(No Model.)

C. P. TURNER.

SCOURING BRUSH FOR CLEANING SHIPS' BOTTOMS.

No. 573,115. Patented Dec. 15, 1896.

Fig 1.

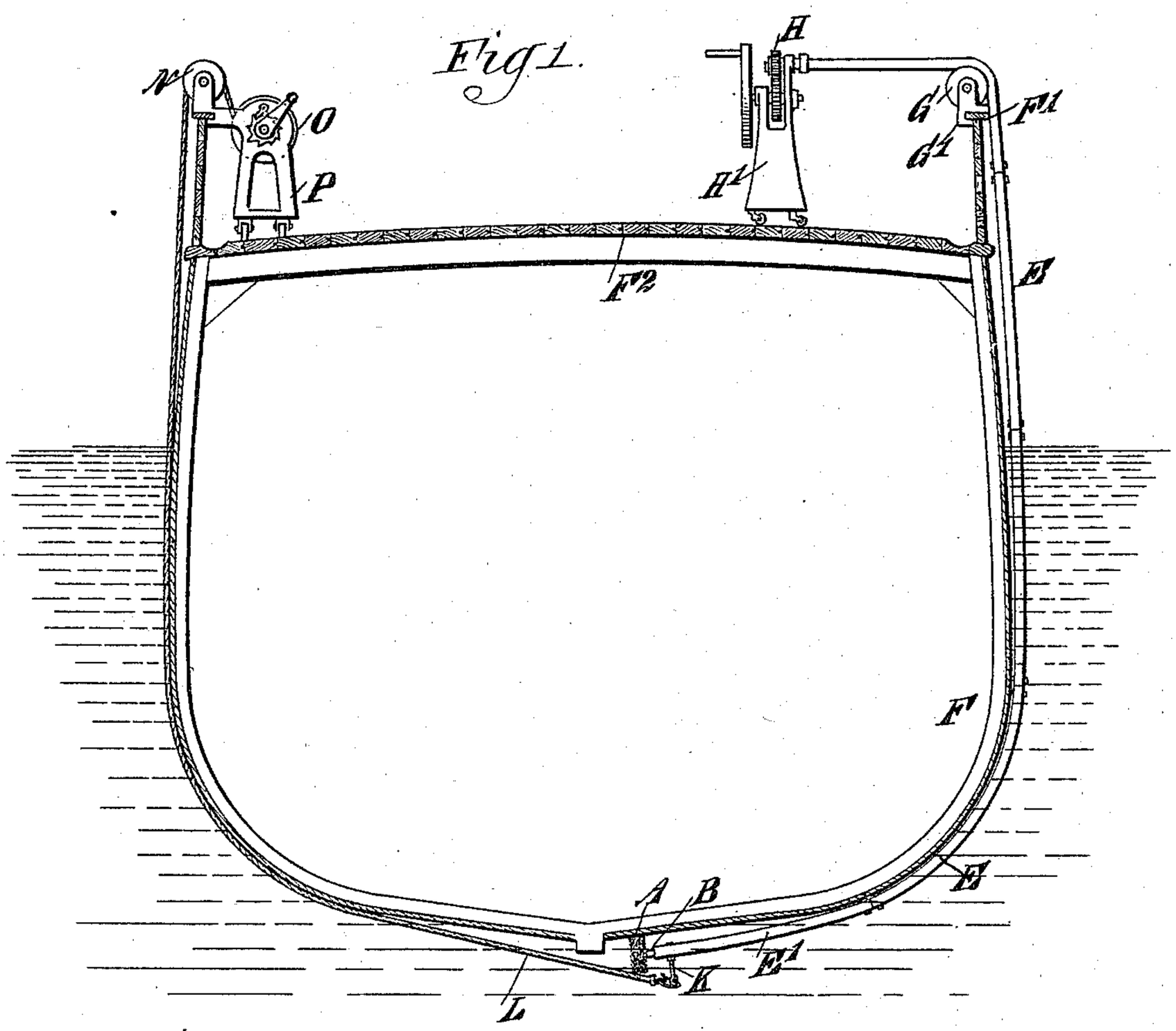


Fig 3.

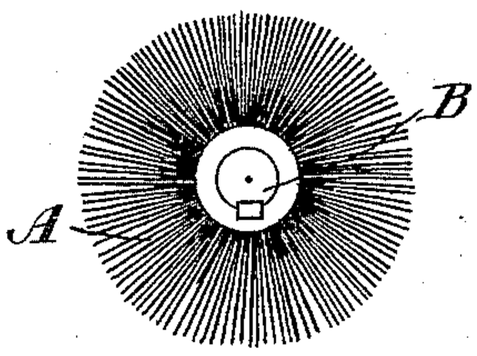


Fig 2.

