

No. 850,246.

PATENTED APR. 16, 1907.

J. H. PEGRAM.
DEVICE FOR CLEANING SHIP BOTTOMS.

APPLICATION FILED NOV. 14, 1906.

Fig. 1.

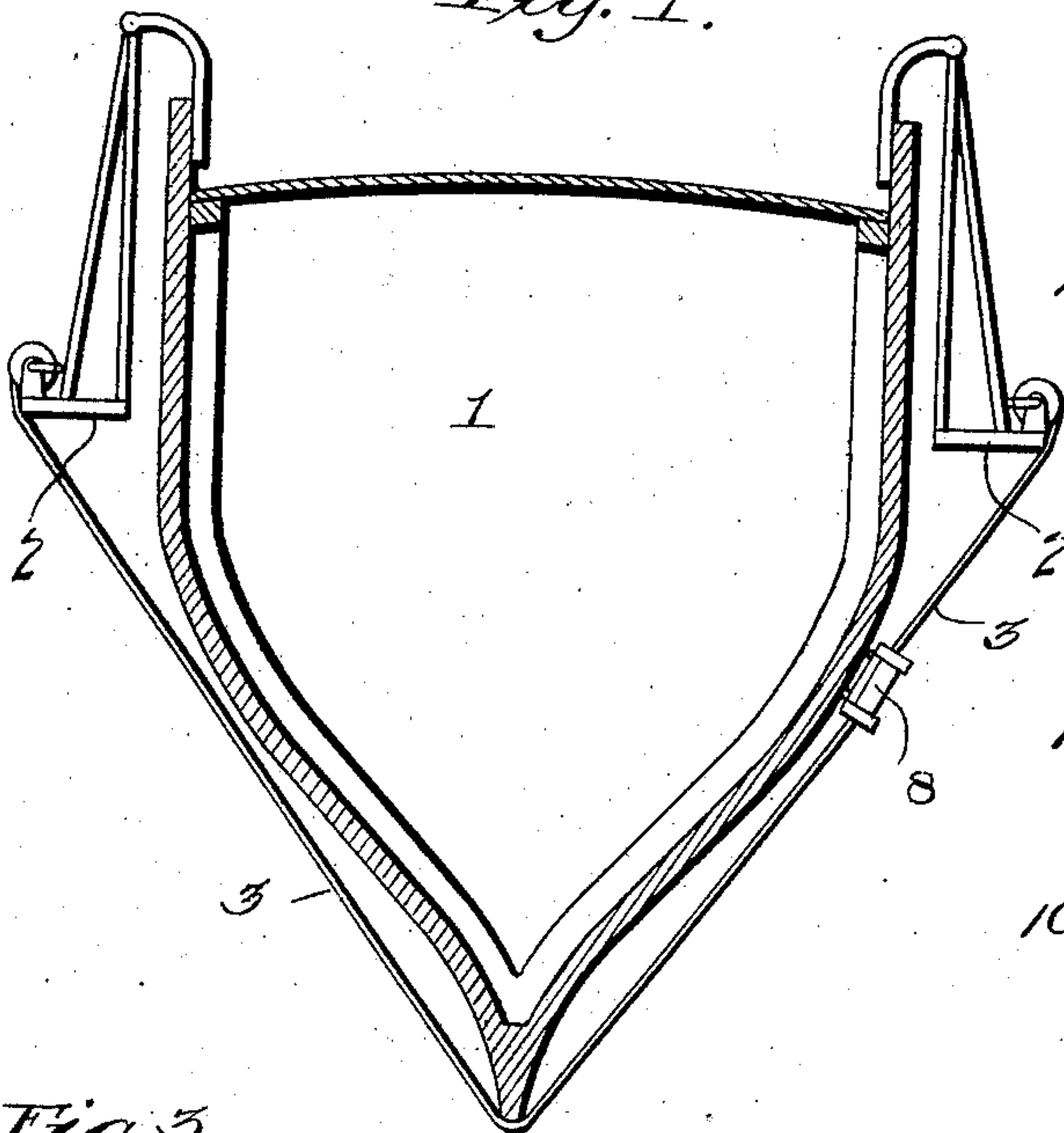


Fig. 2.

