using the course of the vessel as a guide in directing the mechanism employed.

With a code of signals provided my invention will enable seamen to determine the position and course of approaching vessels in the densest fogs, and thus disastrous collisions may be averted.

In the drawings forming a part of this application, Figure 1 is a rear view of my improved fog signaling apparatus. Fig. 2 is a vertical sectional view of the main cylinders and their connections. Fig. 3 is a vertical sectional view of the auxiliary cylinder. Fig. 4 is a vertical sectional view of the auxiliary cylinder on a line at right angles with the view shown in Fig. 3. Figs. 5 and 6 are details; and Fig. 7 is an interior view of the main plug or shell, the same being divided vertically for the better illustration of the location of the ports.

Like reference-numerals indicate like parts in the several views.

My improved signaling apparatus is supported by a standard or base 1, by means of which it is bolted or otherwise secured to the deck of a vessel, preferably under the wheel-house. Resting on the base 1 or formed as a part thereof is a horizontal truncated cone 2, having its base open and provided with threads on the inside of the rim for the reception of the threaded cap 3. Along one side of the cone 2 are four ports 5, which extend through the bosses or projections 4, each of which communicates with a pipe 6, steam or air tight connections being made between said bosses and said pipes.

On the upper side of the cone 2 is a vertical circular chamber 7, having its lower diameter slightly less than its upper and provided with four ports 9, which communicate with a corresponding number of bosses 8, with which the pipes 6 from the cone 2 communicate by steam-tight connections. The upper portion of the chamber 7 is interiorly threaded for the reception of a screw-cap 10, which is centrally perforated for a purpose which will be explained. In the lower portion of the chamber 7 is an opening 11, which communicates with a pipe-elbow 12, to the upper end of which is coupled the chamber 13, having a central opening 14 in its bottom, with which the pipe 12 communicates. Said chamber is open at the top and has its rim threaded on the inside to receive a screw-cap 15. Said cap is provided with a central recess 16, which is threaded to receive a plug 17, having a central opening 19, which serves as a bearing for the stem 20, which also passes through an opening in the cap 15.

On the upper end of the stem 20 is carried a nut 21, and on the lower end a hollow plug 22, having a vertical central opening 23 and radial ports 24, which when the plug is revolved register consecutively with the openings 25 and 26 on the opposite sides of the chamber 13, as shown in Fig. 4. From the openings 25 and 26 and formed as parts of the chamber 13 extend bosses 27, which connect with the pipes 28, which lead, respectively, to the whistles 29 and 30, the former being preferably shrill or sharp toned and the latter heavy or deep toned.

Fitting within the truncated cone 2 and conforming in shape thereto is the shell 31, hav-

ing at different points in its side openings 32, 33, 34, and 35, said openings being so placed as to register consecutively with the ports 5 in the cone when the shell is revolved.

5 In the annular depression 60 in the base 36 of the shell 31 are openings 37, which are concentric with a shaft 38, which extends outwardly from the center of the shell 31, passes through the center of the cap 3 and plug 40, 10 and communicates with any suitable driving power.

In the cap 3 near its rim is an opening 41, threaded for the reception of the coupling 42, to which is secured the supply-pipe conveying steam or air to the apparatus. 15

Fitting within the chamber 7 is the open plug 43, having at opposite points in its side ports 44. From the center of the plug 43, formed therewith and extending upwardly, is 20 a shaft 45, which passes through the screw-cap 10 and through the jam-nut 46 on the top of said cap, the upper end of said shaft being threaded to carry an extension 49, which runs through and above the upper deck of the vessel. Keyed or otherwise secured on the shaft 25 45, between the jam-nut 46 and the extension-stem 49, is a tripper 48, the outer end of which is pointed, as shown in Fig. 5. Mounted on the extension-stem 49, near its upper end, is 30 a wheel 50, having hand-pins 51, by means of which it may be turned and operate the shafts 45 and 49. Below the wheel 50 and surrounding the shaft 49 is the spool 54, the bottom flange of which is secured to the deck, and to 35 the upper flange 56 is secured the dial-plate 57^a, having indicated on its face the different points of the compass. Above said dial-plate and mounted on a squared portion of the stem 49 is the index-finger or pointer 53. 40 The outer end of the plate 57 is perforated to admit the upper end of the rod 56, the lower end of which is coupled to the stem 20 by means of the nut 21, as shown in Fig. 3. Below this nut and keyed to the stem 20 is 45 a catch 57, having its outer end notched, as at 58, said catch being mounted so as to bring it directly opposite the tripper 48, the pointed end of which engages the notched end of the catch as the tripper revolves. On the upper 50 end of the stem 56 is a pointer 61, which moves on the face of the outer end of the plate 57, upon which are indicated the points of the compass.

