F. HEYN.

BUOY FOR STREAMS AND CURRENTS.

APPLICATION FILED OCT. 9, 1912.

1,067,113.

Patented July 8, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

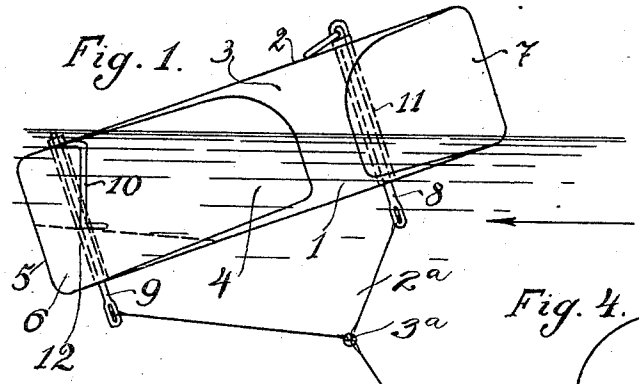


Fig. 4.

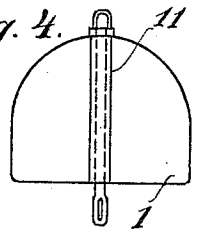


Fig. 2.

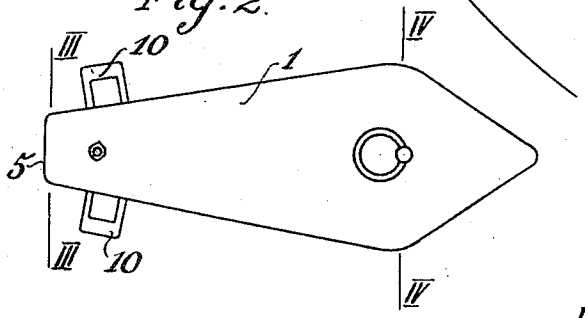


Fig. 3.

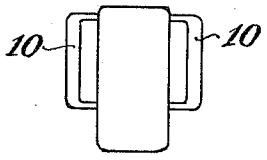


Fig. 5.

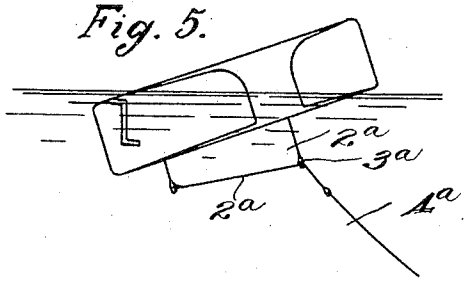
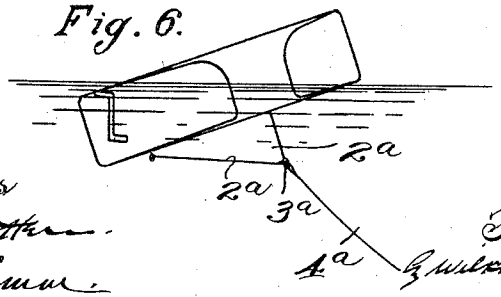


Fig. 6.



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BUOY FOR STREAMS AND CURRENTS.

