A. E. JONES.

TORPEDO LAUNCHING TUBE.

APPLICATION FILED NOV. 1, 1907.

908,270.

Patented Dec. 29, 1908.

Fig. 1

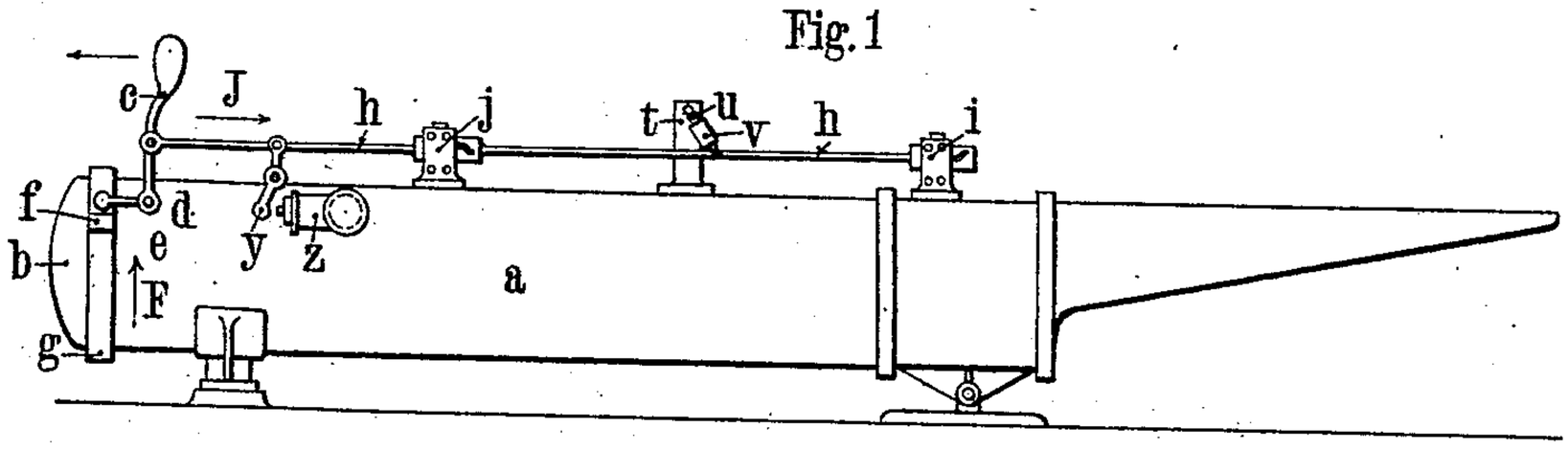


Fig. 2

