

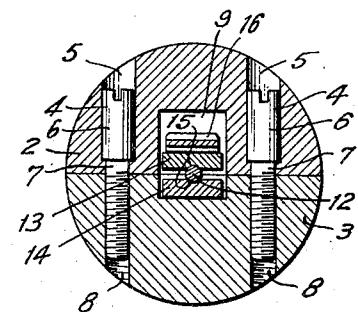
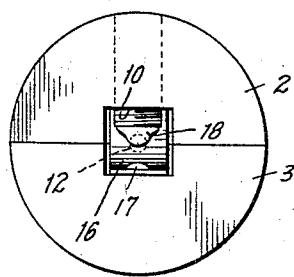
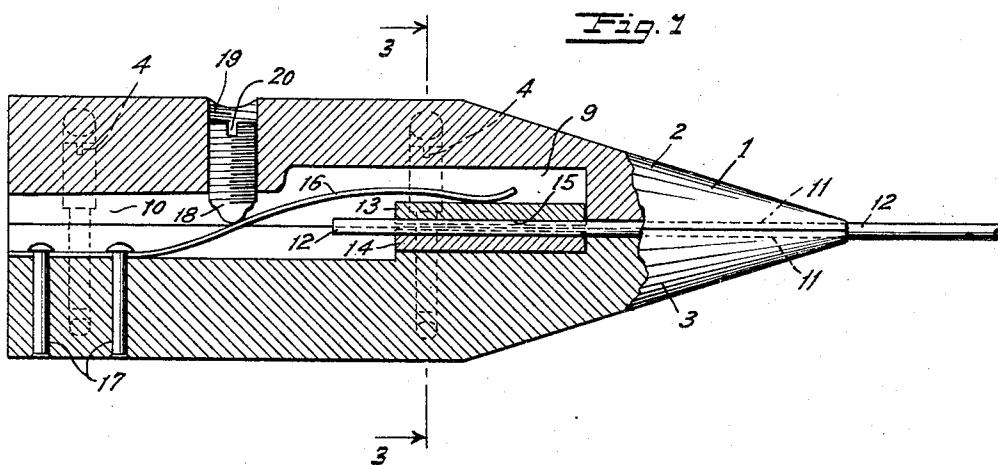
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DETACHABLE BOB

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DETACHABLE BOB

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The invention relates to moving bodies, and more particularly to an automatically detachable bob adapted for connection to a trailing element.

5 The present invention is particularly adapted to a remote controlled torpedo which is provided with a trailing radio antenna responsive to distant influences. Before this type of torpedo is launched the antenna associated therewith is wound on a reel incorporated in the body of said torpedo. Upon the launching of the torpedo or a predetermined time thereafter, the antenna is released, and the bob connected to the end of this antenna forms a trailer, and assists through the agency of the resistance of the water in paying out the antenna. When the antenna has been completely paid out it may be necessary to disengage the bob from the 10 antenna to obviate the retarding influences of the towed bob on the torpedo.

This invention therefore provides an improved bob which has a frictional engagement with its associated antenna and which 15 may be automatically disengaged therefrom when said antenna has been completely paid out.

The invention further provides means whereby the degree of frictional engagement 20 of said bob with said antenna may be regulated and adjusted.

The invention also consists in certain new and original features of construction and 25 combinations of parts hereinafter set forth and claimed.

Although the novel features which are believed to be characteristic of this invention 30 will be particularly pointed out in the claims appended hereto, the invention itself, as to its objects and advantages, the mode of its operation and the manner of its organization 35 may be better understood by referring to the following description taken in connection with the accompanying drawing forming a part thereof, in which

Fig. 1 is an elevation partly in section of the bob;

Fig. 2 is an end elevation of the bob, and

Fig. 3 is a section taken on line 3-3 of Fig. 1.

Like reference characters denote like parts in the several figures of the drawing.

In the following description and in the claims parts will be identified by specific names for convenience, but they are intended to be as generic in their application to similar parts as the art will permit.

55 The accompanying drawing shows a split bob 1, comprising two companion members 2 and 3, which are maintained in abutting relationship by slotted shoulder screws 4. The member 2 is provided with bores 5, for the embracement of the shoulder portions 6 of said screws and is also provided with bores 7, co-axially disposed with reference to bores 5, and cooperating with tapped holes 8 in member 3, so as to provide an engagement for the threaded portions of said screws.

