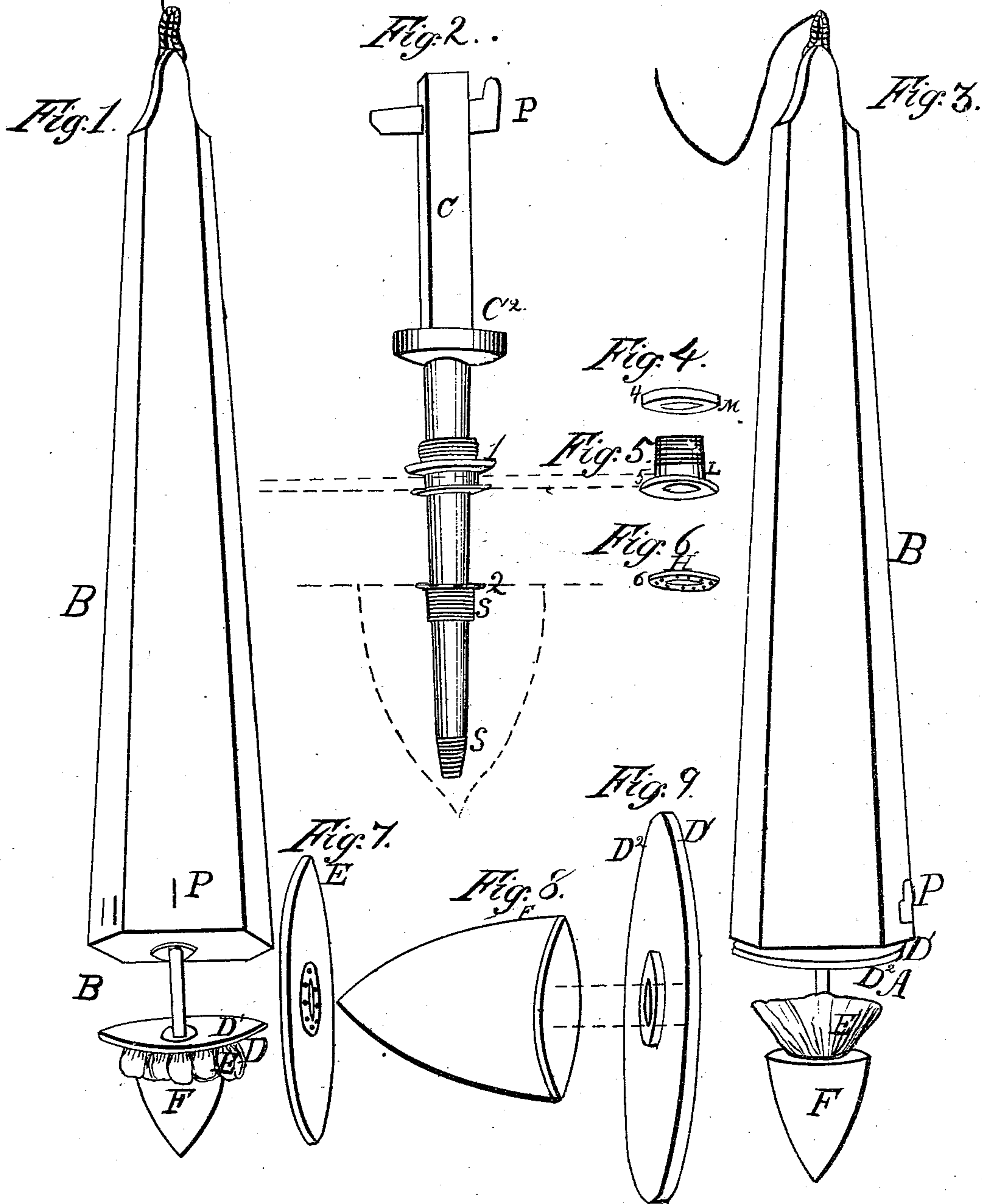


*H. S. Stellwagen*

*Bathometer*

*No. 2,899.*

*Patented Dec. 31, 1842.*





# UNITED STATES PATENT OFFICE.

HENRY S. STELLWAGEN, OF THE UNITED STATES NAVY.

## SOUNDING INSTRUMENT.

Specification of Letters Patent No. 2,899, dated December 31, 1842.