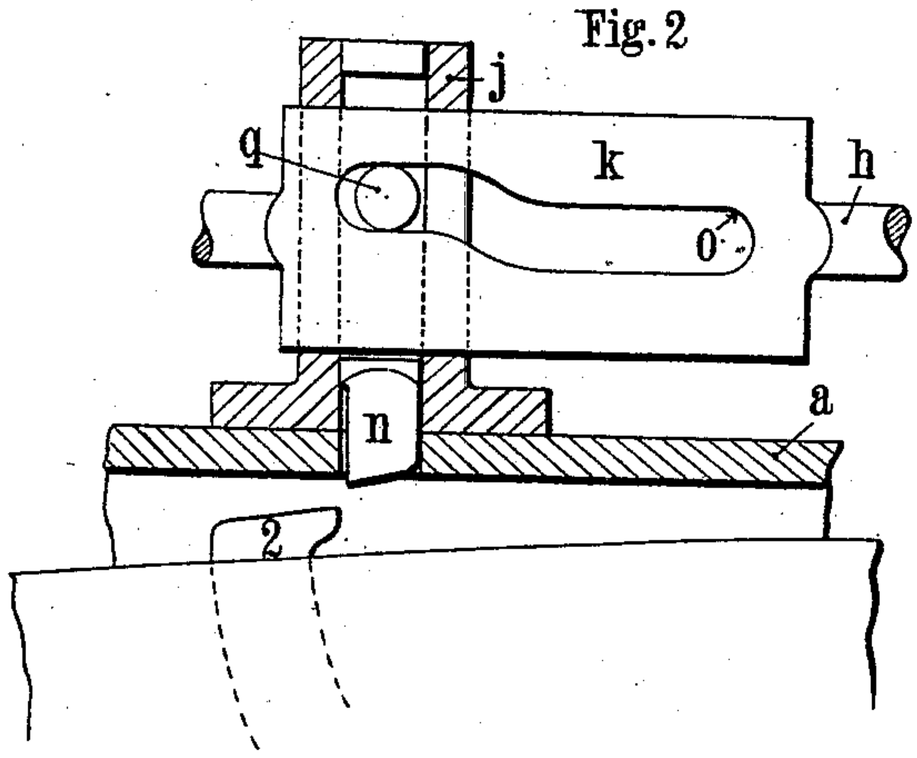


Fig. 5

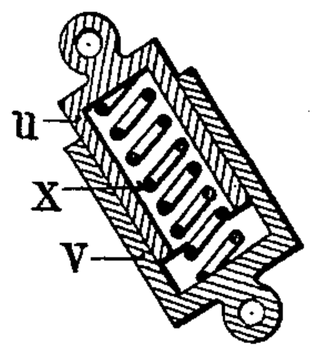


Fig. 3

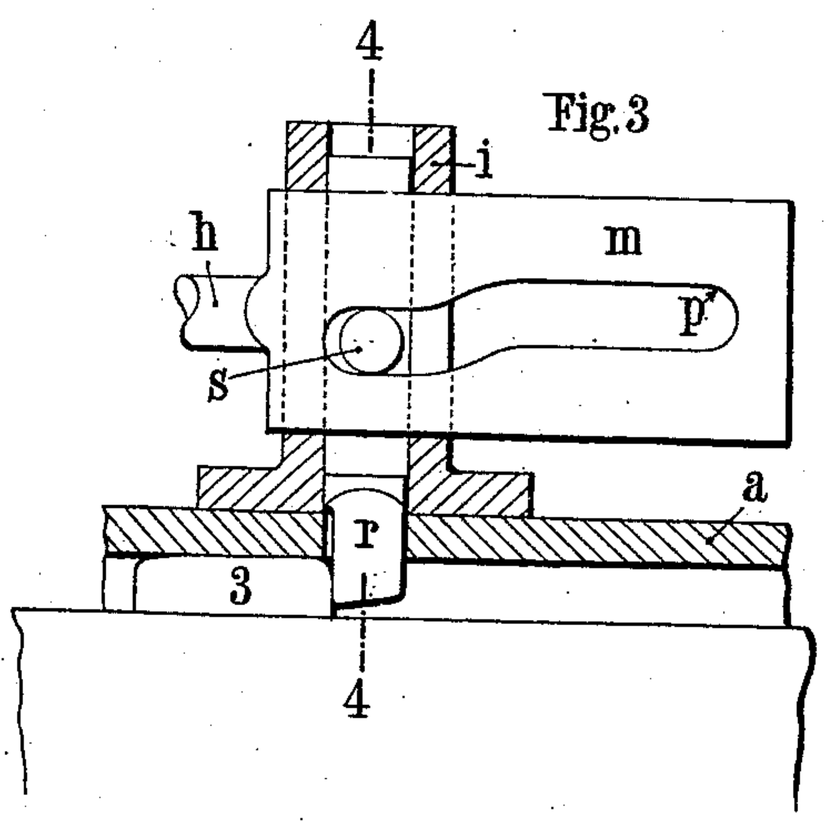
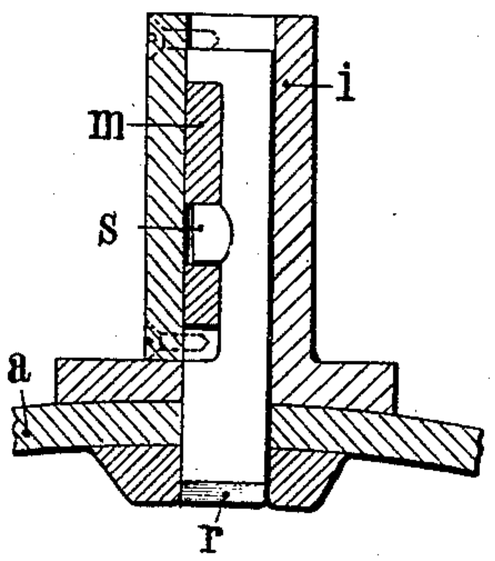


