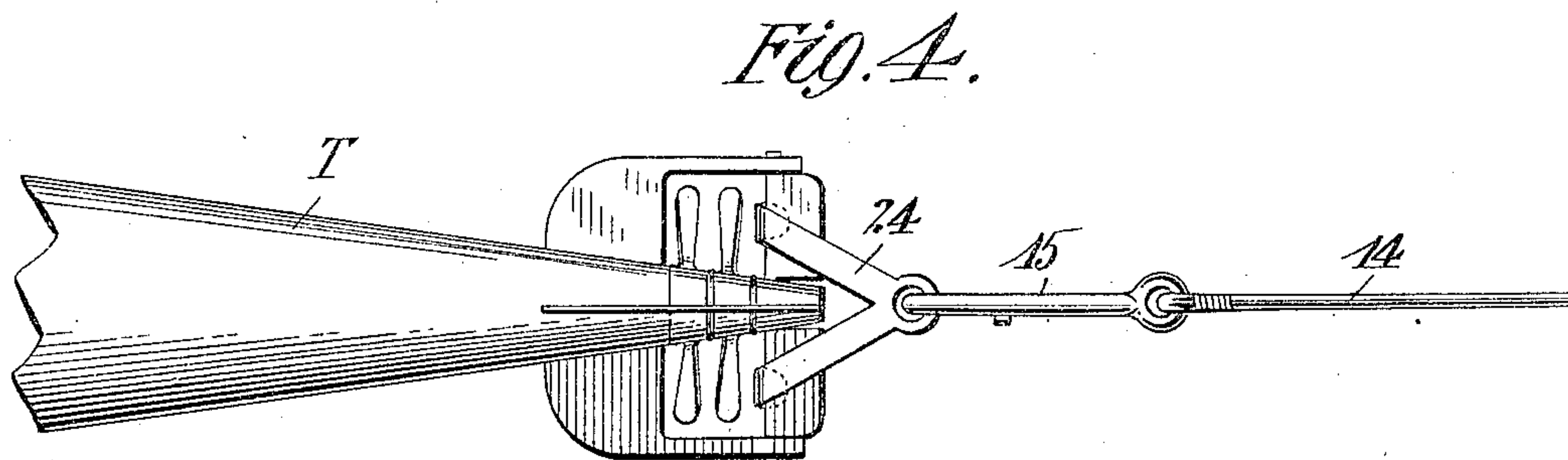
