

No. 633,910.

Patented Sept. 26, 1899.

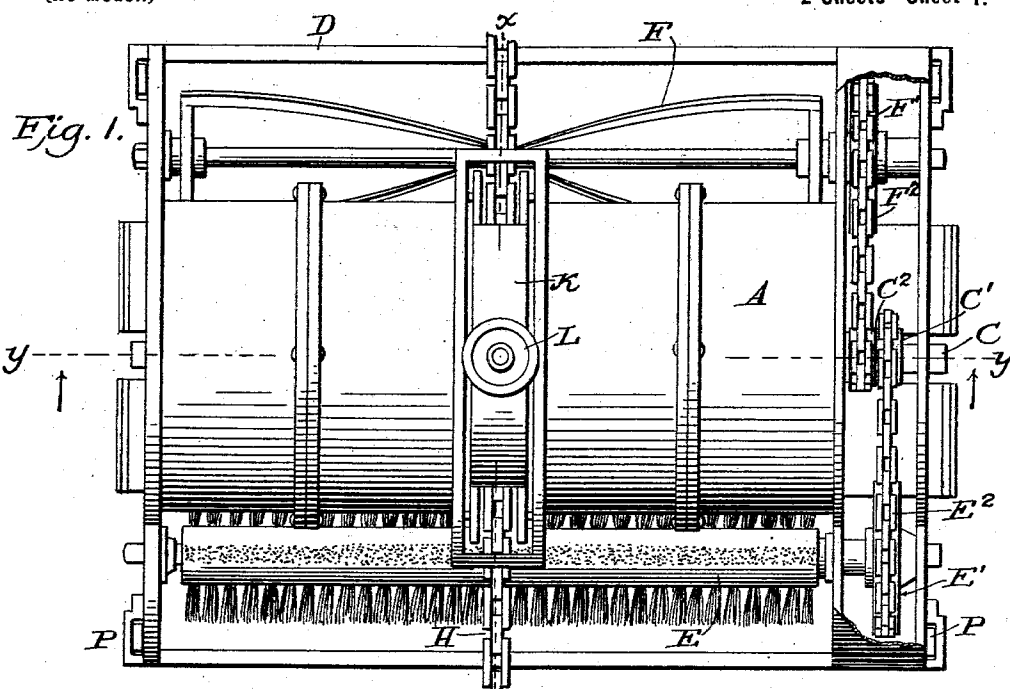
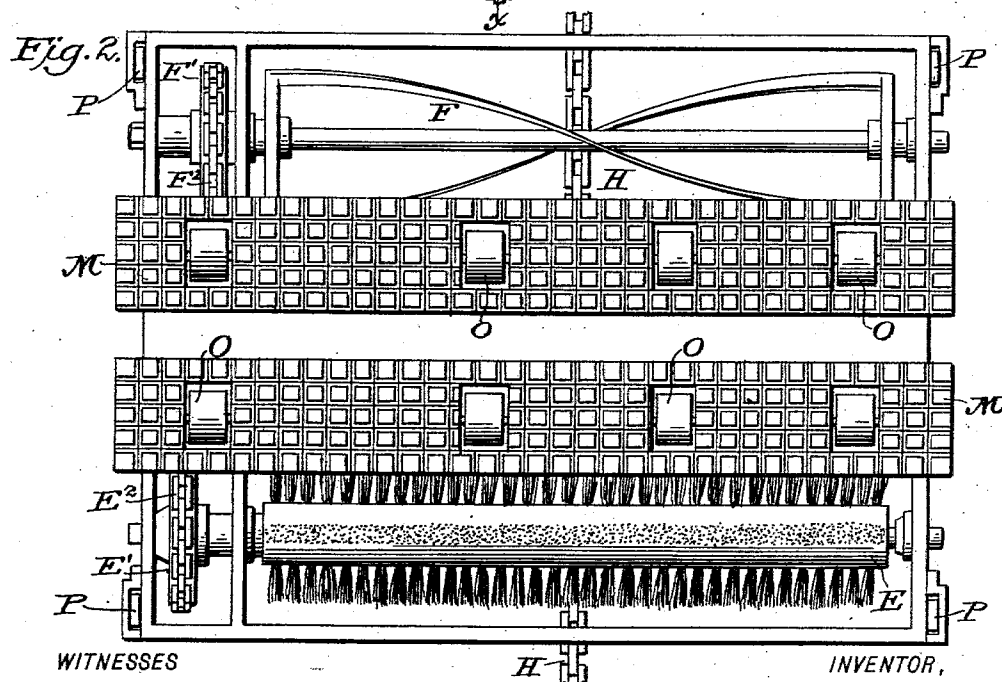
J. SCHNEPF.

MACHINE FOR CLEANING SHIPS' BOTTOMS.

