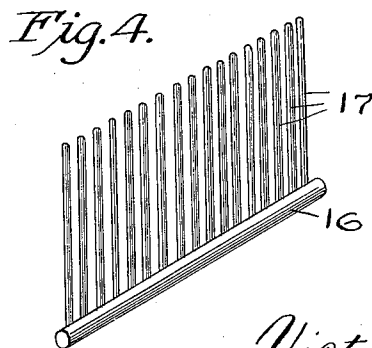
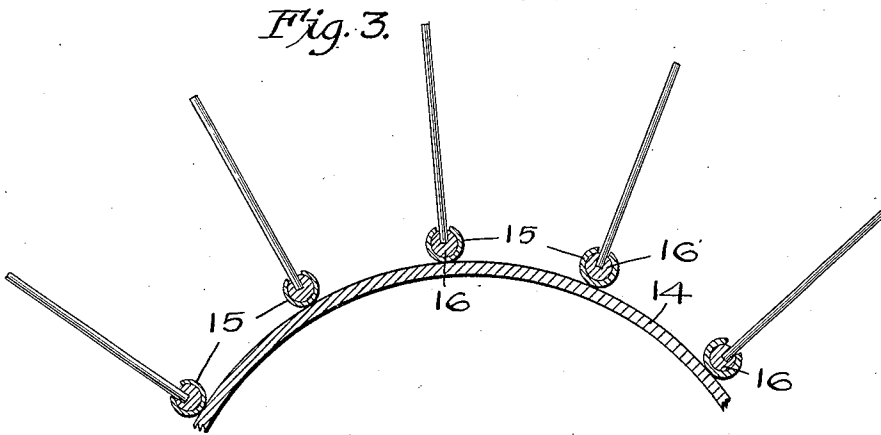
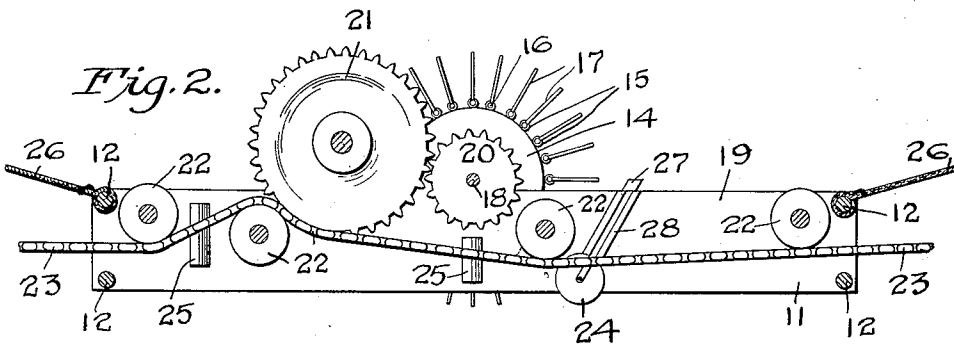
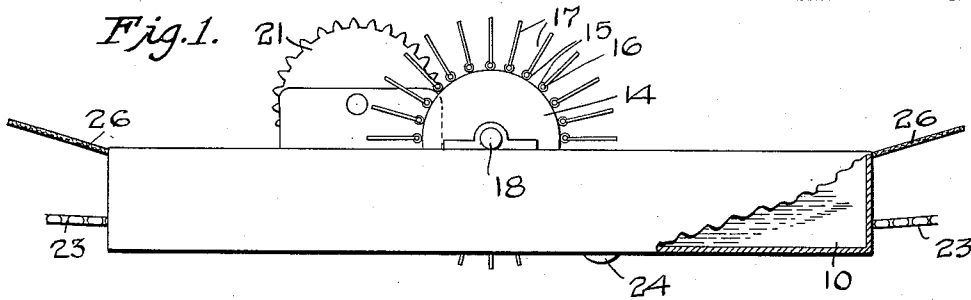


W. GOTTLIEB.
SHIP CLEANER.
APPLICATION FILED MAR. 25, 1911.

1,008,136.

Patented Nov. 7, 1911.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 5.

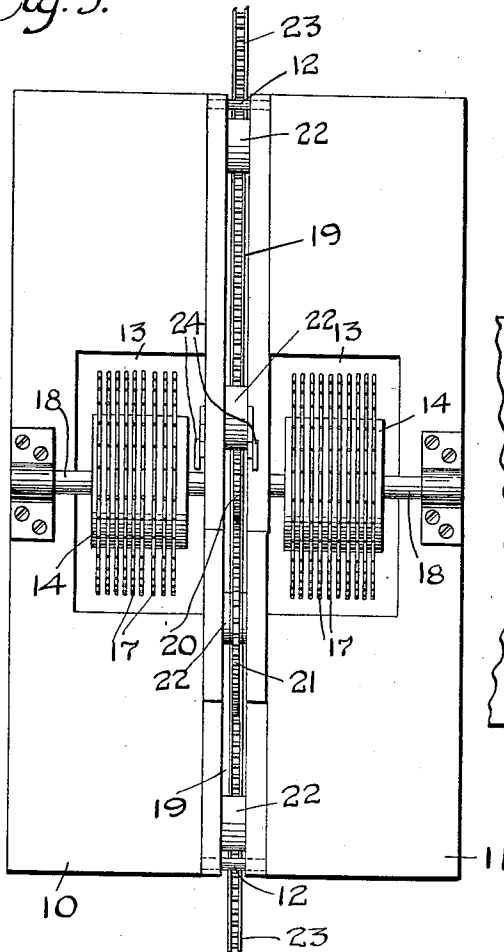


Fig. 6.