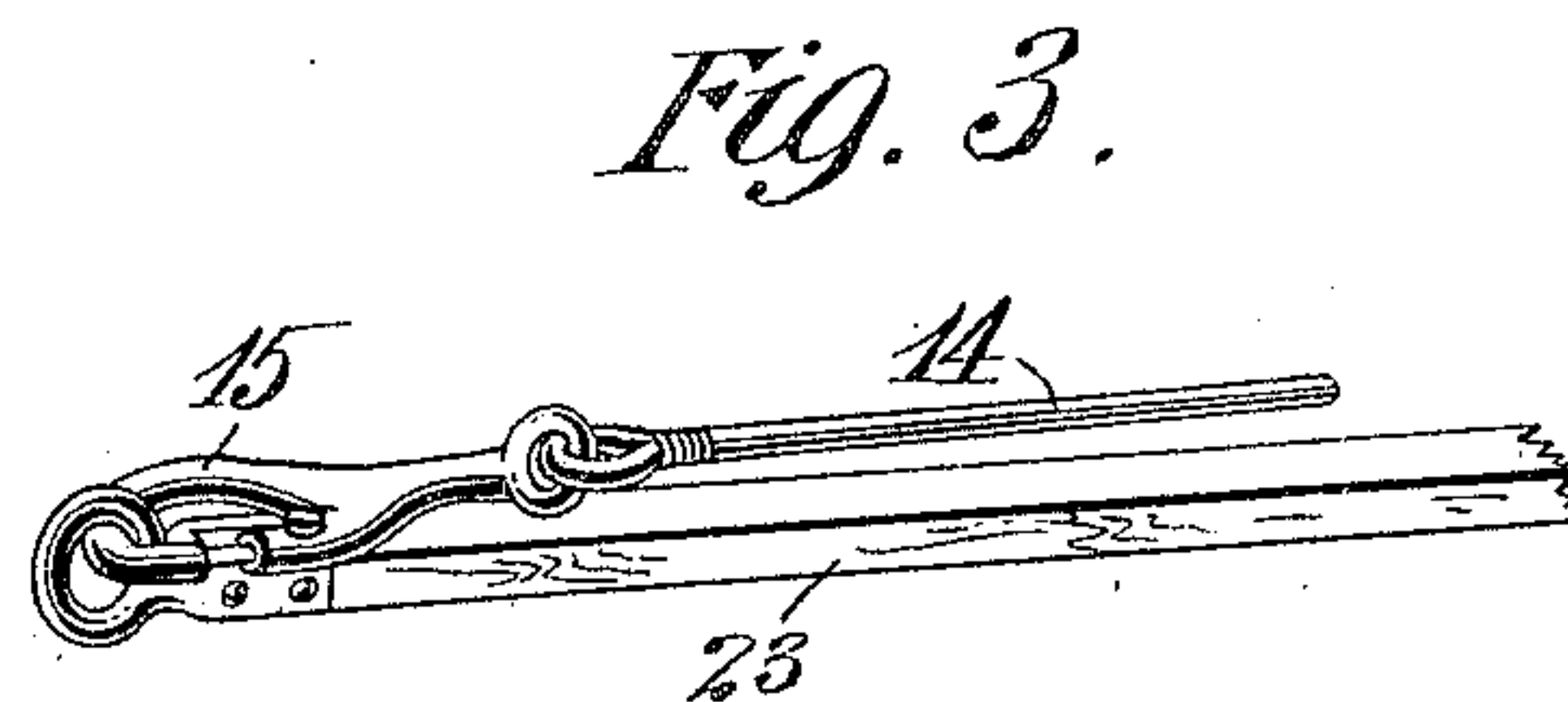
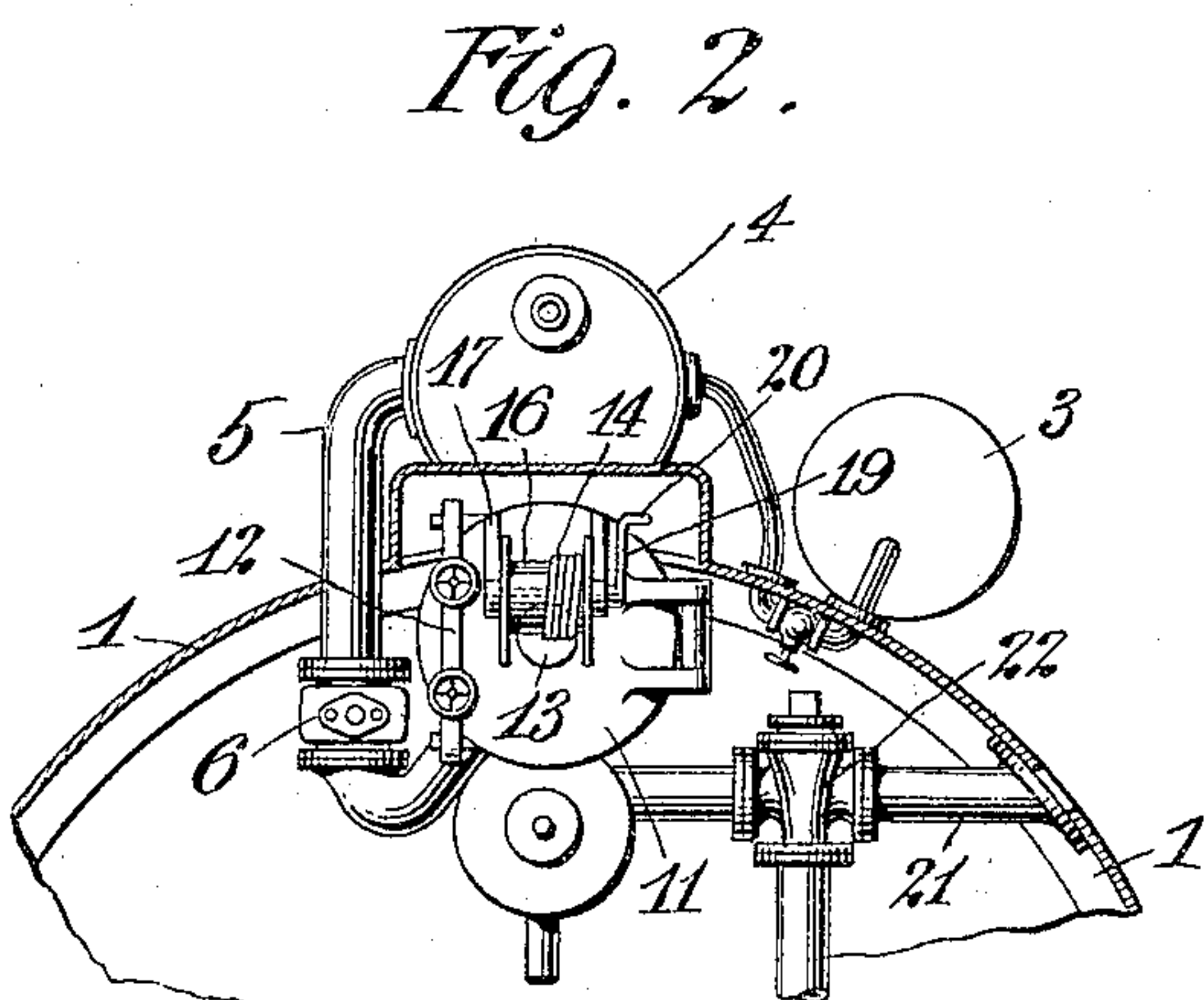
