

THOMAS SMITH.

Improvement in Propulsion for Canal-Boats.

No. 127,437.

Patented June 4, 1872.

Fig. 1.

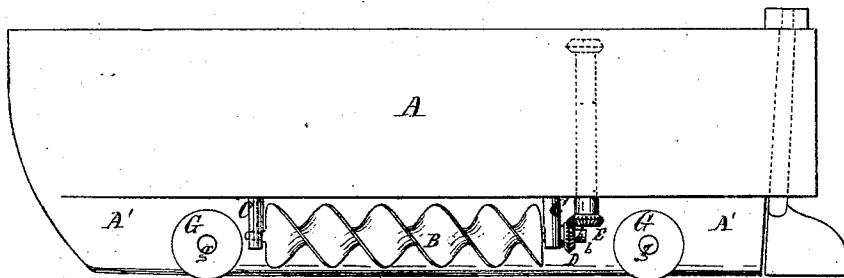


Fig. 2.

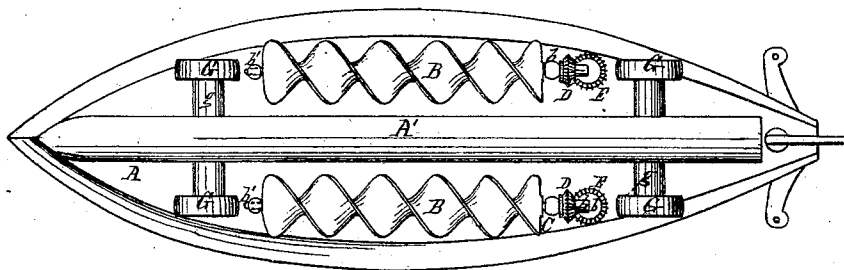
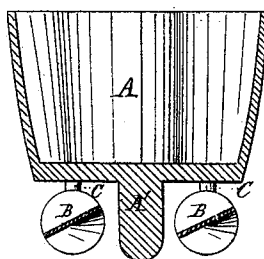


Fig. 3.



Witnesses.

A. M. Smith  
A. E. Mahon

Inventor

Thomas Smith

# UNITED STATES PATENT OFFICE.

THOMAS SMITH, OF GREEN ISLAND, NEW YORK.

## IMPROVEMENT IN PROPULSION OF CANAL-BOATS.

Specification forming part of Letters Patent No. 127,437, dated June 4, 1872.

*To all whom it may concern:*

Be it known that I, THOMAS SMITH, of Green Island, county of Albany, State of New York, have invented a new and useful Improvement in Propellers, of which the following is a full, clear, and exact description reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a side elevation of a boat with my improvements applied. Fig. 2 is a bottom view of the same; and Figure 3 is a central transverse sectional view.

Similar letters of reference denote corresponding parts in all the figures.

My invention relates to a novel arrangement of the screw propeller-wheels, in connection with an arrangement of means for adapting the boat to pass through shoal waters, as hereinafter set forth.

In the accompanying drawing, A represents the hull of the vessel, which may be of any desired construction, adapting it to canal, river, or ocean navigation, and made, by preference, flat on the bottom, or such portion thereof as is occupied by the propeller-screws B B, and provided with a central keel, A', of sufficient depth and strength to protect the screws from contact with the ground in shallow water. The screw-shafts *b b'* are mounted in supports C firmly attached to the bottom of the vessel or projecting laterally therefrom or from the keel, as preferred; one of these, *b*, on each shaft is armed with a bevel-pinion, D, which engages with and is driven by a bevel-wheel, E, at the lower end of a vertical shaft, which is mounted in a tubular standard or support, F, which projects through the bottom of the vessel and extends to a point within the vessel above the water-line. Power is connected to the upper end of the shafts in any suitable way for driving the screws. The screws are arranged, as shown, one on each side of a central keel, and in open water in contradistinction to those used inclosed in cylinders, for the purpose of allowing the water to press with equal force upon all parts of the elongated screw.

The screws shown are of a peculiar construction, which, together with the means for forming the same, are described in another application of even date herewith and need not be further described here.

To the keel A' in front and in rear I attach horizontal transverse axles *g*, to the outer ends of which and about in line with the shafts *b b'* of propeller-screws B I attach wheels G, in such vessels as are intended for use in shallow waters. These wheels project somewhat below the keel A' and screws B in such manner as to protect said parts in shallow water, where the boat would rest and be propelled forward upon said wheels leaving the propeller-wheels free and unobstructed in their work of propelling the vessel. This is important where the bed of the water is hard or rocky, and where, without the support of wheels, injury would result to both the boat and to the propeller-screws. These wheels, together with their axles may be so applied as to be readily removable, or they may be made adjustable and adapted to be withdrawn upward into suitable compartments provided in the bottom of the vessel for their reception and so arranged that they may be thrown out or down the required distance when the vessel comes into shallow waters, in such manner as not to impede the progress of the vessel when not required for the purpose explained.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In combination with the screw-propellers B, arranged in open water and operating as described, the carrying-wheels G G, arranged relatively to the screws B, and adapted to take the ground in shallow water and prevent obstructions to the working of the screws, as and for the purpose described.

In testimony whereof I have hereunto set my hand this 13th day of March, A. D. 1872.  
THOMAS SMITH.

Witnesses:

R. A. HYDE,  
ALEX. MAHON,