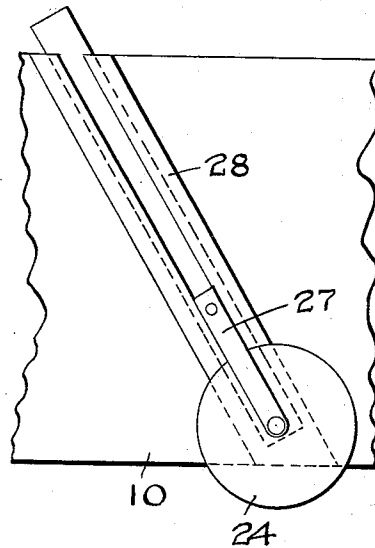
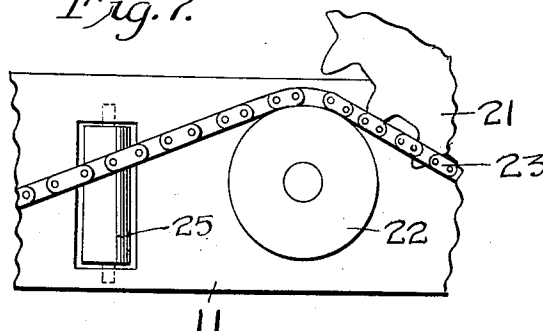


Fig. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM GOTTLIEB, OF PORT JERVIS, NEW YORK.

SHIP-CLEANER.

1,008,136.

Specification of Letters Patent.

Patented Nov. 7, 1911.

Application filed March 25, 1911. Serial No. 616,868.

To all whom it may concern:

Be it known that I, WILLIAM GOTTLIEB, a citizen of the United States, residing at Port Jervis, in the county of Orange and State of New York, have invented new and useful Improvements in Ship-Cleaners, of which the following is a specification.

This invention relates to cleaners for ships' bottoms and consists of a portable device adapted to be carried over the bottom of a vessel and provided with scrapers adapted to remove barnacles, weeds and other accumulations without the necessity of docking the vessel as will be more fully described in the following specification, set forth in the claims and illustrated in the drawings, wherein,—

Figure 1 is a side elevation of the device partly in section. Fig. 2 is a longitudinal sectional view. Fig. 3 is a detail of a scraping drum. Fig. 4 is a perspective view of one of the scraping combs. Fig. 5 is a plan view. Fig. 6 is a detail of the adjusting rollers. Fig. 7 is a detail showing the cable guide.

The device consists of two hollow tanks 10 and 11, arranged side by side and connected by rods 12 which provide an open space between the two tanks to contain the operating mechanism. The tanks are also provided with recesses 13 to contain the drums 14 having on their outer faces sockets 15 into which are slid the backs 16 of the combs 17. These combs may be made of steel or other hard metal and are adapted to come in contact with the bottom of a vessel and while rotating clean off any accumulation thereon. The drums 14 are provided with a common shaft 18 journaled on the tanks 10 and 11 and carrying within the well 19 a gear wheel 20 which meshes with the sprocket wheel 21.

Within the well-way 19 are arranged pulleys 22 over which passes the chain or cable 23 whose links mesh with the teeth of the wheel 21 and rotate same, the chain being held against the wheel by means of one of the pulleys 22. On each side of the well-way are arranged adjustable rollers 24 which are adapted to limit the play of the scrapers

of the combs 17, and at suitable points vertical rollers 25 are provided to allow for the side play of the chain 23. At each end of the well-way and to the cross rods 12 are secured cables 26 by which the scraper is pulled over the bottom of a vessel when operating it. The chain 23 is attached permanently to the deck of the vessel while the cleaner is itself hauled over the bottom of the ship by means of cables 26 and the passage of the chain over the wheel 21 rotates same with the wheel 20 and causes the drum 14 to revolve and the comb 17 to scrape any accumulation from the bottom of the vessel.

The tanks 10 and 11 are hollow in order to cause the device to float upward against the bottom of the vessel and to hold the lower side of the device against the bottom as it passes around the sides of the vessel. The drawings illustrate the device ready for action and about to be passed over the side of the vessel when it reverses itself on coming in contact with the bottom thereof.

The rollers 24 are carried by slides 27 traveling in guide-ways 28 and which may be adjusted so as to permit the necessary play of the scrapers.

It is obvious that other modifications may be resorted to or the parts otherwise arranged without departing from the essential features above described.

What I claim as new and desire to secure by Letters Patent is,—

1. In a ship cleaner, the combination with a frame formed of tanks and cross connections, of revolving scrapers journaled in well-ways in the tanks, a sprocket wheel operating the scrapers and a permanently located chain geared with the sprocket wheel.

2. In a ship cleaner, the combination with tanks having well-ways and united by cross rods, of rotating scrapers journaled in the well-ways, cables to operate the tanks, a stationary chain, a sprocket wheel operated by the chain and geared with the scrapers, and guide rollers.

3. In a ship cleaner, the combination with a frame made up of hollow tanks having a space between them, of rotating scrapers

carried at each side of the space, a gear wheel on the shaft of the scrapers, a sprocket wheel meshing with the gear wheel, a stationary chain carried at each side of the
5 vessel and operating the sprocket wheel, cables for moving the tanks adjusting rollers, and anti-friction rollers.

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

WM. GOTTLIEB.

Witnesses:

JOHN F. CLEARY,
FRANK A. BROWN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."