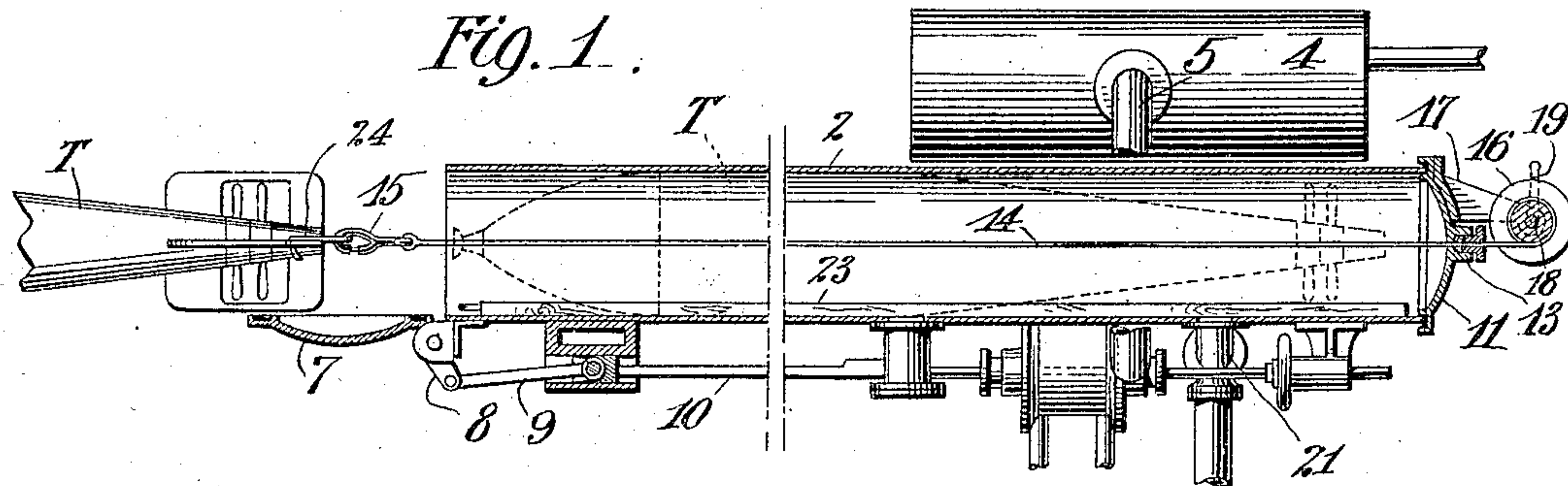


