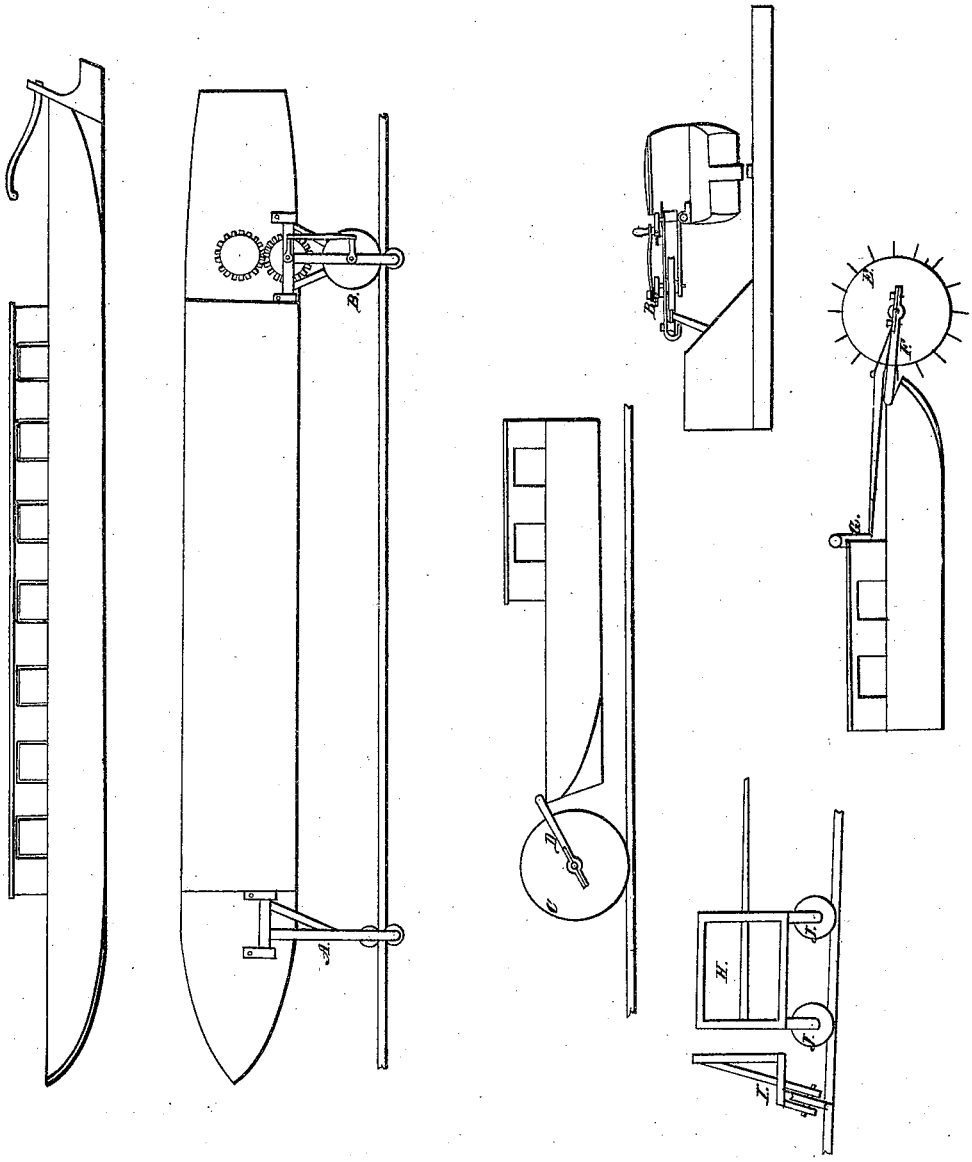
J. Finlay,
Towing.

No. 165. Patented Apl. 17, 1837.



N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN FINLAY, OF BALTIMORE, MARYLAND.

MODE OF PROPELLING BOATS ON CANALS OR RIVERS.

Specification of Letters Patent No. 165, dated April 17, 1837.

To all whom it may concern:

Be it known that I, JOHN FINLAY, of Baltimore, in the State of Maryland, have invented certain new and useful Improvements in the Mode of Propelling Boats on Canals and Rivers, which are described as follows, reference being had to the annexed drawings of the same, making part of this specification.