Fig. 4



WITNESSES :

W. M. Avery

J. P. Davis

INVENTOR

Albert Edward Jones

BY Munn & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

ALBERT EDWARD JONES, OF FIUME, AUSTRIA-HUNGARY, ASSIGNOR TO WHITHEAD & COMPANY, OF FIUME, AUSTRIA-HUNGARY.

TORPEDO-LAUNCHING TUBE.

No. 908,270. Specification of Letters Patent. Patented Dec. 29, 1908.

Application filed November 1, 1907. Serial No. 400,200.

To all whom it may concern:

Be it known that I, ALBERT EDWARD JONES, a subject of the King of Great Britain, and residing at Fiume, Austria-Hungary, engineer, have invented certain new and useful Improvements in and Relating to Torpedo-Launching Tubes, of which the following is a specification.

This invention has reference to a safety device for launching torpedoes and has for its object to simplify the manipulation of the tube, this being reduced to the opening and the closing of the breech, and to acting upon the firing handle.

In the accompanying drawing:—Figure 1 represents a side elevation of a torpedo launching tube provided with this safety device. Figs. 2 and 3 are detail views of the operating gear for the bolts for stopping and releasing the torpedo. Fig. 4 is a section on the line 4—4 of Fig. 3. Fig. 5 shows a detail of a portion of Fig. 1.

The torpedo launching tube *a* closed by the breech *b* carries the ordinary firing handle *c* jointed at *d* to the side of the tube, and provided with an arm *e* capable of engaging with a projection *f* on the crown *g* of the breech. The handle *c* is attached to a rod *h* parallel with the torpedo tube and which passes through two supports *i j* in the form of boxes. The rod members *k m* passing through these boxes are enlarged and recessed with grooves *o p* forming cams (Figs. 2 and 3). The box *j* serves as a guide for the bolt *n* for starting the torpedo and is connected with the cam groove *o* by a pin *q*. In the same way, the box *i* serves to guide the bolt *r* for stopping the torpedo, which bolt is connected by the pin *s* with the cam groove *p*. The torpedo launching tube likewise carries a support *t*, to which the rod *h* is connected by a spring device which is represented in detail in Fig. 5, and comprises two boxes *u v* sliding telescopically within one another and articulated to the support *t* and to the rod *h* respectively. A spring *x* compressed between these two boxes tends to separate them from one another. Finally, in proximity to the firing handle, the rod *h* is connected to the trigger lever *y* adapted to strike the percussion mechanism *z*.

