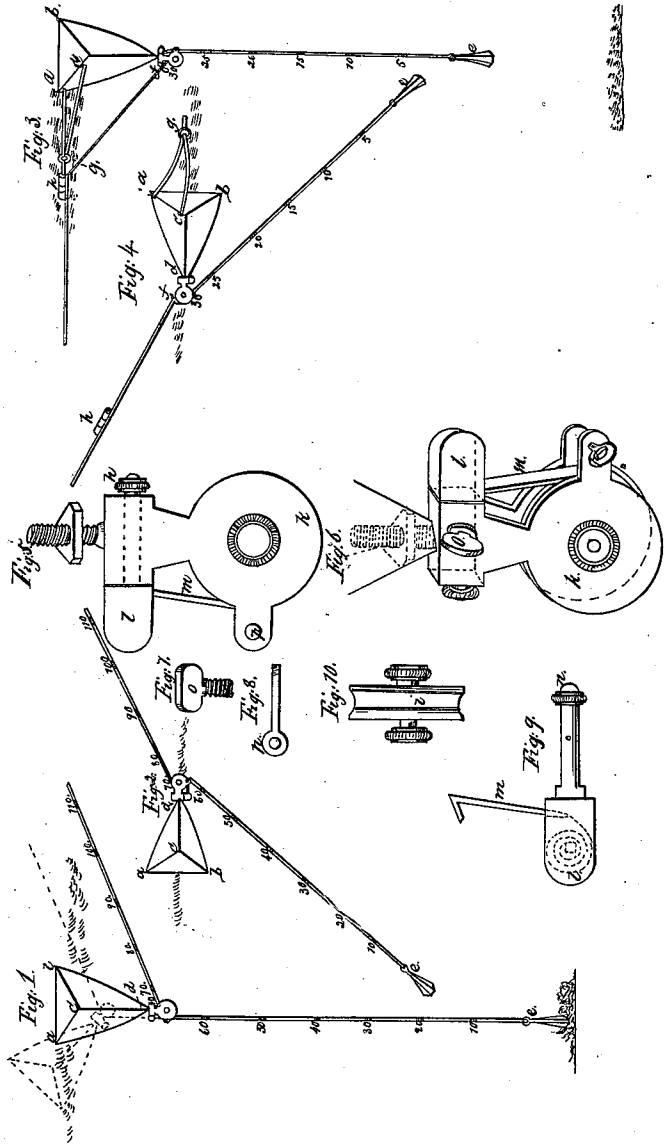
A. Pecou,

Bathometer.

No. 13,994. Patented Dec. 25, 1855.



UNITED STATES PATENT OFFICE.

ADOLPHE PÉCOUL, OF MARSEILLE, FRANCE.

COMBINED LOG AND SOUNDING LINE.

Specification of Letters Patent No. 13,994, dated December 25, 1855.

To all whom it may concern:

Be it known that I, ADOLPHE PÉCOUL, master mariner, of Marseille, in the Empire of France, have invented a new or Improved Marine Log, to be called "Sounding-Log;" and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed sheet of drawings, making a part of the same.

The object of this invention is the construction of an instrument which may be used both for measuring the distances traveled over by vessels or ships of any description, and also for sounding without stopping the ship's progress or heaving to, and in order that this invention may be fully and clearly understood I have on the annexed sheet of drawings represented or illustrated the way in which the same is or may be carried into effect and used.

Figures 1, 2, 3 and 4 show the sounding log in different positions and as applied to different uses. Figs. 5 and 6 are a front and perspective view respectively of the pulley. Figs. 8, 9 and 10 show various details of the sounding log.

The same letters of reference stand for like parts in the different figures.