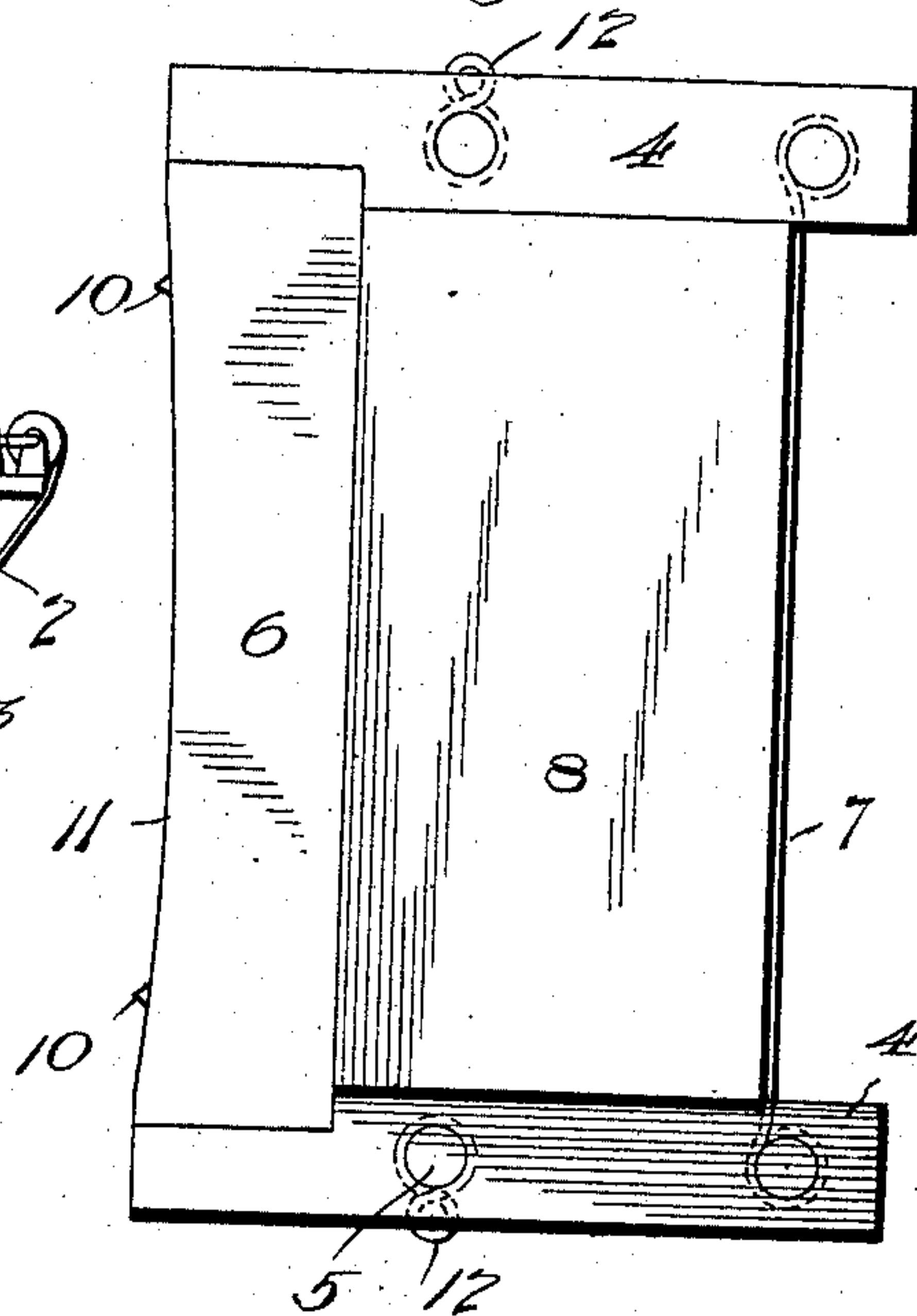


Fig. 3.

