

(No Model.)

T. THORSEN.

BOTTOM SCRAPER FOR VESSELS.

No. 374,279.

Patented Dec. 6, 1887.

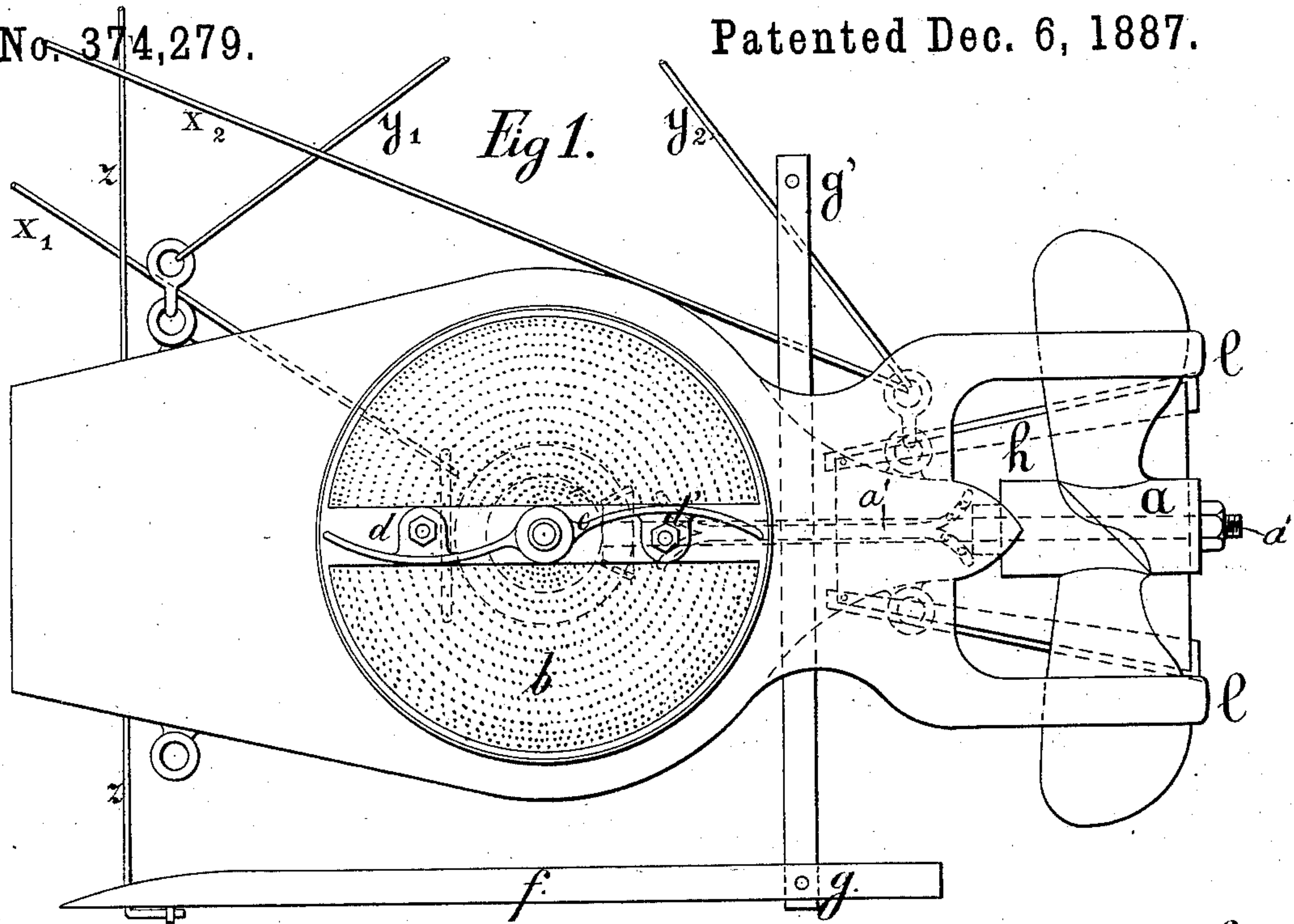
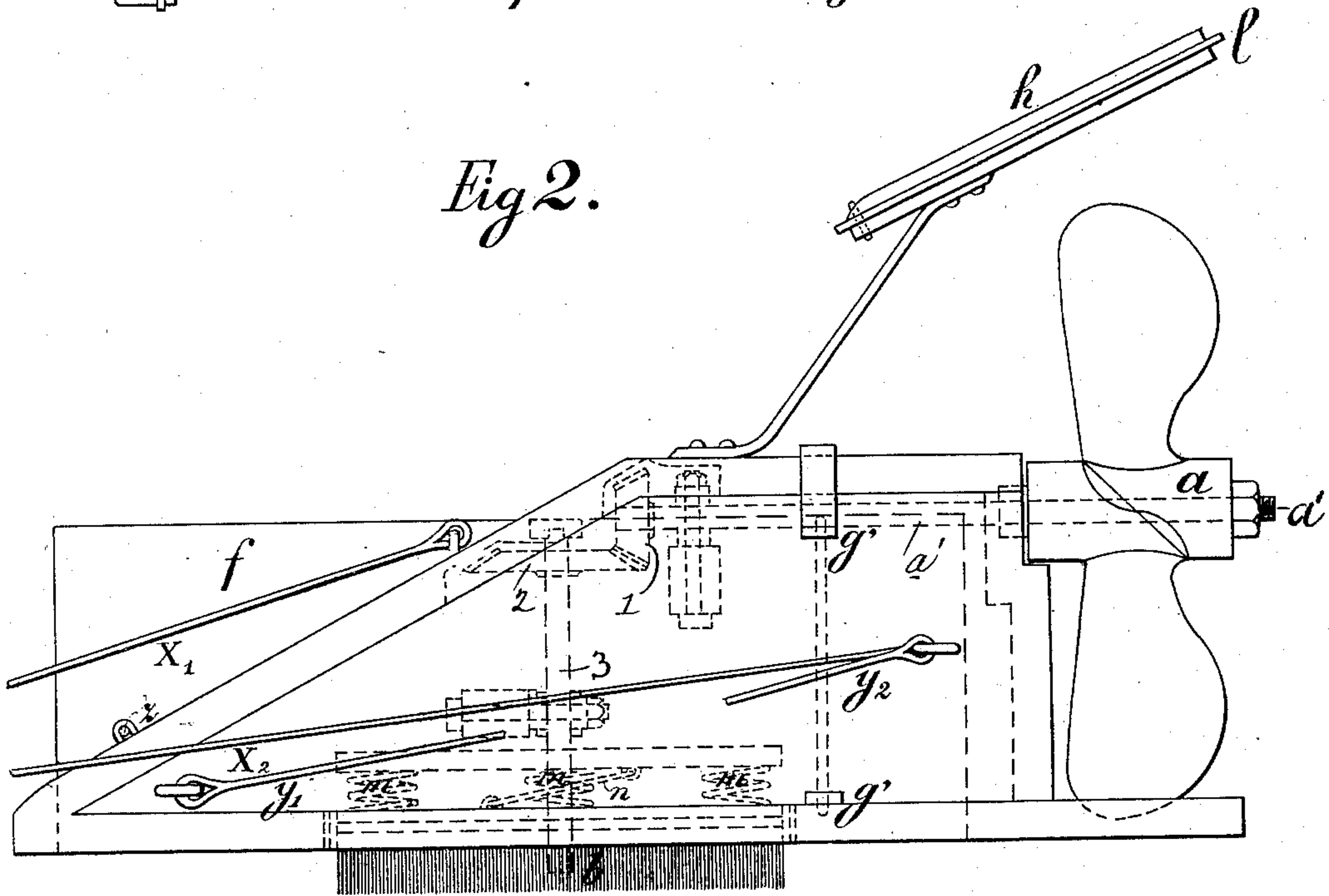