The operation is as follows:—In order to insert a torpedo in the tube, first of all the breech is opened by causing it to turn in the direction indicated by the arrow F (Fig. 1). The projection *f* on the crown *g* in acting upon the small arm *e* of the handle *c* depresses it forward. The rod *h* moves in the direction indicated by the arrow J; the cam groove *o* consequently draws the starting bolt *n* upwards, while the cam groove *p* (the contour of which is the reverse of that of the groove *o*) presses the stop bolt *r* inside the tube. Figs. 2 and 3 show that if the torpedo be now introduced into the tube, it will necessarily be brought to rest by its stop guide 3 encountering the stop bolt *r* which projects into the interior of the tube. The breech *b* is closed by turning it in the opposite direction to that indicated by the arrow F. In order to launch the torpedo, the handle *c* is drawn back, thereby displacing the rod *h* in the opposite direction to that indicated by the arrow J; the stop bolt *r* moves aside in the box *i* while the starting bolt *n* projects inside the tube and comes in the path of the starting lever 2 controlling the air supply to the motor of the torpedo not shown. This rearward movement of the rod *h* is assisted by the spring device (Fig. 5). The rearward movement of the rod *h* likewise, by means of the trigger lever *y*, causes firing in the box *z* and consequently the departure of the torpedo.

The advantages are as follows:—In the first place it is impossible to open the breech without bringing the stop bolt *r* for the torpedo into position, that is to say, without automatically insuring the condition essential for preventing the torpedo from leaving the loading tube accidentally at the time of charging. When firing, in the first place the starting bolt *n* is automatically caused to enter the tube, while the stopping bolt *r* is withdrawn, and almost simultaneously the trigger lever *y* is released. Any incorrect manipulation is therefore impossible, as all the parts are controlled by a single part, such as the firing handle, and the whole may be operated by a single man. The torpedo launching tube properly so-called presents this further peculiarity, that the length of its cylindrical part is reduced to the minimum whereby the construction is rendered more economical.

It should be understood that the shapes of the various levers of the guide boxes for the

bolts and of the cams controlling the bolts are only given by way of example in the accompanying drawing.

The invention is applicable to tubes for launching torpedoes both above and below the level of the water.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. In combination with a torpedo launching tube, a rod arranged outside of the tube and displaceable lengthwise, said rod being connected with the firing mechanism, enlarged members formed on the rod passing through supporting boxes on the launching tube, said members being provided with grooves curved in opposite directions for engaging the torpedo stop and starting bolts.

2. In combination with a torpedo launching tube, a rod connected with the firing mechanism and provided with enlarged members having cam-shaped grooves curved in opposite directions, supports in the form of boxes on the launching tube for guiding said enlarged members, a stopping bolt and a starting bolt guided in each support respectively, said bolts being provided with pins engaging the cam-shaped grooves.

3. In combination with a torpedo launching tube, a rod connected with the stopping and starting bolts of the torpedo, with the trigger lever, and with the firing handle, whereby a continued rearward motion of the rod will in turn depress the starting bolt, raise the stop bolt, and cause the trigger lever to strike the percussion mechanism.

4. In combination with a torpedo launching tube, a rod connected with the stopping and starting bolts of the torpedo, with the trigger lever, and with the firing handle, the latter being provided with an arm which, on opening the breech of the launching tube, engages with a projection on the crown of said tube, thus moving the rod forward to raise the starting bolt and depress the stop bolt.

5. In combination with a torpedo launching tube, a rod displaceable lengthwise and connected with the stopping and starting bolts of the torpedo and with the lever striking the percussion mechanism, and a firing handle attached to the rod and pivoted to the launching tube, said firing handle having an arm engaging with a projection on the crown of the breech.

6. In combination with a torpedo launching tube, a rod displaceable lengthwise and connected with the trigger lever, a firing handle attached to the rod and pivoted to the launching tube, said handle having an arm engaging with a projection on the crown of the breech, enlarged members formed on the rod and provided with cam-shaped grooves curved in opposite directions, supports on the tube for guiding said members, stopping and starting bolts guided in each support respectively, and pins on said bolts engaging with the cam-shaped grooves for causing the bolts to engage respectively with stopping and starting notches attached to the torpedo.

In testimony whereof I have hereunto placed my hand and seal at Birmingham, England, this ninth day of October 1907.

ALBERT EDWARD JONES. [L. S.]

In the presence of two witnesses:

ARTHUR WRIGHT, Junior,

HOWARD JOHN ASHLY.