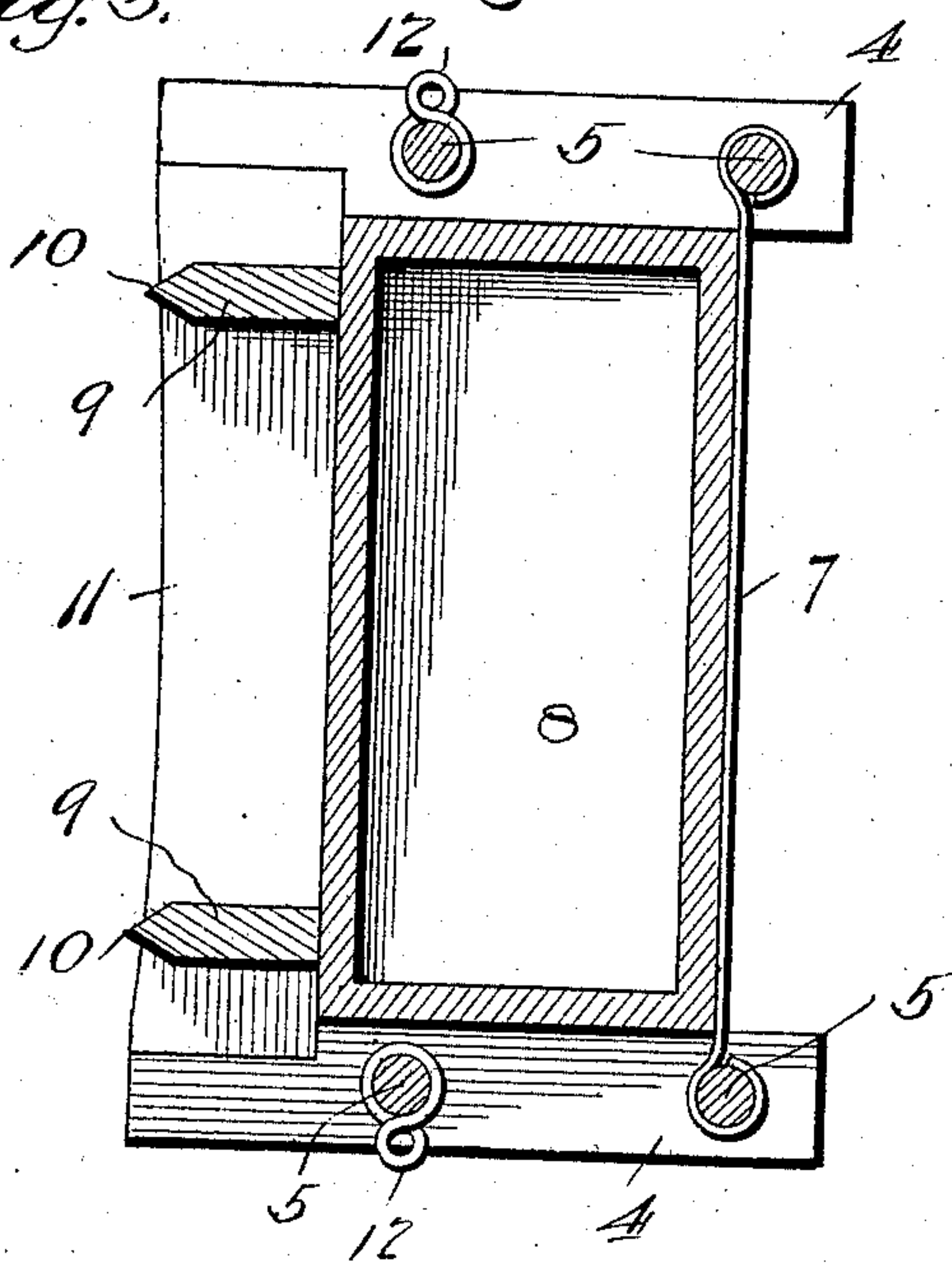
