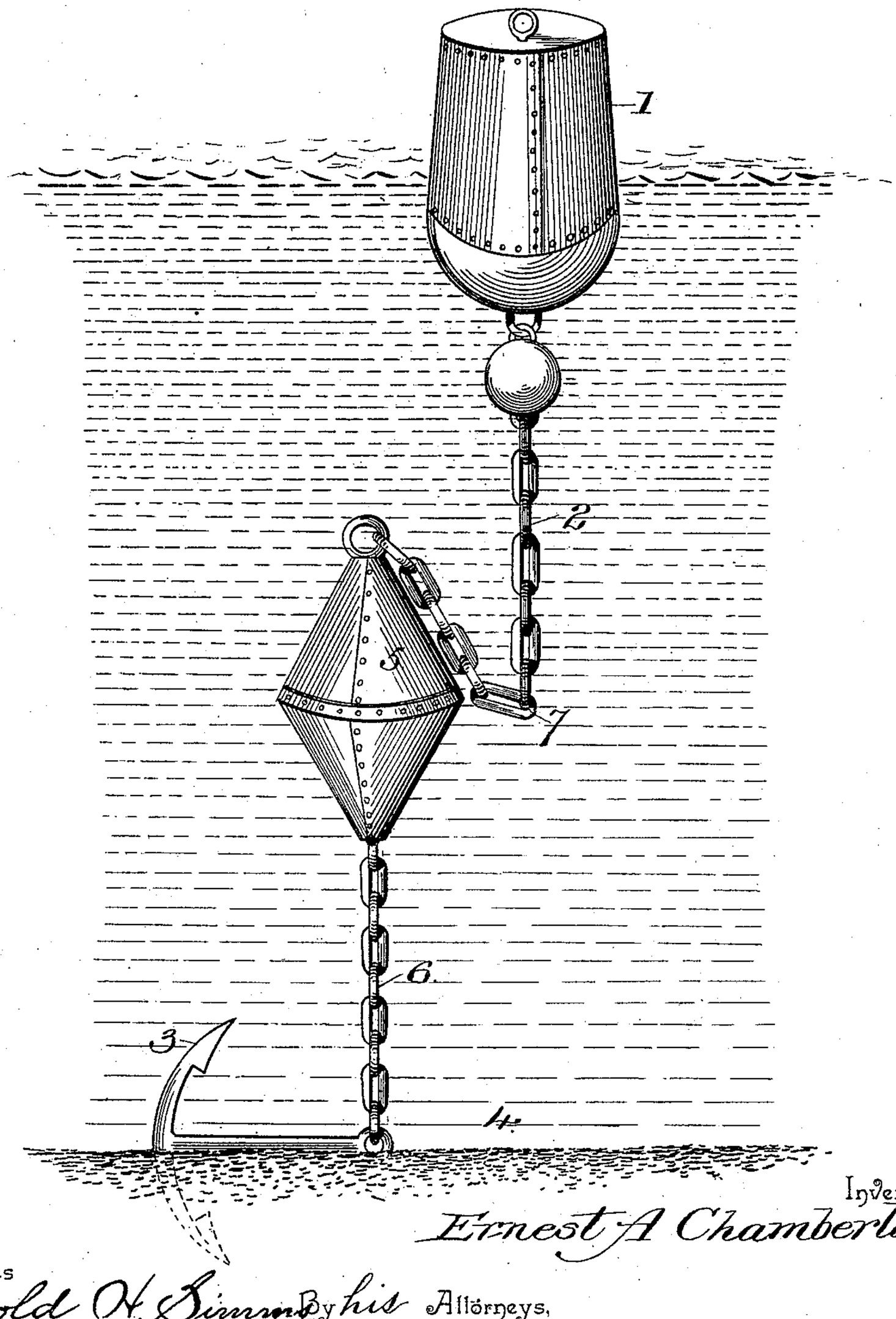
(No Model.)

E. A. CHAMBERLAIN.

SUBMARINE BUOY.

No. 594,600. Patented Nov. 30, 1897.



Inventor
Ernest A Chamberlain

Wilnesses
Harold H. Simmons
R. M. Smith

By his Attorneys,
C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

ERNEST ALVIN CHAMBERLAIN, OF WOODS, OREGON.

SUBMARINE BUOY.