Fig 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

THEODOR THORSEN, OF ARENDAL, NORWAY.

BOTTOM-SCRAPER FOR VESSELS.

SPECIFICATION forming part of Letters Patent No. 374,279, dated December 6, 1887.

Application filed March 29, 1887. Serial No. 232,877. (No model.) Patented in Norway July 7, 1886, No. 183.

To all whom it may concern:

Be it known that I, THEODOR THORSEN, a subject of the King of Norway, and a resident of Arendal, Norway, captain, have invented Improvements in Bottom-Scrapers for Vessels, (patented in Norway, No. 188, dated July 7, 1886,) of which the following is a specification.

The apparatus consists of a wooden box with screw, brush, and steering apparatus, as hereinafter set forth.

Figure 1 shows that side which turns against the vessel; Fig. 2, the side which turns up.

In the stern of the box a screw, *a*, in the form of a propeller, is fixed upon a shaft, *a'*, which, by the agency of bevel-gears 1 2, actuates the shaft 3, on which is secured the rotary brush *b*, made in the form of a circular plate or disk, in the middle of which is fixed an iron scraper, *c*, of shape resembling a letter S. The axis of this brush when the brush is in use is substantially at right angles to the side of the vessel. The brush is made of stiff bristles. The scraper *c* can, by means of the screws *d d'*, be regulated in position from time to time as the brush is worn out.

In order to prevent the scraper from acting too hard on the hull, the springs *m* are fixed under the brush, and this will effect an elastic touching between the scraper and the hull. The hook *n* serves to prevent the springs from being overstrained and wrung out of shape or place. When the vessel is running, the screw *a* is moved and turns the brush *b*.

The steering of the apparatus is effected, so far as relates to its horizontal movement, by means of the ropes *x' x''*, which meet in a tow-line, which, by a block, may be fastened about the martingale to the jib-boom. In vertical direction the apparatus is moved by the ropes *y' y''*, which run together, and are combined with the lowering-line, which is again fastened to the gunwale of the vessel pretty vertically over the spot where the bottom-scraper is working. The cutting-board *f* is arranged to be turned about the pivot *g* and is steered by

the rope *z*. The board, by means of these ropes, can be drawn up or down to raise or lower the apparatus, and thus the bottom-scraper is steered in vertical direction. The scraper to be adapted for operating on the other side of the vessel simply requires that the cutting-board and the ropes be put on the other side of the scraper, and *g'* instead of *g* then becomes the pivot about which the cutting-board *f* can be moved. The apparatus is kept in to the vessel as well by its own declivity in the fore part as by the side shovel or guide, *h*, which can be made more or less broad by the auxiliary extensible vanes or shovels *l*, which can be drawn out of it or put into it, and thus regulate the pressure of the apparatus against the hull of the vessel.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In combination with the frame and its rotary scraper, the side shovels or guides, *h*, on the frame at its rear and provided with the extensible vanes *l*, as and for the purposes set forth.

2. In a bottom-scraper for vessels, the combination, for steering the same, of the pivoted cutting-board *f*, hung below the scraper, side shovels or guides, *h*, and extensible vanes *l*, located back of the scraper, and the described system of ropes for adjusting and steering the apparatus.

3. The bottom-scraper described, consisting of the combination, with the frame or box, of the propeller, the shaft and gears connecting the propeller with the brush, the rotary brush and scraper, extensible side shovels or guides, and the described system of ropes for lowering, raising, and adjusting the apparatus.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THEODOR THORSEN.

Witnesses:

A. CHR. ULIN,
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