(No Model.)

O. KUSTEL.

ROTATING TROLLING DEVICE FOR SHIPS' LOGS.

No. 387,168. Patented July 31, 1888.

Fig. 1.

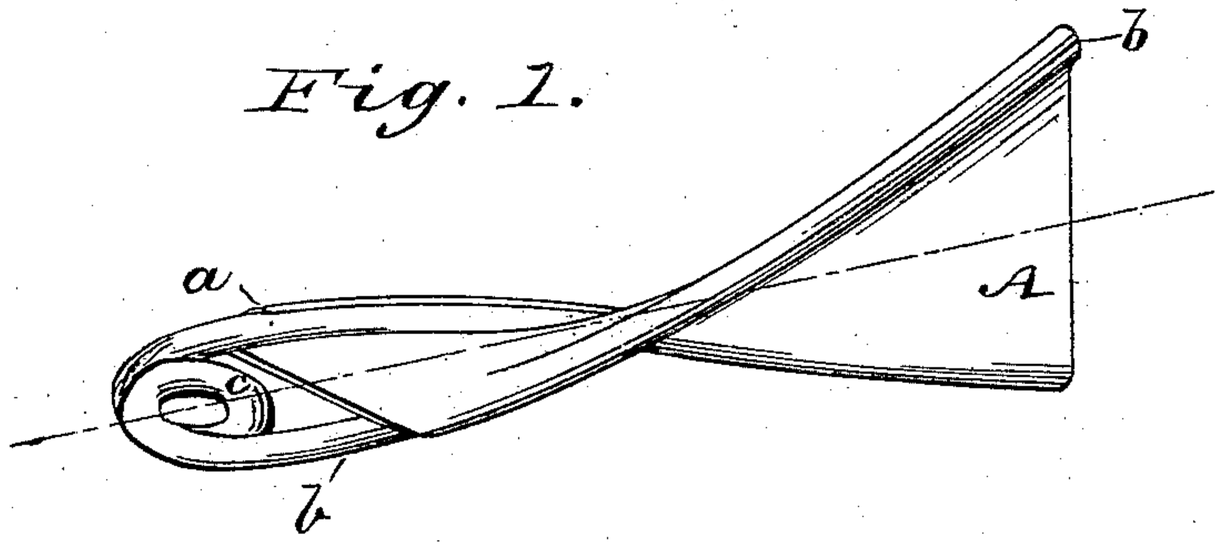
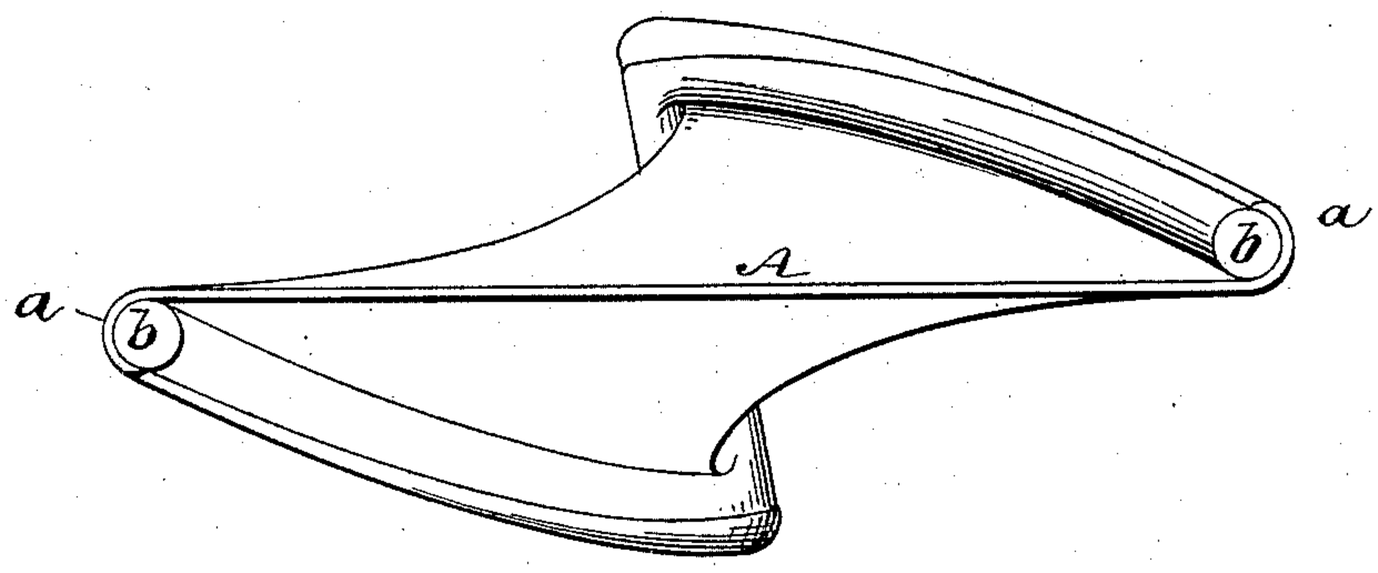