No. 803,218.

PATENTED OCT. 31, 1905.

G. M. EVANS.
TORPEDO HANDLING DEVICE FOR VESSELS.

APPLICATION FILED MAR. 17, 1905.



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GEORGE M. EVANS, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO SIMON LAKE, OF BRIDGEPORT, CONNECTICUT.

TORPEDO-HANDLING DEVICE FOR VESSELS.

No. 803,218.

Specification of Letters Patent.

Patented Oct. 31, 1905.

Application filed March 17, 1905. Serial No. 250,506.

To all whom it may concern:

Be it known that I, GEORGE M. EVANS, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Torpedo-Handling Devices for Vessels, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to an improvement in that class of vessels provided with torpedo-tubes, and particularly to those of such construction as submarine torpedo-boats that the introduction of the torpedoes to the interior
15 through the hatches is impracticable.

The invention has for its object to provide means for the easy introduction of torpedoes into the firing-tubes for the purpose of loading the latter or for passing the same through
20 such tubes into the interior for storing the same for subsequent loading.

The invention consists, essentially, in devices applied to the inboard end of the firing-tube and preferably in axial relation thereto
25 and means for actuating the same external thereto, whereby when attached to the rearward end of a propelling-torpedo the same may be drawn into place in the tube.

30 The invention further consists in certain details of construction which will be hereinafter set forth.

In the annexed drawings, in which the improvement is shown applied to the torpedo-handling apparatus forming the subject of the
35 United States patent to Simon Lake, No. 709,335, dated September 16, 1902, Figure 1 is a side elevation, partly in section, of one of the torpedo-tubes of a submarine boat, showing certain parts in section. Fig. 2 is
40 an end view of the same. Fig. 3 is an enlarged perspective view of the outer end of the rod 23 with the flexible line attached; and Fig. 4 is a plan view of the rear portion of a torpedo, showing the manner of attachment
45 of the hauling-line to draw it into the tube.

The torpedo-tube 2 is arranged in the upper portion of the hull 1 of a submarine torpedo-boat which incloses within its superstructure the main air-tank 3 and the firing-tank 4, from
50 which to the inner end of the firing-tube leads the air-pipe 5, provided with the controlling gate-valve 6. The outboard or sea cap 7 is pivoted to the outer end of the firing-tube and is provided with a rigid crank-arm 8, connected, by means of the link 9, with the op-

erating-rod 10, which is or may be provided with actuating means, such as those described in the patent to Simon Lake, before mentioned. The inboard or breech cap 11 is similarly hinged to the inner end of the firing-tube and is adapted to be locked shut by means of a swinging yoke 12 in the manner described in the aforesaid patent.

The inboard-cap 11 is provided with a stuffing-box 13, disposed in axial relation with the tube through which passes the flexible line 14, provided with a snap or other hook 15 upon the end within the firing-tube and having the opposite end attached to a winding drum or winch 16, carried by a rigid bracket 17, mounted upon the inboard-cap, the shaft 18 of the winding-drum being provided with a crank-arm 19 and handle 20, by which the same may be rotated. As in the prior patent before mentioned, a pipe 21, controlled by a valve 22, connects the breech end of the firing-tube with the exterior of the vessel and permits the displacement of the contained water within the tube by the torpedo as the latter enters the tube.

