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DEPTH SETTING REEL FOR SOUNDING BALLS FOR SUBMARINE MINES.

APPLICATION FILED AUG. 9, 1917.

1,314,658. Patented Sept. 2, 1919.

Fig. 1.

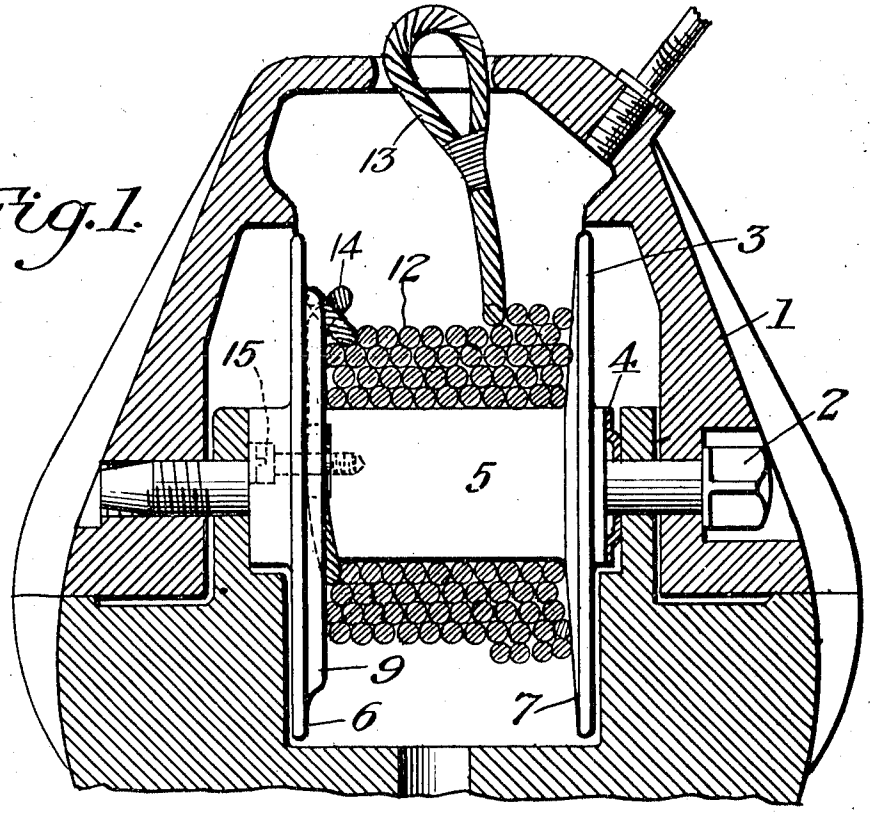


Fig. 2.

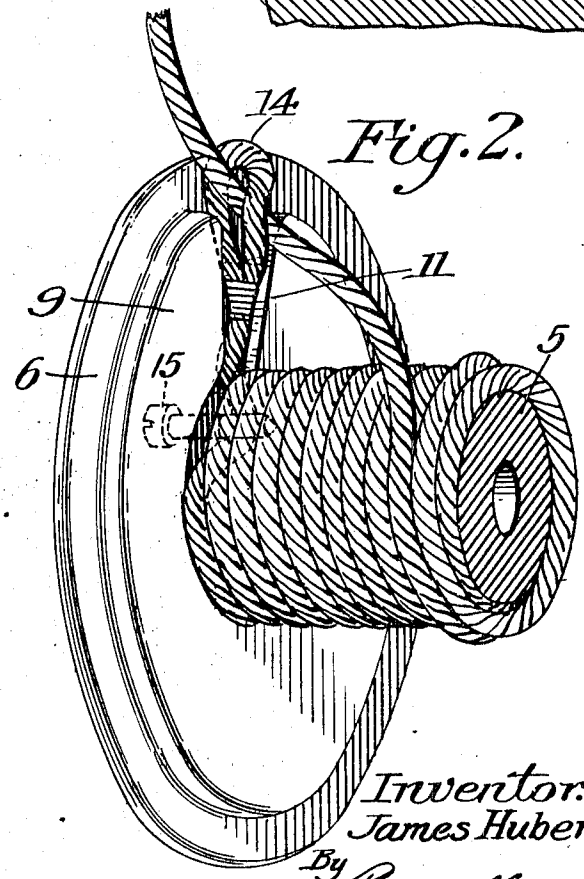
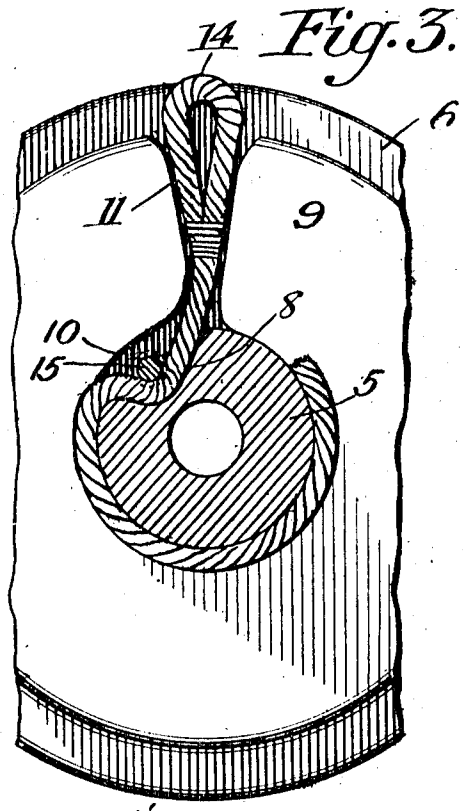


Fig. 3.