Fig. 2.



WITNESSES:

John H. Deemer

C. Sedgwick.

INVENTOR:

O. Kustel.

BY Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE

OSCAR KUSTEL, OF SAN FRANCISCO, CALIFORNIA.

ROTATING TROLLING DEVICE FOR SHIPS' LOGS.

SPECIFICATION forming part of Letters Patent No. 387,168, dated July 31, 1888.

Application filed December 12, 1887. Serial No. 257,616. (No model.)

To all whom it may concern:

Be it known that I, OSCAR KUSTEL, of San Francisco, in the county of San Francisco and State of California, have invented a new and useful Improvement in Rotating Trolling Devices for Ships' Logs, of which the following is a full, clear, and exact description.

This invention relates to rotators or rotating trolling devices applicable to ships or vessels of different kinds, including steamers, for measuring the distance the vessel sails in a given time. These rotators, which are usually worked from the taffrail, are made fast to a hard-twisted rope or line and dragged through the water after a vessel in motion. The resistance encountered by this trolling device in its passage through the water causes it to rotate, and with it its drag line or rope, which in its turn communicates motion to suitable registering mechanism on the vessel, generally called a "log," that can be read off by simple inspection at any time.

My invention consists in a novel construction of the rotator or rotating trolling device, substantially as hereinafter described, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 represents a view in perspective of a rotating trolling device for ships' logs embodying my invention, and Fig. 2 an outer end view of the same upon a larger scale.

A indicates the rotator or rotating blade, made of a single sheet of brass or other suitable metal, and bound on its longitudinal edges by a stout wire, *b*, which gives great strength and simplicity to the rotator. This wire *b* is held to the blade by the flanges *a*, which are formed by bending the longitudinal edges in reverse directions, so that the wire extends along the longitudinal margins of the blade on reverse sides—that is, on one side of the blade for one of the said margins and on the opposite side of the blade for the other margin—thereby forming a rib on opposite sides of each longitudinal margin of the blade. By this construction a perfect balance is afforded and shearing and slipping prevented. The blade is the same thickness throughout, thereby giving a large spread of rotating surface without increasing the resistance through the water, thus reducing the slip to a minimum.

As here represented, the shape of the twisted blade or rotator A is such that all lines on it drawn perpendicular to its longitudinal axis, which is represented by the dotted line in Fig. 1, will be straight, as clearly shown at the outer end of the blade in Fig. 2, or the blade may be helicoidal in shape. In either case the same conditions present themselves to the water that a screw entering a rigid nut does.

At the forward or inner end of the rotator, within the wire *b*, where it is bent to pass from one longitudinal margin of the blade to the other, is a rounded eye or loop, *c*, through which the drag-line is fastened, and which prevents said line from kinking or from forming a kink where it is fast to the rotator.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A rotary trolling device for ships' logs, consisting of a twisted blade having ribs on opposite sides along its longitudinal margin, substantially as described.

2. A rotating trolling device for ships' logs, consisting of a plate twisted and having its longitudinal margins bent in reverse directions, forming curved flanges, and a wire secured on opposite sides of the plate along the longitudinal edges by said flanges, substantially as described.

3. In a rotating trolling device for ships' logs, the twisted blade or rotator, bound on its longitudinal margins by a wire having its bend at and beyond the inner end of the blade, and provided with an eye or loop within said bent portion of the wire, essentially as shown and described.

OSCAR KUSTEL.

Witnesses:
J. O. W. PAINE,
J. E. HOWLAND.