The nature of my improvements consists in providing a rail or stringing on the side of canals or rivers, or over the tops of boats propelled on canals or rivers, said side stringing or rail being placed on posts secured on the slopes or banks of the canal and near the edge of the water, elevated sufficiently high to allow of certain wheels, hereafter described, to pass between the tow path and rail and clear of the former; and also to allow of other wheels attached to a frame, moving against the rail without touching the tow path or bank, said frame being moved with horses traveling on the tow path. And when the propelling power is in the boat to act on a wheel or wheels supported in a frame attached near the stern by joints or hinges, lying in a horizontal line, or nearly so, according to the depth of the water in the canal; said wheel or wheels acting in the same position with the frame by the moving power in the boat; being held in contact with the rail by a friction wheel on the outside of the rail, drawn tight by springs, levers, or counter weights, producing a full action on the rail. And also in using a guide frame at the forward part of the boat with friction rollers against the sides of the rail; having an up and down action to conform to the depth of the water in the canal. The stringing or rail used over boats being supported by a frame of wood and iron, to which the moving wheel of the boat is applied, as in the mode just described.

The frame I use for horses to move with on the tow path with wheels acting obliquely on the rail secured by friction rollers, is supported by the horses with the back bands, and may be used with a number of horses; to which frame the boat is attached at the forward end by a rod with suitable fastenings connecting them together; having also a rope or line fastened to the axle of the hind wheel, or to a pin in the frame, or otherwise, and to the boat by which it will always be kept at a uniform distance from the edge of the canal, causing little or no injury to its banks; the horses acting with this frame will produce a steady draught with less fatigue to themselves than by the common method; and will perform greater labor; the whole being easily detached to allow of boats passing each other, or for other purposes. When steam power is used in packet boats it is placed in the stern of the boat, by which means the annoyance of smoke and cinders will be avoided; besides producing great velocity on canals without the risk that attends the use of rail roads.

To enable others to make and use my invention I will proceed to describe its construction and operation.

1st. I construct a boat in the best form to pass through the water with the least resistance; near the bow of which I attach a frame with two friction wheels that conform to the rail on the side of the canal which keep the boat always parallel with the rail and at the same distance from the side of the canal, as will be seen by reference to the drawing marked A. Near the stern of the boat is fixed the propelling power which operates a crank, the axis of which passes through the center of the moving wheel working in the frame, connected to the boat by hinges or joints so as to allow of its accommodating itself according to the depth of water in the canal; said wheel acting in nearly a horizontal line on the rail; to the outer end of the frame and on the other side of the rail is fixed a friction wheel in a slide, forced by springs, levers, or counter weights into close contact with the side of the rail pressing the moving wheel in contact with the rail which produces the forwarding action on the boat, as shown by letter B. In the use of animal power and the tow path the frame to which the horses are attached moves in an inclined position, the plane of the wheels being oblique to the horizon; and to which frame the boat is to be attached by a rod with eyes or rings at its ends, slipped over pins in the forward part of the boat and wheel-frame to keep the boat parallel to the rail. To the hind wheel axle, or to a pin inserted in the frame a rope is attached by one end, the other end being secured to the after part of the boat and regulated to length, so that the boat shall be at an equal distance from the edge of the canal.

This carriage or frame is shown in the drawing by the letters H, I and J. It is drawn by horses traveling on the tow path and producing a direct forwarding action to the boat by which means it is moved with ease, steadiness, and velocity; and without that reaction and jerking motion produced by the sagging of the rope in the present mode of using horses and tow lines on canals.

Now, what I claim as my invention and which I desire to secure by Letters Patent consists in—

1. The use and application of a string piece or rail secured to posts placed near the edge of the water in canals; or over the tops of boats used on canals and rivers, and applying to the sides of said stringing or rail a wheel or wheels attached by a frame to a boat, with joints so as to adapt the whole to the depth of the water; operating nearly in a horizontal line; and to which wheel or wheels I apply the propelling power causing the boat to move with velocity and without injuring the banks of the canal.

2. I also claim the use and application of the guide frame with the friction roliers to keep the boat parallel to the canal.

3. I likewise claim the use and application of a frame with wheels to operate on the rail above described, for horses to move with on the tow path to propel boats on canals, said frame having two wheels whose planes are oblique to the horizon secured by friction rollers acting on the opposite side of the rail being easily removed so as to disengage the wheels from the rails, when boats are required to pass each other, or for any other purpose.

4. I further claim the use of my invention on canals on the ice during the winter, the boats being placed on runners.

JOHN FINLAY.

Witnesses:
WILLIAM P. ELLIOT,
WM. BISHOP.