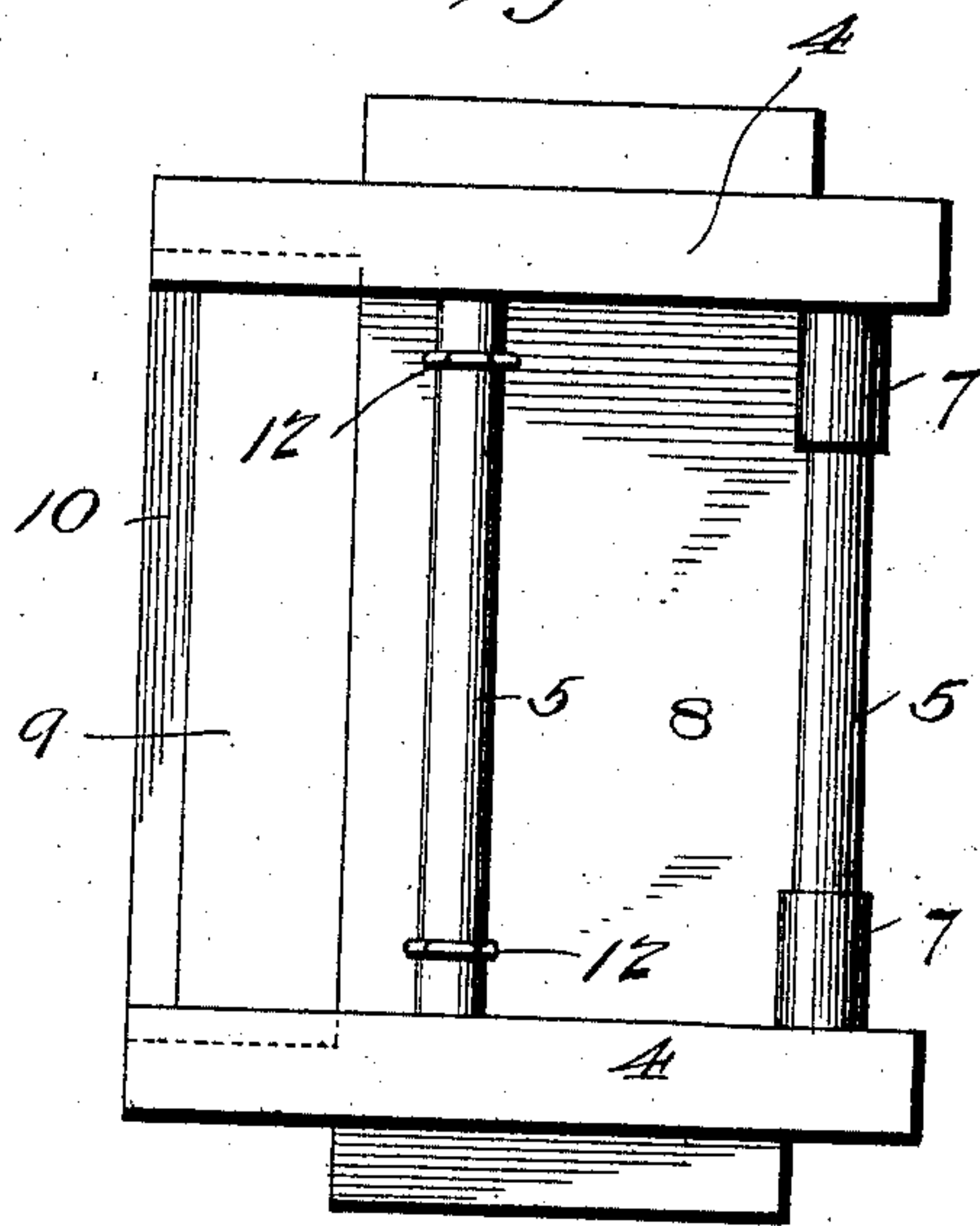