60 Portions of the two companion members 2 and 3 are cut away so as to conjointly define a hollow 9 and a reduced hollow 10. The abutting faces of the companion members 2 and 3 are provided with semi-circular channels 11 disposed axially of said bob 1, said channels being designed to embrace a portion of the trailing antenna 12. The end of 65 said antenna extends partly within said hollow 9, and is held in position therein by a pair of frictional holding members such as longitudinal slab members 13 and 14, having longitudinal channels 15 of segmental cross section, with a curvature similar to that of the periphery of the antenna. In order to 70 maintain said slabs 13 and 14 in spaced relationship for the purpose hereinafter referred to, the channels 15 are construction of segmental cross section of less than 180°. The surface of the channels 15 are indicated in the drawing as being smoothly constructed but it is obvious that said surface may be 75 roughened or unevened if it is found necessary to offer greater resistance against the sliding displacement of the antenna in said channels. It is also obvious that the slab member 14 may be made integral with the companion 3 without departing from the 80 spirit of the invention.

75 To maintain said slabs in frictional engagement with said antenna there is provided 85

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a curved leaf-spring 16, one end of which is secured to the member 2 by means of rivets 17. The free end of said leaf-spring bears against the top of slab member 12 and is 5 arched so as to present a convex surface to said slab. The part of the leaf-spring contacting with the slab 13 is made wider than the diameter of the antenna 12, so as to counteract any tendency that slab 13 may 10 have to tilt about its axis.

It should be noted that the end of the hollow 9 forms an abutment for the slabs 13 and 14 and that the conjoint action of this abutment with the action of the leaf-spring 15 serves to maintain said slabs against displacement relative to the other elements of the bob.

Pressing against the intermediate portion 20 of said leaf-spring is an adjusting screw 18, passing through a tapped opening 19 in member 2. Said adjusting screw is slotted at 20 for the reception of any suitable turning tool. By means of said adjusting screw 25 the leaf-spring can be depressed any desirable amount, thereby producing a predetermined pressure on slab 13, the spaced relationship of the two slabs permitting an adjustment of the degree of friction between the slab and the antenna.

30 In the operation of this device, the resistance to the passage of the bob through the water assists in paying out the antenna, the pressure of the slab members on said antenna being adjusted so as to preclude the 35 disengagement of said bob from the antenna during this unreeling process. However as the antenna is completely unwound and the bob is beginning to be towed by the paid out antenna the bob traveling at a greater speed 40 through the water will encounter greater resistance thereby effecting a greater tendency for the antenna to be pulled from its frictional engagement with the slabs 13 and 14. The spring pressure can be adjusted to allow 45 the disengagement of the antenna from the bob under these conditions. It should be noted that by allowing the bob to be automatically disengaged when the antenna has been paid out, that the retarding influences 50 of a towed bob on a moving torpedo are obviated.

It should also be noted that, the frictional engagement may also be so adjusted, that if the bob becomes snarled in sea-weed or other 55 foreign matter it will become automatically disengaged before sufficient force has been developed to snap the antenna. This is particularly advantageous in cases where it is desirable to tow said bob, after the antenna 60 has been paid out so as to maintain said antenna in taut position.

65 It should also be noted that the bob according to my invention is very simple and constructed from demountable parts which can be easily assembled.

While certain novel features of the invention have been shown and described and are pointed out in the annexed claims, it will be understood that various omissions, substitutions and changes in the forms and details 70 of the device illustrated and in its operation may be made by those skilled in the art without departing from the spirit of the invention.

What is claimed is:

1. In combination with a towing element, a bob comprising two companion members held in abutting relationship and provided therebetween with a hollow, a pair of holding members mounted in said hollow and channeled for the reception therebetween of the said towing element, a leaf-spring carried by one of said companion members and cooperating with said holding members to maintain said holding members in frictional 80 engagement with the towing element, means carried by the other of said companion members for adjusting the tension of said spring, the portion of said leaf-spring contacting with one of said holding members being sufficiently wide to obviate the tilting of said holding member with reference to the elements of the bob.

2. In combination with a towing element, a bob comprising two companion members, held in abutting relationship and provided therebetween with a hollow, a pair of holding members mounted in said hollow and channeled for the reception therebetween of the said towing element, and a resilient element carried by one of said companion members and cooperating with said holding members to maintain said holding members in frictional engagement with the towing element and means carried by the other of said companion members for adjusting the tension of said resilient element.

In testimony whereof I have hereunto set my hand.

JOHN HAYS HAMMOND, JR. 110

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