Hunt & Townsend.

Ice Boat.

No. 958. Patented Oct. 3, 1838.

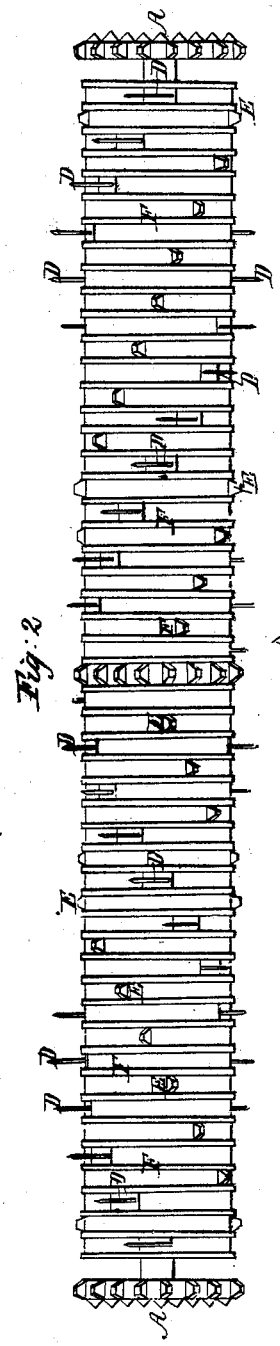
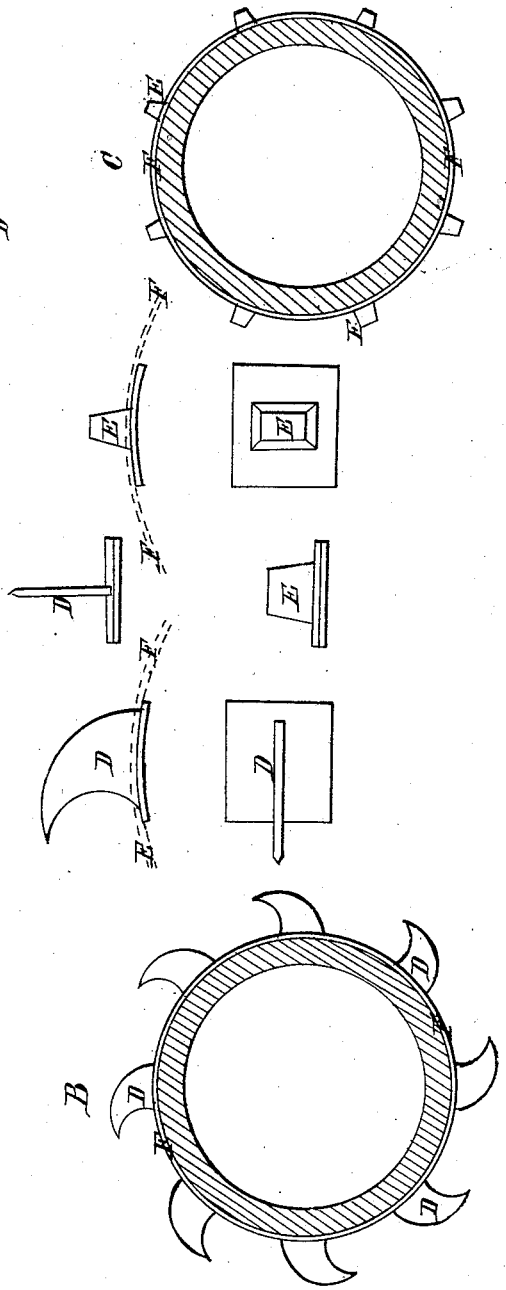


Fig: 2.