(Application filed June 20, 1898.)

1 (No Model.)

2 Sheets—Sheet 1.



WITNESSES

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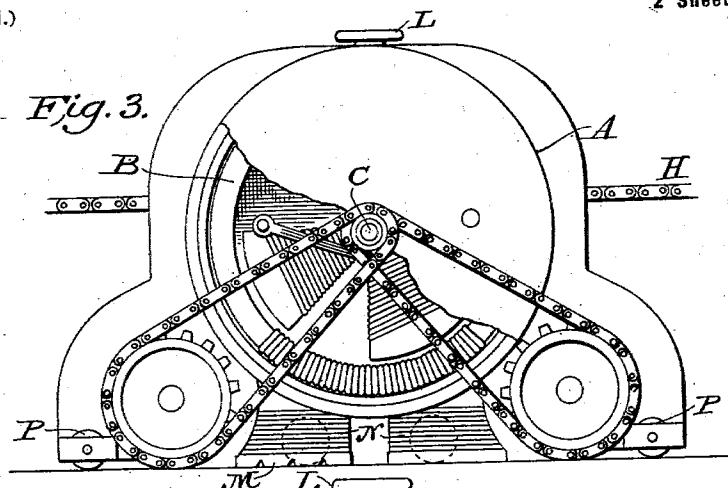
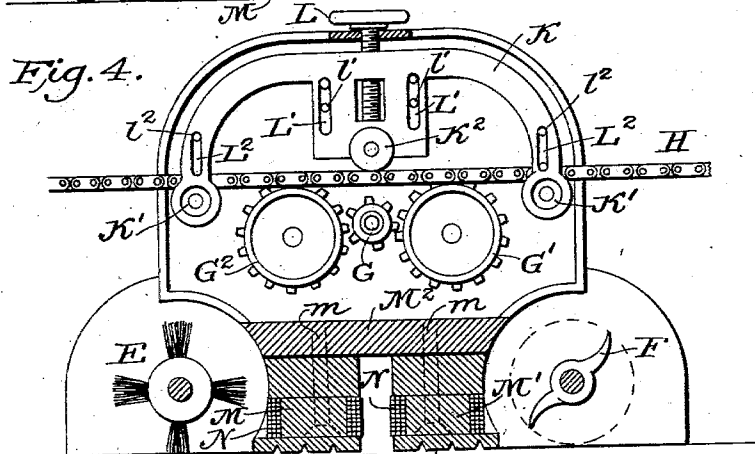
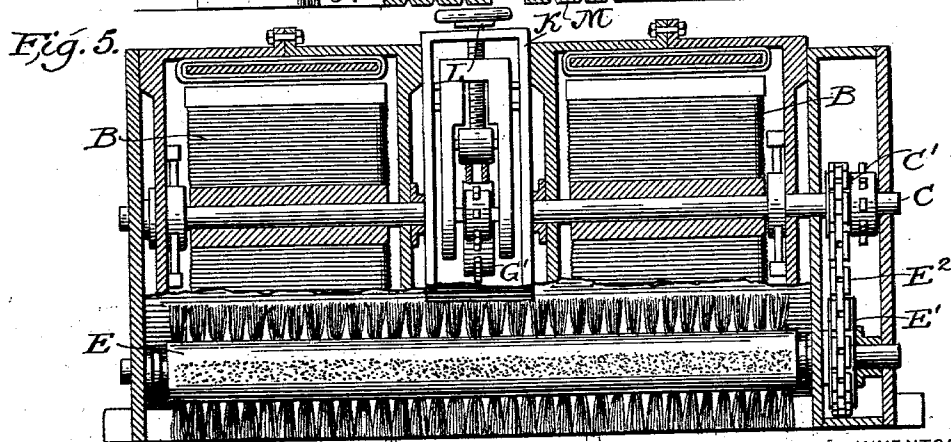
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2 Sheets—Sheet 2.

(No Model.)



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN SCHNEPF, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO WILLIAM C. DOSCHER, OF SAME PLACE.

MACHINE FOR CLEANING SHIPS' BOTTOMS.

SPECIFICATION forming part of Letters Patent No. 633,910, dated September 26, 1899.

Application filed June 20, 1898. Serial No. 683,936. (No model.)

To all whom it may concern:

Be it known that I, JOHN SCHNEPF, a citizen of the United States, residing at New York city, Manhattan borough, county of New York, and State of New York, have invented certain new and useful Improvements in Machines for Cleaning Ships' Bottoms, of which the following is a full, clear, and exact description.