This sounding log consists of a small buoy of brass, copper or any other suitable material, and which is capable of sustaining a weight of about three kilogrames or six pounds nine and three quarter ounces avoirdupois. This buoy which is shown a little inclined in the drawings, has the shape of an inverted triangular pyramid whose base *a*, *b*, *c* is an equilateral plane triangle, the three sides being isosceles triangles which are either flat like the base or slightly convex as shown in the drawing. At the vertex *d*, I fix a pulley over which passes the log line having a weight *e* at its end. The length of line between the buoy and the weight is variable, that is to say, it can be increased or diminished according to the degree of accuracy with which the ship's course is to be estimated or according to the depth of the water which it is desired to sound. This length having been determined upon, a pin *f* Figs. 3 and 4 is inserted between the strands of the line thus stopping the weight from sinking farther. From this pin backward at a suitable distance, I fasten to the line a floater *h* which receives the point or pin *g* attached to the two corners *a c* of the pyramid's base by means of a piece of line in such manner that the buoy *a b c d* being placed perpendicular as at Fig. 3, the three line ends draw the buoy equally. When after the operation of measuring or sounding, the log is hauled on board, the point *g* leaves the cork *h*, the weight *e* rises up toward the buoy and this latter assumes a horizontal position as shown at Fig. 4, so as to offer the least resistance to the water through which it passes. The sounding weight *e* offering very little surface hold, is intended to render the buoy more stable and to diminish its liability to being carried away by currents; hence the difference of drift in this and in the common log may be applied to ascertain the approximate velocity of the current; but the main object of this addition is to afford the means of sounding whenever required and without stopping or heaving to, which will be found a great convenience especially where nearing the land. For this purpose, I fix at the vertex of the buoy the apparatus shown in side and perspective views Figs. 5 and 6. This apparatus consists of a pulley *i* Fig. 10, capable of turning in a block K, K, suitably secured to the buoy, and a spring *m*, which is shown in Fig. 9 in an inverted position and also in Figs. 5 and 6. The spring *m*, is applied in a spring box *l*, which is secured to the bottom of the buoy. The sounding line passes over the top of this pulley and downward between it and the spring. While the buoy remains upright, as it will be caused to do by the friction of the line against the spring *m* so long as the weight hangs on the line, the spring allows the line to slip between itself and the pulley, but as soon as the weight touches the bottom it no longer keeps the buoy upright and the latter assumes the position shown in dotted lines in Fig. 1, which causes the end of the spring to bear hard against the line and stop it. The spring box *l*, is mounted on a pin *n* which allows it to be turned aside, and also to be fixed farther from or nearer to the block by means of a set screw *o* Fig. 7 for the purpose of increasing or diminishing the tension of the spring and causing the same to press more or less against the pulley.

p Fig. 8 is a screw pin which passes through the two cheeks *k k* of the block and prevents the line from coming off.

When the log is hauled on board, the buoy

assuming a horizontal position, the sounding line forms a very acute angle with the spring *m* so as to prevent the line from slipping back. In order that the line may pass between the spring and pulley, it must not have knots as usual to mark off the lengths, but I replace these knots by marks painted or fixed in any other suitable manner to the line so that it may not be prevented from slipping. When the log is to be used for sounding, the most suitable way of working it is as follows: After having passed the line over the pulley, fixed and adjusted the spring box *k* and inserted the pin *p*, the weight is taken to the vessel's stern and thrown overboard. I also find it convenient to fix some tallow on the bottom of the weight. As soon as the weight passes under the vessel's stern the buoy is thrown overboard from the stern and the line is paid out until the weight may be supposed to have touched the sea's bottom. This latter precaution is only necessary at night for in the day-time it is easily perceived when the weight touches the ground by the buoy floating in a horizontal position. In order to facilitate the operation and prevent the line from curling, it is coiled cross-wise on the log reel, also in order not to strain it unduly, the line has to be paid out quickly.

What I claim as my invention and desire to secure by Letters Patent is—

The sounding log, constructed substantially as herein described that is to say being composed of a buoy having applied to it a weight *e*, attached to a line passing between a pulley *i*, and a spring *m*, or its equivalent at the bottom, and this I claim whether used with or without a connection *g*, *h*, to connect the line with the top part of it, the whole constituting an instrument by which the speed of a vessel may be measured, or by which soundings may be taken without stopping or heaving to as herein fully set forth.

ADOLPHE PÉCOUL.

Witnesses:
JOHN L. HODGE,
R. E. STANLEY.