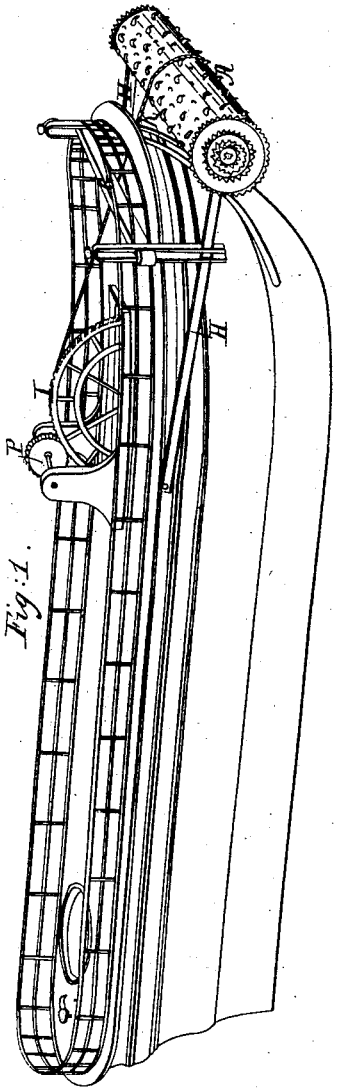


Fig: 1.

UNITED STATES PATENT OFFICE.

W. HUNT AND J. TOWNSEND, OF NEW YORK, N. Y.

ICE BOAT FOR BREAKING ICE AND FACILITATING NAVIGATION IN THE WINTER SEASON.

Specification of Letters Patent No. 958, dated October 3, 1838.

To all whom it may concern:

Be it known that we, WALTER HUNT and JACOB TOWNSEND, both of the city, county, and State of New York, have invented a new and Improved plan of machinery to be applied to boats and vessels and designed for breaking ice and facilitating the navigation of rivers, lakes, bays, &c., in the winter season; and we do hereby declare, that the following is a full and exact description.

The first and principal machine in the above plan is a cylinder (see letter A Figure 2 in the annexed drawing), with its periphery and ends, armed with strong iron hooked and wedged shaped teeth, about one foot in height and depth upon the base, and some two inches in thickness (see letters D, D, D, D, Fig. 2). The cylinder, which may be made of wood in the usual manner, and the teeth fastened on the periphery by means of strong hoops binding over flanges cast upon the base of the same (see letters F, F, F, F,) or it may be formed entirely of iron, cast in rings or zones, and united in a similar manner to iron water pipes or otherwise, is to be suspended horizontally in front, and supported upon end gudgeons, revolving in strong iron arms affixed to the sides of the same at their back end, by means of heavy iron bolts passing through brackets into the boat's side timbers in the strongest manner. These arms are further supported at the forward ends near the bearings of the cylinder by means of stirrups or yokes, that fall down astride the ends of a strong beam situated across the bows of the boat (see G Fig. 1). The arms H H passing through the slots in said yokes are raised and depressed by means of upright screws or otherwise working through the tops of said yokes, with their feet resting in steps on the ends of the beam G.

Though not essential to our plan, we have in our model adopted the twin boat, with a paddle wheel in the center, the outside rim of which is cogged at I Fig. 1, into which gears pinion P on the shaft of the fly wheel, by which means the power is communicated to the paddle wheel I, and from thence to the cylinder A, by a chain band or bands passing over spurs upon the same at K, or otherwise the power may be communicated from the engine as usual by means of cranks upon the shaft of the paddle wheel.

To prevent the accumulation of ice upon the paddle wheel and cylinder, they can be housed upon their upper sections into which the exhaust steam and smoke may be discharged. The periphery of the cylinder in its rotation may travel somewhat faster than the paddle wheel in order that the boat may not be forced upon the ice any faster than its path may be cleared.

If necessary, stern and side cylinders may be added, and the whole or part moved by gearing bands or otherwise.

The teeth D, D, D, D, should range spirally around the cylinder in the manner of a right and left hand screw from the center (see Letter A) in order that they may take alternate effect upon the ice, their sharp ends striking first in the manner of an adze upon the edge of the broken ice, chipping it off in fragments without allowing the body of the cylinder to come in contact with the solid ice; by this arrangement it will be seen that the principal force of the engine may be exerted upon each tooth singly at the moment of contact, and the resistance of the ice will in a measure aid in propelling the boat in case the cylinder is not immersed to its center, in which case it may not be necessary to put extra heads upon the journals of the cylinder on the outside of the arms as represented in figure.

In this invention we confine our claims to the use and application of revolving cylinders with teeth or spurs upon their outer surfaces to be attached to boats and vessels; said cylinder being suspended upon arms, and the whole constructed substantially in the manner and for the purposes as hereinabove set forth.

New York September 18th 1838.

WALTER HUNT.
JACOB TOWNSEND.

Witnesses:
S. O. BENNETT,
WM. L. MORRIS.