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

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DEVICE FOR CLEANING SHIP-BOTTOMS.

No. 850,246.

Specification of Letters Patent.

Patented April 16, 1907.

Application filed November 14, 1906. Serial No. 343,405.

To all whom it may concern:

Be it known that I, JOHN H. PEGRAM, a citizen of the United States, residing at Longspur, in the county of Bland and State of Virginia, have invented new and useful Improvements in Devices for Cleaning Ship-Bottoms, of which the following is a specification.

This invention relates to devices for cleaning ship-bottoms without beaching the vessel or removing her from the water and of that class including scraping means under buoyant influence to maintain the said means in contact with the submerged portion of the vessel and permit the cleaner to be readily moved longitudinally or vertically to thoroughly and effectively remove accumulations adhering to the hull below the waterline. One of the great difficulties to be overcome in producing a satisfactory device of this character is to cause the scraping means to adhere closely to the side of the vessel and to bring said means to bear with sufficient force against the vessel's bottom to set up a thorough cleaning operation. This difficulty is overcome in the present instance by arranging a buoyant element or float under the scrapers and relying upon the tendency of the complete device to rise to the surface of the water to effect a positive engagement of the scrapers with the side of the vessel-body.

In the accompanying drawings, Figure 1 is a sectional elevation showing the hull of a vessel without the usual equipments and illustrating the improved device applied thereto in operative position. Fig. 2 is a detail elevation of the improved device. Fig. 3 is a longitudinal vertical section through the same. Fig. 4 is a top plan view thereof.

Similar numerals indicate corresponding parts throughout the several views.

The numeral 1 designates the hull of a ship having stages 2 suspended therefrom to engage ropes or cables 3 and prevent the latter from coming in contact with the bilge of the ship, the stages also serving as supports for the operators of the scraping device. The improved device is arranged as shown in Fig. 1, the rods or cables being connected thereto and passing over opposite sides of the hull and up to the stages and readily accessible to actuate the scraping device either longitudinally or upwardly and downwardly from the submerged portion of the hull or bottom of the ship.

The improved scraping device is shown by the remaining figures of the drawings, and consists of a frame having end members 4, connected by tie-rods 5 and top beams or strips 6, the lower tie-rods having suspending-straps 7 terminally attached thereto and extending from one to the other. This frame constitutes what may be properly termed a "cradle" and is so shaped as to receive a float 8, preferably of the form shown, and resting on the suspending-straps 7 below the beams or strips 6. Extending across the top portion of the device and held in the strips or beams 6 are transverse scrapers 9, formed with upper knife-edges 10, the upper edges of the beams or strips 6 between the scrapers being concaved, as at 11, to adapt the top portion of the scraping device to fit snugly against the bottom of the vessel or ship. The top portion of the scraping device between the scrapers is cleared, and the accumulations removed from the submerged bottom of the vessel will by this means be readily liberated from the scrapers, or, in other words, the scrapers will not be hindered in effectively performing the scraping operation.

The float being beneath the scrapers, as shown, forces said scrapers closely against the submerged bottom of the vessel and with such force as to loosen up marine growths and other materials adhering to the vessel-bottom. The scraping device can be readily moved by the ropes or cables 3 fully over the submerged hull of the vessel with material advantage.

Suitable windlasses will be employed for raising and lowering the scraping device and be arranged to cooperate with the ropes or cables 3. These ropes or cables 3 are attached to bails 12, movably attached to the upper tie or connecting-rods 5, the said bails being free to swing on the rods engaged thereby, and thus aiding in causing the scraping device to closely engage the bottom of the ship.

The proportions of the scraping device may be varied and the shape of the several parts may be modified. The scrapers are fitted in recesses in the beams or strips 6 and held by suitable means to render them removable and replaceable by other like devices when they become worn or for the purpose of sharpening the scraping edges thereof. The invention is not limited in the least to any prescribed shape, and the float

may be cylindrical or angular in cross-section, and the cradle, as provided by the frame, will be correspondingly shaped to receive the float.

5 What I claim is—

1. A scraping device of the class described, including a frame having end members, tie-rods connecting the same, straps associated with said tie-rods, strips carried by the end
10 members and each having a concaved edge, scrapers extending slightly beyond the edges of said strips, and a float removably supported between said straps and scrapers.

2. A scraping device of the class described,
15 including a frame having end members, tie-rods connecting the same, straps associated with said tie-rods, strips carried by the end members and each having a concaved edge, scrapers extending slightly beyond the edges
20 of said strips, a float removably supported between said straps and scrapers, and flexible

means having connection at opposite sides of the frame for actuating the same.

3. A scraping device of the class described, including a frame having end members, tie-
25 rods connecting the same, straps associated with said tie-rods, strips carried by the end members and each having a concaved edge, scrapers extending slightly beyond the edges of said strips, a float removably supported
30 between said straps and scrapers, flexible means having connection at opposite sides of the frame for actuating the same, and suspended stages associated with the flexible
35 means.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN H. PEGRAM.

Witnesses:

JOHN GEMMELL,
B. F. BALDWIN.