R. WERNER.

Propelling Canal Boats.

No. 212,638. Patented Feb. 25, 1879.

Fig: 1

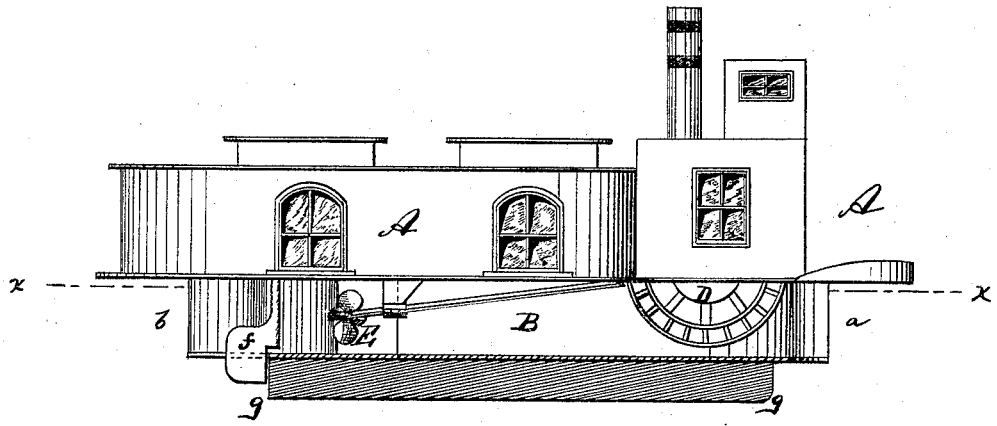


Fig: 2

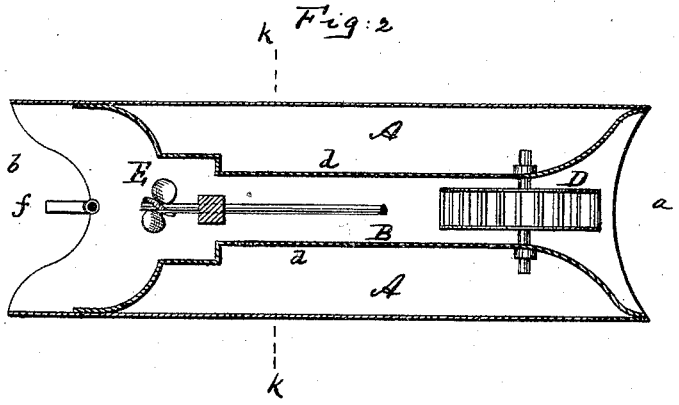
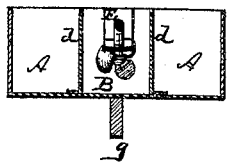


Fig: 3



Witnesses:

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UNITED STATES PATENT OFFICE.

ROBERT WERNER, OF HOBOKEN, NEW JERSEY.

IMPROVEMENT IN PROPELLING CANAL-BOATS.

Specification forming part of Letters Patent No. **212,638**, dated February 25, 1879; application filed July 13, 1878.

To all whom it may concern:

Be it known that I, ROBERT WERNER, of Hoboken, in the county of Hudson and State of New Jersey, have invented a new and Improved Steam Canal-Boat, of which the following is a specification:

This invention relates to an improved steam canal-boat, and has for its object to so construct the same that it will not swell or agitate the water to an extent which would be injurious to and wash the banks of the canal.

The invention consists in the combination of a canal-boat having a trunk or water-passage from bow to stern, with a paddle-wheel placed in the forward part of such passage and mounted upon a transverse shaft, and with a screw-propeller placed near the stern into said passage, but mounted upon a longitudinal shaft.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of my improved steam canal-boat. Fig. 2 is a horizontal section of the same on the line *x x*, Fig. 1. Fig. 3 is a vertical transverse section on the line *k k*, Fig. 2.

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

The letter A represents the hull of a canal-boat, of suitable construction. The same is provided below its water-line with a trunk or water-passage, B, extending from the bow *a* to the stern *b*, and open at the ends, but closed at the sides. The vertical sides *d d* of this trunk diverge at both ends, and may be made to connect directly to the sides of the boat at an acute angle, as clearly shown in Fig. 2.

Into the front part of the passage B is hung a paddle-wheel, D, which is mounted upon a transverse shaft. To this paddle-wheel D rotary motion is to be imparted, in suitable manner, by the steam or other engine with which the canal-boat is provided.

Into the rear portion of the trunk is hung a screw-propeller, E, mounted upon a longitudinal shaft, to which motion may likewise be imparted by the steam or other engine.

f is the rudder of the boat.

I prefer to make the trunk B tapering, so that it is wider at the rear than at the front. The hull of the boat may be made with straight, parallel, or with tapering sides.

When the boat is propelled the water which enters the trunk B is first struck by the paddle-wheel, which produces transverse waves, and next by the screw-propeller, which produces longitudinal waves. The waves produced by the wheel D are cut and neutralized by those of the screw-propeller E, and serve at the same time to neutralize the longitudinal waves, thereby preventing the lateral swell, and protecting the banks of the canal from consequent injury.

I claim—

In a canal-boat having passage B, extending from bow to stern, the combination of the stern propeller E with the bow paddle-wheel D, which revolves at right angles to the propeller, for the purpose of neutralizing the waves and swell, substantially as specified.

ROBERT WERNER.

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