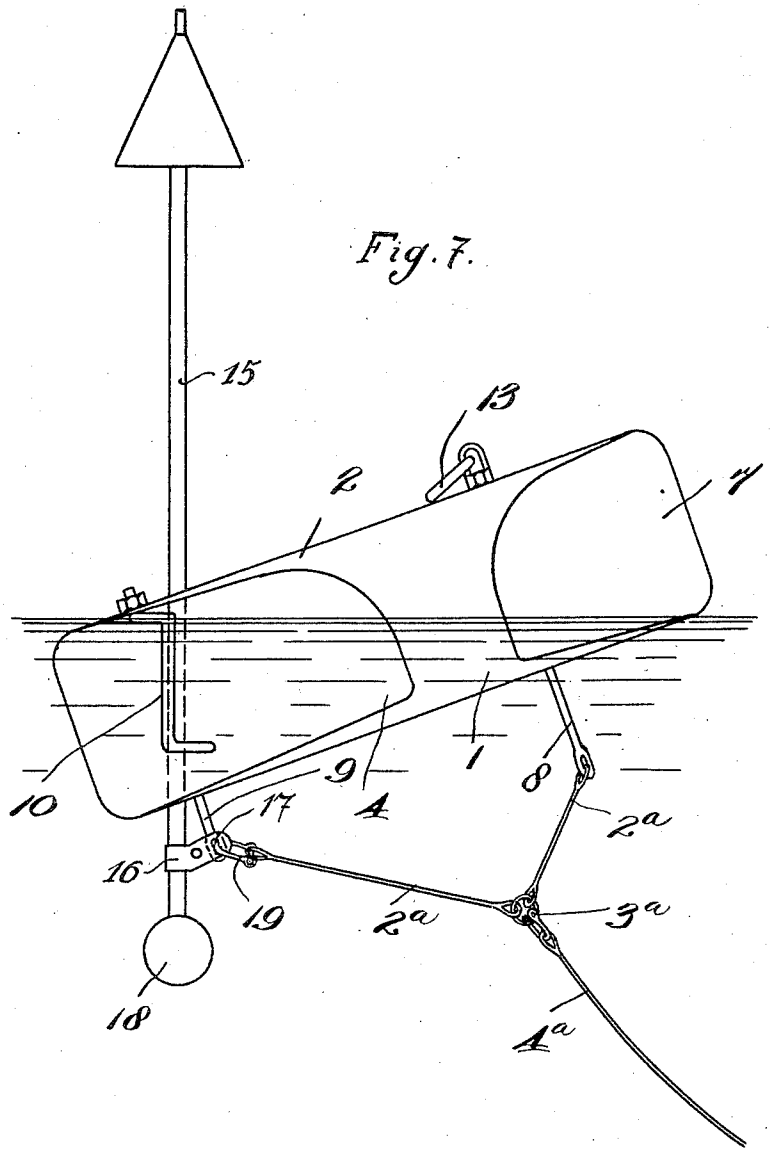
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2 SHEETS—SHEET 2.

Fig. 7.



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BUOY FOR STREAMS AND CURRENTS.

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Application filed October 9, 1912. Serial No. 724,841.

To all whom it may concern:

Be it known that I, FRIEDRICH HEYN, a subject of the German Emperor, residing at Hamburg, in the German Empire, have invented a new and useful Buoy for Streams and Currents; 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 buoys for running streams.

For the marking of channels and similar purposes, use is generally made of buoys in the form of barrels, which are so connected with their anchor cables that they either float upright in the water or are in the water with their longitudinal axes horizontal. Such buoys are only practicable in still water and are quite unsuitable when a current is present. In such case if the buoys do not possess very considerable size and consequently strong buoyancy they are submerged by the pressure of the water and are consequently very difficult to discover. For many purposes it is extremely desirable to keep the buoy as small, light and handy as possible, so that for instance, one man can attend to it.

The object of the present invention is therefore to provide a type of buoy wherein the dipping under is avoided and which combines great visibility with light weight.

It has already been proposed to utilize as a buoy a box constructed like a box-kite, but apart from the unhandiness and easily damaged structure of such a box there is a further drawback in that a box of this kind is difficult to keep with its longitudinal axis in the direction of the current. The latter is however an indispensable condition for a buoy constructed on this principle, because a buoy of this kind would otherwise be driven across the current by the wind and sea acting upon it sidewise, and in which case would be at once submerged.

The essential point of the present invention is therefore to prevent any cross driving of the buoy and to keep it continuously with its longitudinal axis in the direction of the current.

In the accompanying drawings: Figure 1 shows an elevation of a buoy of this kind floating in the water; Fig. 2 shows a plan view of the same buoy; Fig. 3 shows a section on the line III—III of Fig. 2; Fig. 4 shows a section on the line IV—IV of Fig. 2; Figs. 5 and 6 show methods of securing the buoy (illustrated on a reduced scale) to the anchor cable; and, Fig. 7 shows another form of construction of the buoy.