The operation of my apparatus is as follows: Steam or air under pressure is admitted 55 to the apparatus through the opening 41 in the cap 3 and passes through the ports 37 into the shell 31. This shell is revolved by means of a spring-motor or other suitable power, which is preferably independent of the power 60 used for driving the vessel. The officer in charge of the whistle is stationed at the wheel 50, and his manipulation of this wheel is governed by the course that the vessel is steered. 65 A code of whistle-signals to indicate the vessel's course is in force. If the vessel is headed north northeast and the code provides for

blowing two shrill blasts to indicate to approaching vessels such course, the officer in charge will turn the wheel 50 until the pointer 70 53 registers with that course on the dial 57^a. As wheel 50 is fast on the shaft 49 the latter must turn with it and revolve the plug 7, to which it is secured, so that one of the ports 9 will register with the upper end of the pipe 75 6, which registers at its lower end with the two ports 5 in the shell 31. At each revolution of the shell 31 two blasts will be blown, provided the ports leading to the whistle are not blanked. Said ports are controlled as follows: The tripper 48 is placed on the shaft 49 in position to engage the catch 57 on the shaft 56 and throw it to the right or the left, as the 80 pointer 53 is moved to points east or west, respectively. The catch 57 being keyed to the rod or shaft 56, the latter turns with it and revolves the plug or shell 22, thus causing one of the ports in said shell to register with one of the pipes leading to the whistles. If 85 the catch is thrown so as to open the port leading to the shrill whistle and the vessel's course is changed to west, the wheel 50 is reversed, and thus the tripper is carried reversely to its first movement, reengages the catch 57, and throws it in a position opposite 90 to its first position, and thereby registers a port in the plug 22 with the pipe leading to the dull or heavy whistle. It will thus be seen that the parts 50, 49, and 7 do not revolve, but oscillate. 100

It will be understood that my apparatus provides for eight signals, four on an easterly course and four on a westerly course. It is of course designed for use in connection with an established code similar to the one now in 105 use. It will also be apparent that the apparatus may be used for other than marine purposes, and that the number of ports in the shell may be multiplied, and that more than two whistles may be used without any alteration of the arrangement of parts herein described or modification of the principles involved in my invention. 110

Having thus described my invention, what I claim as new, and desire to secure by Letters 115 Patent, is—

1. In a signaling apparatus the combination with a suitable base, of a cone-shaped chamber provided with openings for the admission and emission of air or steam, a hollow shell or plug fitting within said chamber and provided with openings registering with the openings in the chamber as the plug is revolved, a hollow circular chamber formed with or secured to said cone-shaped chamber, 120 a series of pipes communicating with the openings in said chamber and the circular chamber respectively, a hollow plug fitting within said circular chamber and having ports in the side thereof and provided with a stem by means of which it may be revolved, a smaller 130 auxiliary chamber connected with said circular chamber by a pipe, a hollow plug fitting said auxiliary chamber and provided with a

stem for turning same, means for operating the various plugs described, and a sound-producing device connected with said auxiliary chamber and operable by means of air or steam under pressure, for the purposes set forth.

2. In a signaling apparatus, the combination with a suitable support of a series of chambers having steam or air passages therein hollow plugs fitting said chambers and having openings registering with the openings in their respective chambers as said plugs are revolved, pipes connecting said chambers with each other, means for revolving said plugs and a sound-producing device connected with one of said chambers and operable by means of air or steam passing through said chambers, plugs and pipes substantially in the manner and for the purposes described.

3. In a signaling apparatus, the combination with a suitable base, of a cone-shaped chamber having in its base an inlet-opening and in its side a series of outlet-openings, a hollow plug fitting said chamber, having a series of openings in its side and other openings in one end, and provided with a stem for revolving said plug upon the application of suitable power thereto, a hollow circular chamber on one side of the cone-shaped chamber, having a series of ports in its side, pipes communicating between said ports and the open-

ings in the side of the cone-shaped chamber, a hollow open plug fitting said circular chamber, having ports or openings in its side registering with the openings in the said chamber as said plug is revolved, and provided with a stem for revolving the plug, a vertical shaft connected with said stem, a wheel for turning said shaft a plate mounted on said shaft on which are indicated the points of the compass, a pipe communicating with an opening in the lower part of the circular chamber and with the bottom of a cup-shaped auxiliary chamber 13, said chamber having an opening in its side, an open hollow plug fitting said chamber and having ports registering with said opening successively, and provided with a stem by means of which it may be revolved, means for automatically turning said stem consisting of a catch and a trigger, an index-finger on the end of said stem, a steam-outlet pipe from said chamber 13 and a device for producing sounds by the action of steam or air under pressure, substantially as and for the purposes set forth.

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

JAMES HENRY WALKER.

Witnesses:

THEO. L. GATCHEL,
M. LARMAN.