SPECIFICATION forming part of Letters Patent No. 594,600, dated November 30, 1897.

Application filed May 25, 1895. Serial No. 550,663. (No model.)

To all whom it may concern:

Be it known that I, ERNEST ALVIN CHAMBERLAIN, a citizen of the United States, residing at Woods, in the county of Tillamook and State of Oregon, have invented a new and useful Submarine Buoy, of which the following is a specification.

This invention relates to an improvement in buoys, and has for its object to provide a simple and efficient submarine buoy which is adapted to support the anchoring chain or cable and to uphold the same for the purpose of preventing said anchoring-chain from wearing against the bed of a river, &c., caused by the chain churning on the bottom as the surface buoy rises and falls on the swell.

A further object of the invention is to facilitate the recovery of the anchor and chain by the use of grappling-irons or otherwise when the anchoring-chain becomes broken.

To accomplish the above objects, the invention consists in certain novel features and details of construction and arrangement, as hereinafter fully described, illustrated in the drawing, and embodied in the claim.

The accompanying drawing represents my improved buoy complete and shown in operative position in a body of water.

Referring to the accompanying drawing, 1 designates a surface buoy which may be of any usual or preferred material, such as wood in the form of a solid block or a cask having heavy staves or of sheet metal having riveted and sealed joints. The surface buoy may also be of any description—such as a "channel," "bell," "whistling," or other buoy.

2 designates an anchoring-chain which attaches at its upper end to the surface buoy or to a weight attached to the bottom of said surface buoy. The lower end of this anchoring-chain is generally connected with the anchor (indicated at 3) without the interposition of other devices, and where such is the case it will be apparent that the slack chain adjacent to said anchor will lie upon the bed or bottom 4 of the river or other body of water, and by reason of said anchoring-chain being always kept in motion by the swell of the water at the surface said chain will be subjected to continuous wear and will at length part, the upper portion of said chain being carried off by the surface buoy and that portion of the chain adjacent to the anchor falling to the bed or bottom 4, where it will become covered with sand, &c., and the recovery thereof be rendered exceedingly difficult. In order to obviate this difficulty and to facilitate the recovery of said anchor and its chain, I employ a second buoy (indicated at 5) which is preferably made in the form of a double cone or pointed at top and bottom, this shape rendering the buoy less liable to be fouled. This buoy may be made of solid or hollow wood, but is preferably formed from sheet metal securely riveted and tightly sealed at the joints.

The buoy 5 is submerged, preferably, in the lower half or below the center of the depth of the body of water in which it is placed, such depth being regulated by means of the anchoring-chain 6, which connects said submerged buoy with the anchor 3. The chain 2 connects at its lower end with an eye at the upper end of the submerged buoy 5, and the slack in the upper chain rests upon the upper conical portion of said buoy, as indicated in the drawing, the bend or double in said chain occurring at the point 7, or thereabout. Sufficient slack is given to the upper chain 2 to allow the surface buoy to rise and fall when acted upon by the natural swell of the water at the surface or by the waves or wakes of vessels.

From the foregoing description it will be apparent that the greatest wear on the anchoring-chain will occur at the point 7, where said chain is doubled. When this chain finally breaks, the portion thereof attached to the submerged buoy 5, as well as the lower section 6 of the chain, will be upheld by said buoy and prevented from falling to the bottom. By means of this construction and arrangement the anchoring-chain is always held clear of the bottom and the wear thereon greatly diminished, and another great advantage of the arrangement is that when the chain finally breaks the anchor, &c., may be recovered with comparative ease, as the submerged buoy and connecting-chain reaching to the anchor remain in their original relation, adapting the same to be more readily found and grappled by the usual appliances for that purpose.

The form of the buoys is of course imma-

terial to this invention, and it will be apparent that other changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

A buoy adapted for permanent use as a channel or similar buoy, comprising an air-tight surface buoy, a permanently-submerged buoy 5, a chain 6 carrying an anchor and permanently connected at its upper end to the lower point of the submerged buoy, and an anchoring-chain permanently connected at one end with the lower side of the surface buoy and at its other end with the upper point of the submerged buoy, said anchoring-chain having a normally slack portion lying on the upper side of the submerged buoy, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ERNEST ALVIN CHAMBERLAIN.

Witnesses:
WILLIAM BOOTH,
RICHARD H. HOLMES.