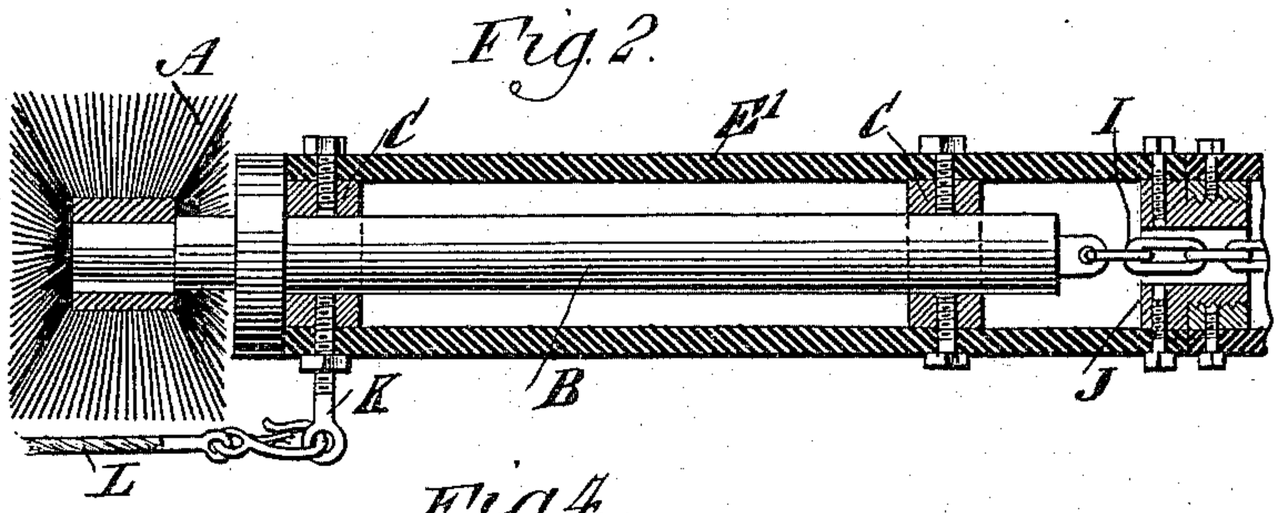
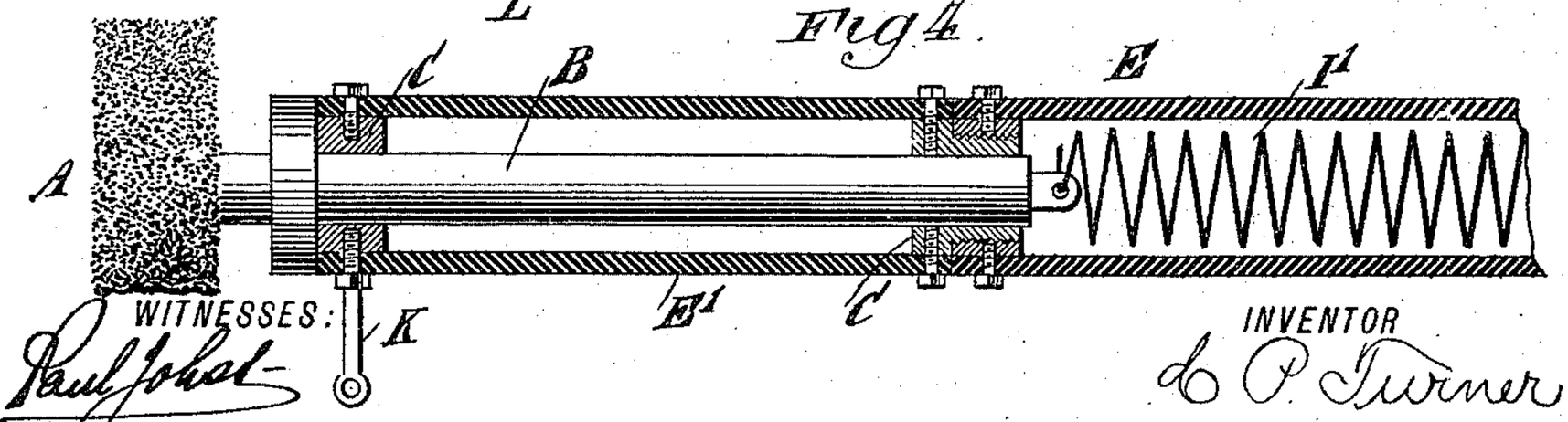


Fig 4.