In the use of the apparatus as thus described the inboard-cap is first opened and the flexible tugging-line 14 is extended through the tube to the closed outboard-cap by the engagement of its hook 15 with the outer end of an inflexible rod 23, preferably of wood to make it buoyant, which is slightly shorter than the firing-tube. The hook of the line 14 having been forced to the outboard end of the tube by means of the rod 23, the inboard-cap is closed and the rod 23 permitted to remain in the tube. The outboard-cap is then opened and a torpedo T floated to the mouth of the tube, as illustrated partially in full lines in Fig. 1, and the operator catches, by means of a suitable grappling device, the hook 15 and makes it fast to the detachable forked hook 24, temporarily applied to the horizontal rudder-bar of the torpedo, thereafter removing the rod 23 from the firing-tube. The crank 19 of the winch 16 is now operated to wind up the flexible line 14, which serves to draw the torpedo within the tube in an axial line, which prevents its jamming or binding upon the outboard end of the tube, the water within the tube being expelled through the pipe 21 and previously-opened controlling-valve 22 therein. When the torpedo has been drawn into place within its housing-tube, the outboard-cap is shut upon its respective end of the firing-tube and

the inboard-cap opened to enable the operator to disengage the hook 15 and outer end of the line 14 from the tail of the torpedo, when the closing of the inboard-cap places the apparatus
5 in condition for service.

From the foregoing description it will be observed that the present improvement is not limited in its application to any particular form or construction of torpedo-tube or to
10 any particular means of operation of the same, nor is the particular arrangement of parts described herein material to the improvement. Whether or not the inboard-cap is provided with a suitable housing for the drum 16,
15 whose shaft may pass laterally through a stuffing-box therein to receive the crank 19, or whether it be mounted externally to the cap 11, is a matter of design which will be determined by the circumstances under which the
20 apparatus is to be used.

The flexible line employed is preferably a wire or thin rod of such character that the water will not penetrate between the same and the surrounding stuffing-box; but it is evident
25 that by employing some other means than the winding-drum for drawing the same into the boat the flexible feature of this member may be dispensed with.

Having thus set forth the nature of the invention, what I claim herein is—
30

1. In a torpedo-boat, the combination with a torpedo-tube, of removable outboard and inboard caps therefor, and tackle adapted to be extended through said torpedo-tube and operable from the interior thereof at the inboard end for drawing a torpedo into said tube while the outboard-cap is opened and the inboard-cap is closed.
35

2. In a torpedo-boat, the combination with
40 a torpedo-tube, of outboard and inboard caps therefor, both adapted to be opened and closed upon the respective ends of said tube, a stuffing-box in the inboard-cap, and tackle operable from the exterior of said cap and extending through the stuffing-box in the latter
45 and through said torpedo-tube for drawing a torpedo into the latter from the exterior of the boat.

3. In a torpedo-boat, the combination with
50 a torpedo-tube, of outboard and inboard caps

therefor capable of opening and closing upon the opposite ends of said tube, a stuffing-box carried by said inboard-cap, a winch in substantial alinement with said stuffing-box when the inboard-cap is closed, and a flexible line
55 adapted to be led from said winch through said stuffing-box and throughout the entire length of said tube to draw into the latter a torpedo introduced into the outer end of said tube.
60

4. In a torpedo-boat, the combination with a torpedo-tube, of outboard and inboard caps therefor capable of opening and closing upon the opposite ends of said tube, a stuffing-box carried by said inboard-cap and disposed in
65 the axial line of said tube, and a winch also carried by said inboard-cap and disposed in substantial alinement with said stuffing-box.

5. In a torpedo-boat, the combination with a torpedo-tube, of outboard and inboard caps
70 therefor, both adapted to be opened or closed upon the respective ends of said tube, a stuffing-box in the inboard-cap, a flexible line entering said tube through the stuffing-box, an inflexible rod shorter than the said tube adapted
75 to engage the end of said flexible line to draw it to the outboard end of the tube, and means for drawing said line through said stuffing-box to introduce a connected torpedo into said tube.
80

6. In a torpedo-boat, the combination with a torpedo-tube and a valved connection between the inboard end of said tube and the exterior of said boat, of outboard and inboard caps for said tube, both adapted to be opened
85 and closed upon the respective ends of said tube, a stuffing-box in the inboard-cap, and tackle operable from the exterior of said cap and extending through the stuffing-box in the latter and through said torpedo-tube for drawing
90 a torpedo into the latter from the exterior of the boat.

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

GEORGE M. EVANS.

Witnesses:

L. B. MILLER,

HENRY J. MILLER.