I. Jackson.

Wheels in Channels.

No. 1,070. Patented Jan. 18, 1839.

Fig. 1.

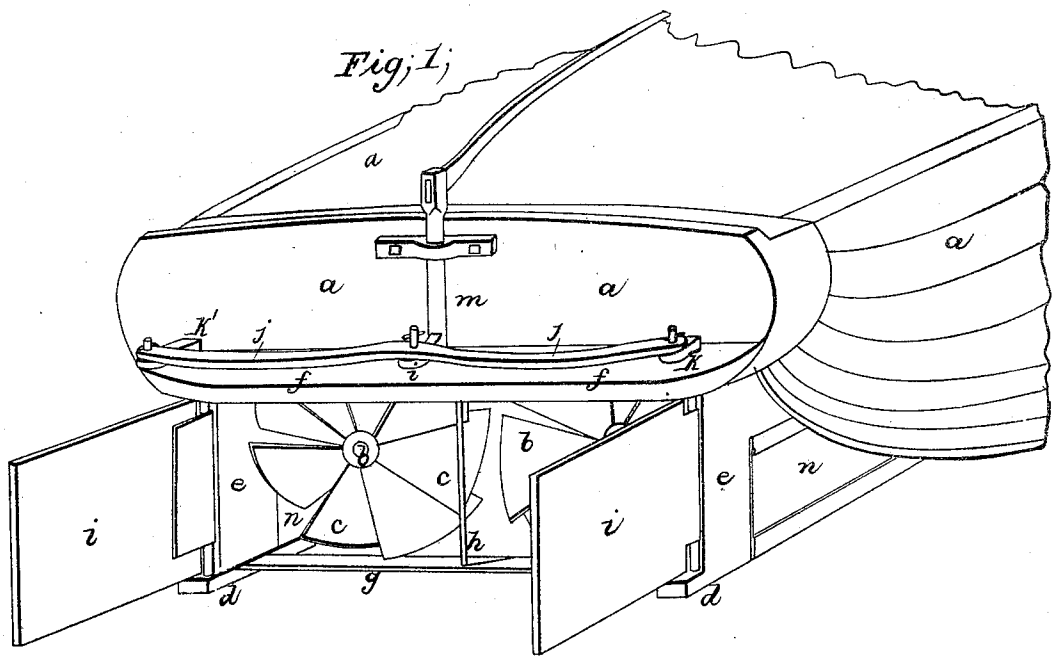
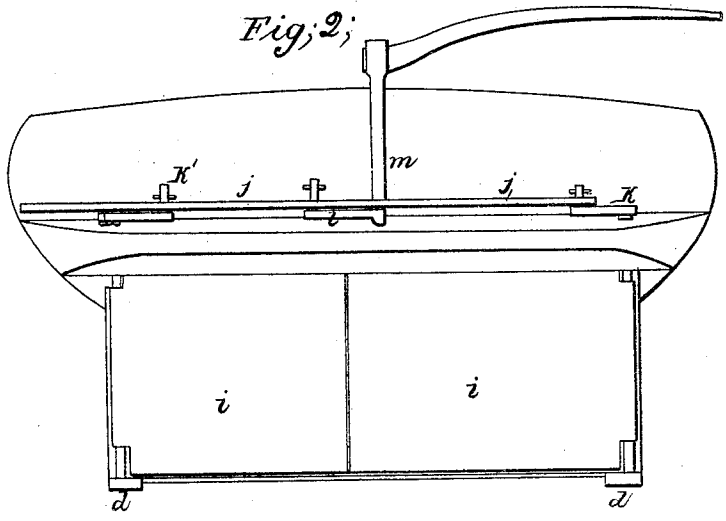


Fig. 2.



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

UNITED STATES PATENT OFFICE.

THOMAS JACKSON, OF READING, PENNSYLVANIA.

IMPROVEMENT IN THE MODE OF APPLYING WHEELS FOR PROPELLING CANAL-BOATS.

Specification forming part of Letters Patent No. **1,070**, dated January 18, 1839.

To all whom it may concern:

Be it known that I, THOMAS JACKSON, of the borough of Reading, county of Berks, and State of Pennsylvania, have invented a new and Improved Mode of Applying Wheels for the Propelling of Canal-Boats; and I do hereby declare that the following is a full and exact description thereof.

My improvement consists in placing two wheels beside each other under the stern of the boat, which wheels are to revolve in contrary directions perpendicular to a line of the boat from stern to stem, and in the application of dead-woods with their appurtenances for protecting the wheels from the sides of the canal, tow-lines, &c.

In the accompanying drawings, *a a a a*, Figure 1, represent the stern of a boat, and *b b* the wheels placed under it to propel the boat. These wheels are placed so that the axles enter the bends of the stern at equal distances from the center, the distance of each axle from the center of the stern being equal to half the diameter of the wheel, so that the ends of the paddles of one wheel when revolving may just clear those of the other.

c c c are the paddles or blades, of which there are eight in each wheel. Their form is triangular, having a spiral twist, and they are set in a hub or nave at equal distances from each other. The propelling-wheels are fixed upon axles running in collars immediately behind the wheels and in boxes at their opposite ends. They may be driven either by spur or bevel gearing so arranged as that the wheels may revolve in opposite directions. These paddles or buckets are inserted in the hub at an angle of about sixty degrees with the axle and act obliquely on the water, in consequence of which and of the wheels revolving in opposite directions they produce a direct propelling action on the stern of the boat.

To protect the wheels from being injured by the sides of the canal, tow-line, and other causes, and to assist in subduing the agitation in the water, which would otherwise injure the banks of the canal, I lay two keels *d d* outside of the wheels and projecting out under the stern as far as the stern-plank *f f*. Between these keels, the boat, and the stern-plank I place the dead-woods *e e*, connected at the bottom by a flat bar of iron *g*, which extends nearly under the wheels and thus protects them from tow-lines or other ropes. This bar is strengthened by the rod *h*, which passes down from the stern-plank.

The rudders *i i* are about the length of the common rudder and are made to act together by means of the connecting-bar *j j*, which bar rests upon arms *k k'*, projecting from the shafts that are attached to the rudders and upon the arm *l*, which projects from the tiller-post *m*. On entering a lock it will be necessary to fold the rudders upon the wheels under the stern-plank. This is done by taking off the connecting-bar from the arm K', bringing one rudder under the stern-plank and then turning the tiller nearly parallel with the connecting-bar, which will bring the other also under into its place, as represented in Fig. 2, where the same letters of reference are used as those employed to designate the same parts in Fig. 1.

When the boat is heavily laden, it will sink in the water to the lower edge of the stern-plank and the bottom of the boat will be brought very near to the bottom of the canal, leaving, of course, but a small space for water between them. In this case it will be found advisable to admit water through the dead-woods by removing an iron slide *n n*, which covers an opening made for this purpose. I find by bringing the stern-plank down to the water-line that by the dead-woods and rudders the agitation of the water is much subdued and its action upon the sides of the canal rendered comparatively feeble.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The mode of applying wheels constructed and arranged as above described to the stern of a boat.

2. The openings and slides in the dead-woods on each side to admit water to pass through when the boat is heavily laden, the whole being constructed and operating as herein set forth.

THOMAS JACKSON.

Witnesses:

LINTON THORN,

C. H. WILTBERGER, Jr.