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CHARLES P. TURNER, OF NEW YORK, N. Y.

SCOURING-BRUSH FOR CLEANING SHIPS' BOTTOMS.

SPECIFICATION forming part of Letters Patent No. 573,115, dated December 15, 1896.

Application filed December 6, 1895. Serial No. 571,265. (No model.)

To all whom it may concern:

Be it known that I, CHARLES P. TURNER, of New York city, in the county and State of New York, have invented a new and Improved Scouring-Brush for Cleaning Ships' Bottoms, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved scouring-brush more especially designed for effectively and rapidly cleaning the bottoms of ships.

The invention consists principally of a revoluble brush, a flexible shaft carrying said brush, and a casing made in sections and containing the shaft.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claim.

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

Figure 1 is a transverse section of a marine vessel with the device applied. Fig. 2 is a sectional side elevation of part of the improvement. Fig. 3 is an end view of the same, and Fig. 4 is a sectional side elevation of a modified form of the flexible shaft.

The improved device for cleaning ships' bottoms is provided with a revoluble brush A, having wire bristles, and secured with its hub on a shaft B, journaled in bearings C, secured in the outer section E′ of a tubular casing E, made of wood or other flexible material, so as to readily conform to the shape of the hull of the ship F, the bottom of which is to be cleaned. The casing E is adapted to pass over a pulley G, journaled in a bearing G′, fitted to slide longitudinally on the top of the rail F′ of the ship F, as plainly indicated in Fig. 1.

The upper end of the casing E is connected with the frame H′ of a power-transmitting device H, of any approved construction, and the flexible shaft is arranged to be driven by a motor or other suitable power. The frame H′ for said transmitting device is provided with casters adapted to travel on the deck F^2 of the vessel, so that the casing E can be moved along the vessel or drawn up or let down on the side of the hull, as the case may be.

The inner end of the shaft B is connected with a flexible shaft I, extending through the casing E, and attached at its upper end to the transmitting device H, so that when the latter is set in motion a rotary motion is transmitted by the shaft I to the brush-shaft B and the brush A, so that the latter is revolved, and by being held in contact with the bottom of the vessel the latter is scraped and cleaned. The flexible shaft I is of any approved construction. It may be in the form of a chain, as shown in Fig. 2, or in the shape of a spring I′, as indicated in Fig. 4. The flexible shaft I is preferably made in sections connected with each other by suitable couplings, the sections corresponding in length to the length of the sections of the casing E. The flexible shaft I has bearings J within the casing E, said bearings being preferably arranged at the joint of the adjacent sections of the casing E, as indicated in Fig. 2.

On the outermost section E′ of the casing E is secured an eye K, connected with one end of a rope L, extending around the hull of the vessel F on the opposite side from which the casing E is located, as indicated in Fig. 1. The upper end of the rope L passes over a pulley N, to then wind upon a drum O, journaled in a frame P, adapted to travel lengthwise on the deck F^2 of the vessel F. The drum O is turned by hand, but a suitable motor may be employed. By this arrangement the brush A can be drawn down along the outside of the hull of the vessel F and held in contact with the outside to clean the bottom of the vessel, it being understood that the brush A is revolved during this operation, so as to insure an effective and rapid cleaning of the ship's bottom.

It is understood that when the rope L is wound up on the drum O and the casing E with the brush A is drawn downward the frame H′ of the transmitting device H travels transversely on the deck F^2 of the vessel, and when it is desired to return the brush A then the frame H′ is drawn inwardly across the deck of the vessel, the rope L then unwinding from the drum O. If desired, the section

E′ of the casing E can be held in the hand of an operator and the brush thus applied to the surface being cleaned. This use of the section E′ when held in the hand of the operator may take place when the vessel is in dry-dock.

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

The combination with a vessel, of a bearing slidably mounted on one gunwale of the vessel, a pulley in the bearing, a flexible shaft passing over the pulley, a power-transmitting device carried by the deck of the vessel and connected to the flexible shaft, a brush driven by the flexible shaft, a flexible connection attached to the brush, a winding device having a part slidably connected with the other gunwale of the vessel, and a pulley carried by the winding device over which the flexible connection passes to said device, substantially as described.

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