*To all whom it may concern:*

Be it known that I, HENRY S. STELLWAGEN, a lieutenant in the United States Navy, have invented a new and useful machine for the purpose of bringing up specimens of the bottom at sea for the uses of marine surveying and navigation generally, to be called "the Gedney coast survey sounding apparatus"; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which letters A and B represent the whole machine attached to an ordinary or any deep-sea sounding lead.

B, Figure 3, represents the lead with machine attached, sinking. The valves are opened by the resistance of the water and the cup or inverted cone is forced into the sand, &c., at bottom of the sea or water and withdrawn full of the sand. See Fig. 3.

B, Fig. 1, shows the lead and apparatus ascending. The valves are shut down on the edge of the cup by the resistance of the water in ascending and retain what it has scooped up from the bottom after being sunk into the sand or mud. See Fig. 1.

C, in Fig. 2, is the stem or shaft of the apparatus made of best wrought iron with a square head to enter into the bottom of sounding lead and fastened with an iron key K. It has a projecting ring or wing C<sup>2</sup> to make it firm to the lead, permanently attached at lower parts of square end. It has a screw at the end to attach a cup F in the form of an inverted hollow cone, also of iron, as at S, Fig. 2. Another screw is cut on the stem *c* at S<sup>2</sup>, Fig. 2, for a collar H of iron or brass perforated with small holes to attach a piece of thick buckskin E for the lower or stationary valve which is elevated or depressed by screwing so as to lie just below the upper edge of the cup F when it is put on. See Fig. 2, and dotted lines representing the position of the cup F and valve E. A sliding valve plays between screw S<sup>2</sup> and permanent ring C<sup>2</sup> at lower part of square head for which purpose the shaft is turned smooth and round. This valve consists of 2 leathers D' D<sup>2</sup> the lower one D<sup>2</sup> of very thick buskskin, the upper D' of sole or pump leather, cut round

and of about the same diameter as lower part of sounding lead; they are placed on a flanged hub L, Fig. 5, as a center and screwed tightly together by a flanged nut M, Fig. 4, the leather being placed between flanges.

D represents the sliding valve composed of the two leathers as above stated screwed together ready to be placed on the stem or shank and are the first put on for use. This valve slides up and down on the cylindrical part of the stem, rising and resting against the weight as it descends and falling and pressing upon the buckskin E and cup F as it ascends.

C is the stationary valve of buckskin sewed on to a thin collar as above stated with a screw inside to screw to shaft or stem at S, No. 2, and is put on after valve D is put on.

F is the hollow cone or cup of iron that screws on the end of shaft or stem and is either made with a point, as represented at Figs. 1, 3 and 8, or the stem passes clear through and its end is tapered and hardened to form the end of the cup, when it is screwed on so as to penetrate easily. The cup being screwed on after the valves are attached to stem, the square end of the machine is entered into a hole in the bottom of the lead made to receive it and it is keyed through the sides as represented at P of the drawings, Figs. 1, 2, 3.

Figs. 4 and 5 represent the two parts of the sliding valve collar or the hub and nut detached, the leather being put on (the buckskin below as before stated) the upper part or nut M, Fig. 4, is screwed down close upon the hub L. This is made of brass or iron or other suitable material.

H, Fig. 6, is a thin brass or iron collar with holes to sew the round piece of buckskin on to form the lower valve and with a screw inside to fit at S, No. 2, as shown by drawings Figs. 1 and 6.

Operation: As the weight B descends the resistance of the water will cause the valve D to rise on the cylindrical part of the stem C and rest against the under side of the large end of the weight and the valve E to fold upward as seen in Fig. 2. When at the bottom the cup enters the sand or mud and is filled. It is then drawn up and



in ascending the motions of the aforesaid valves will be reversed by the resistance of the water, valve E spreading over the mouth of the cup and valve D descending upon it to  
5 hold it firmly down upon the edge of the cup.

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

The before described apparatus for bring-

ing up specimens of the bottom at sea for 10 the uses of marine surveying, and navigation generally, whether constructed as herein set forth or in any other mode substantially the same.

HENRY S. STELLWAGEN.

Witnesses:

E. MAHER,

A. E. JOHNSON.