The buoy according to this invention possesses preferably the following form: Upon a kite shaped surface 1 held sloping in the water there is fixed the buoy body proper 2 which gives the necessary buoyancy. In this manner there is constructed a body tapering forward and with a round upper side 3, flat side walls 4 and blunt stern 5. Under the influence of the weight 6 the buoy in its normal position lies sloping in the water so that the front end 7 projects out of the water. In order to fasten the buoy to the anchor cable there are provided two bolts 8 and 9, which project downward with their lower ends a little beneath the bottom of the buoy and each has an eyelet. These eyelets are each connected by a strap or chain 2^a with a ring 3^a, to which the anchor cable proper 4^a is attached. It is essential in this fastening that the front bolt 8 should be placed at about the first third length of the buoy. Under the influence of the current which acts upon the surface 1 the front end 7 is lifted out of the water and consequently remains visible. This action, however, takes place only when the buoy lies exactly in the direction of the current. As soon as the buoy is driven transversely to the direction of the current by side wind or waves, the water pressure acts upon the side wall and immediately submerges it. It is therefore necessary to prevent this side driving. The increase of the superficial area by floats, keels or rudder is in this case impracticable because such projecting parts would make the buoys inconvenient to handle and these parts would soon be damaged. In this invention, therefore, for the purpose of attaining the object in view there is provided at the rear end of the buoy and on each side a loop 10. Each loop 10 has a broad flat surface or blade disposed at an angle to the stern 5 of the buoy, and against said flat surfaces the water streaming along the walls 4 will strike and cause at those places strong whirlpools. By this means there are caused at the stern of the buoy forces which continuously act in the direction of the current and tend to keep the stern of the buoy, and consequently the buoy itself, in the direction of

the current. The loops are made large in their dimensions and at the same time provide a convenient handle for the handling of the buoy. In order to further support this action, the buoy has the rearward converging side walls so that the water current will strike upon the loops 10 without being turned aside. The blunt stern 5 of the buoy has for its object likewise to create a stabilizing effect at its point which tends to keep the stern of the buoy in the direction of the current. The front part of the buoy is brought to a point for the reason that the buoy may present to the water as little resistance as possible so that a strong pressure of the water upon the buoy and the consequent submerging of it may be avoided in the longitudinal direction. The body of the buoy can be of sheet iron, cork, wood, or other suitable material and its fastening bolts 8 and 9 are inserted each in a tube 11 or 12 fixed in the body of the buoy so that the bolts which are liable to be damaged may be easily exchanged without injuring the water tightness of the buoy itself.

The upper end of the front fastening bolt 8 is provided with a ring 13, which in combination with the loops 10 serve as the handles for conveniently handling the buoy.

With another form of construction of the buoy according to Fig. 7 a particular signal rod 15 is provided at the rear-end of the buoy having a gravity weight 18 attached beneath. Near the bottom of the buoy a metal-band 16 is fixed to the rod having an eye 17 at the side. This eye is connected with the eyelet of the rear fastening rod by the shackle 19 of the strap of the anchor-cable and thus keeps the signal-rod in proper position.

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. A buoy comprising a float having converging front side walls, and oppositely converging rearward side walls; and loops secured against said rearward converging side walls adjacent the end of the float, said loops each having an angularly disposed blade projecting toward the rear of the float and providing a stabilizing device; and means for anchoring the float.

2. A buoy comprising a float having converging front side walls, oppositely converging rearward side walls, and flat top and bottom walls; tubes passing vertically through the float; rods passing through said tubes; angularly disposed blades secured to and projecting from the opposite sides of said rearwardly converging walls and providing stabilizing means; and means connected to said rods for anchoring the float.

In testimony whereof I have affixed my signature in presence of two witnesses.

FRIEDRICH HEYN.

Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."