My invention relates to devices for cleaning the bottoms of ships. When ships have been on a long voyage without being docked, especially in a warm climate, the growth of barnacles and grass upon the bottom thereof is very considerable, although protected by copper or paint, and this growth reduces the speed of the ship very materially. Often it is inconvenient, if not impossible, to dock a vessel to remove this growth, and some means of cleaning it off without the necessity of having recourse to divers for this purpose is extremely desirable.

In the present embodiment of my invention the object is to provide a device having a motor which shall drive a scraper and brush and move the same along a cable which can be passed under the bottom of the ship.

In the preferred embodiment of my invention shown in the accompanying drawings, Figure 1 is a plan view of my device with the gear-casing broken away. Fig. 2 is a plan view from underneath of same. Fig. 3 is an end view, the end casing being removed and a part of the motor-casing broken away. Fig. 4 is a vertical sectional view on the line X X of Fig. 1. Fig. 5 is a longitudinal vertical sectional view on the line Y Y of Fig. 1, looking in the direction of the arrow, parts being in elevation and the lower part of the machine in elevation to show the brush.

Referring to the drawings, A represents a casing for the motor B, preferably water-tight, so as to protect the same from injury.

C is a shaft rotating with the armature of the motor and carrying sprocket-wheels C' C² outside of this water-tight casing.

D is a frame which carries the motor and motor-casing and also supports, preferably at opposite sides thereof, the brush E and the scraper F. The brush is rotatable and carried on a shaft extending through the frame and having at one end the sprocket-wheel E',

over which passes the driving-chain E² from the sprocket-wheel C'. The scraper F is carried on a shaft which has a sprocket-wheel F', over which passes the driving-chain F² from the sprocket-wheel C².

G is a small toothed wheel carried inside of the motor-casing on the shaft C and which meshes with larger toothed wheels G' G².

H is a cable preferably in the form of a chain having links into which mesh the teeth on the wheels G' G².

K is a yoke adjustably carried by the screw L and having at the ends of its arms the rollers K' and at the center the roller K². The chain H passes over the rollers K' and under K², and as it may be raised or lowered by manipulating the screw L it may thus be raised out of contact with the gears G' and G² or lowered into operative relation therewith. L' L² are slots in this yoke, and I' I² are stationary pins in the casing to guide this yoke in its movements.

M M are magnets, preferably in the form of soft-iron pieces in this embodiment, running across the base of the frame and having their lower faces in the plane of operation of the outer edges of the scraper and brush.

M' are pole-pieces attached to a cross-piece M² by the screws m, all of which parts are preferably made of soft iron. N N are coils of wire around these pole-pieces M' M', which when energized magnetize said pole-pieces and consequently convert the parts M M into magnets.

O O are rollers suitably disposed on the other side of the device as a whole, and P P are other rollers on the frame.

The operation of my device is as follows: The cable H is passed from the deck of a ship down and under the bottom of the same and up the other side to the deck again. The cleaning device is placed in position on the chain, with the rollers O and P against the side of the vessel. The motor is then started, and as the chain is stationary the motor will rotate the gear-wheel G and consequently the gear-wheels G' G², which will impel the device as a whole along the chain. The motor-shaft will also rotate the gear-wheels C' C², which will by the chains E² and F² rotate the scraper and brush. The scraper is intended

to pass over the ship's bottom first and tear and loosen the accumulated growth thereon, after which the brush will sweep off and clean the bottom.

- 5 In many modern ships, and in war-ships especially, the skin of the ship is made of iron or steel, and consequently as the device travels over the bottom the magnets M M will be attracted toward this metal skin and will tend
10 to keep the scraper and brush close to the bottom of the vessel. Of course it will be obvious that electric wires to convey the electric current to the motor will be provided, with slack enough, so that the cleaning device may
15 run from the deck on one side of the vessel clear around the cable under the ship to the deck on the other side. The cable may then be moved forward or aft and the device will clean another strip of the bottom.
- 20 It will be obvious that very many modifications of the construction herein shown may be made without departing from the spirit of my invention.

What I claim is—

- 25 1. In a device of the character described in combination, a frame, a motor carried by said frame, a rotating cleaning device, operating connecting means between said motor and

cleaning device, a cable, and means driven by said motor to move said frame along said cable. 30

2. In a device of the character described in combination, a frame, a casing carried by said frame, a motor in said casing, a scraper at one side of said motor, a movable brush located 35 on the other side of said motor, connections from said motor to brush and scraper to drive the same, a cable extending to said frame to control the movements thereof, and a connection between said motor and cable to move 40 said frame along said cable.

3. In a device of the character described in combination, a frame, a motor carried by said frame; a cable running to said frame to control the movements thereof, a connection be- 45 tween said motor and cable to move said frame along said cable said motor embracing in part a pole-piece extending across said frame and located at the under side thereof.

Signed at New York this 15th day of June, 50 1898.

JOHN SCHNEPF.

Witnesses:

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