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UNITED STATES PATENT OFFICE.

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DEPTH-SETTING REEL FOR SOUNDING-BALLS FOR SUBMARINE MINES.

1,314,658. Specification of Letters Patent. Patented Sept. 2, 1919.

Application filed August 9, 1917. Serial No. 185,379.

To all whom it may concern:

Be it known that I, JAMES HUBER, a citizen of Switzerland, a resident of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Depth-Setting Reels for Sounding-Balls for Submarine Mines; 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.

This invention relates to a depth setting reel for sounding balls for submarine mines.

The primary object of the invention resides in the provision of a simple and inexpensive device wherein the sounding ball cable will be permitted to pay out until the ball has reached a predetermined depth, at which time the movement of the ball will be automatically arrested.

With this and other objects in view, such as will appear as the description progresses, the invention lies in the combination and arrangement of parts as set forth in and falling within the scope of the appended claims.

In the drawing—

Figure 1 is a fragmental sectional view of a sounding ball, showing a reel constructed in accordance with my invention, in position therein.

Fig. 2 is a fragmental perspective view of the reel, and

Fig. 3 is a fragmental sectional view disclosing the manner in which the end of the cable is seated within the receiving recess.

In the drawing I have illustrated a sounding ball 1, which comprises two sections secured together by a bolt 2, in a manner similar to that described in my co-pending application, Serial Number 180,201, filed July 12, 1917. On this bolt 2 a reel 3 is rotatably mounted, the rotation being controlled by a resilient washer 4. This reel comprises a drum portion 5 and flanges 6 and 7. A depression 8 is formed in the face of the drum portion adjacent to the flange 6, for a purpose which will later appear. The flange 6 is provided with an enlargement 9, in which a recess is formed. This recess includes a portion 10, which extends substantially concentric with the drum portion 5 of the reel, and also includes a portion 11, which extends radially and the walls of which diverge, as clearly illustrated in Fig. 3 of the drawing. The sounding ball cable 12, which is provided with a loop 13 on one end and a loop 14 on the other end, is wound upon the reel between the flanges 6 and 7 thereof, in the following manner: If the cable is, for instance, sixty feet long and it is desired to permit the cable to pay out but twenty feet before the movement of the sounding ball from the mine anchor is arrested, the end of the cable carrying the loop member 14 is placed in the recess in the enlargement 9, of the flange 6, with the loop 14 lying flat in the recess. A pin 15 is then inserted through the flange 6, so that it extends across the depression 8, in the drum portion 5 of the reel and above the cable. This pin causes the seating of the cable in the depression 8, and consequently secures this end of the cable to the drum. The cable being of a sixty foot length, it is wound upon the reel until forty feet of the cable has been used, at which time the loop 13 is passed through the loop 14 and the winding continued until the remaining twenty feet have been wound upon the reel. The ball is then attached to the mine anchor in the usual manner. Upon the disengagement of the ball from the anchor and the dropping of the same, the cable will pay out until the twenty feet have been used, at which time the movement of the sounding ball away from the anchor will be arrested, as the loop 14 will act as a lock to prevent the further unwinding of the cable and the using of the forty feet of cable which were wound upon the reel before the loop 13 was passed through the loop 14. Of course, it is to be understood that if it is desired to permit all of the cable to unwind from the reel, the pin 15 may be passed directly through the loop 14 and the cable wound upon the reel in the usual manner without passing the loop 13 through the loop 14, and on the other hand, if it is desired to permit any length of cable to unwind from the reel, this may be accomplished by winding the proper amount of the cable on the reel before passing the loop 13 through the loop 14.

The seating of the end of the cable carrying the loop 14 in the recess in the enlargement 9 of the flange 6, insures the even winding of the cable, as this portion of the cable will not interfere with the portion of the

cable which pays out from the reel, as will of course be readily understood.

While I have described the loop 14 as being carried by the cable, it is, of course, evident that this loop need not be carried directly by the cable, as it may be permanently attached or formed on the flange 6.

While I have illustrated and described a particular embodiment of my invention, it is to be understood that various changes may be made in the details of the construction without departing from the spirit of the invention or without exceeding the scope of the claims.

What I claim is:—

1. In a sounding ball for submarine mines, a reel, a cable, means for attaching one end of the cable to the reel, the cable being wound upon the reel and then attached to the first mentioned end.

2. In a sounding ball for submarine mines, a reel, said reel having a drum portion and flanges, the drum portion and one flange having communicating depressions therein and a pin extending through said flange and into the drum whereby one end of a cable may be attached to the drum with said end located in the aforementioned depressions.

3. In a sounding ball for submarine mines, a reel comprising a drum portion and a pair of flanges, one of said flanges having a recess therein, a cable having a loop thereon located in said recess, and means for securing the loop to the reel, the cable being wound upon the reel and passed through the loop.

4. In a sounding ball for submarine mines, a reel which comprises a drum portion and flanges, one of said flanges having a recess therein, a cable having a loop thereon located in the recess and a pin arranged to clamp the cable to the drum portion, the cable being wound upon the reel for a portion of its length, passed through the loop and then wound upon the reel for substantially the remainder of its length.

In testimony whereof I affix my signature.

JAMES HUBER.