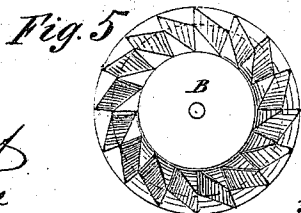
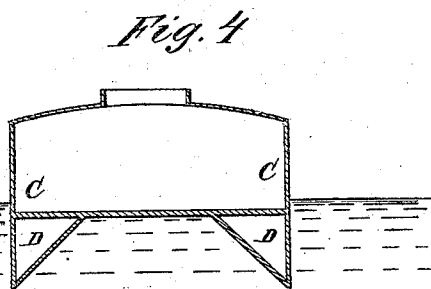
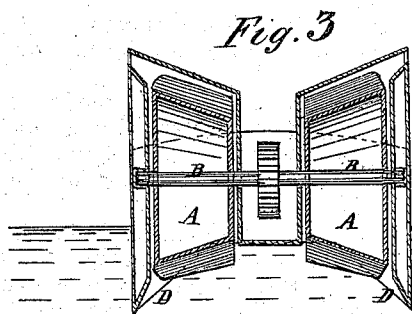
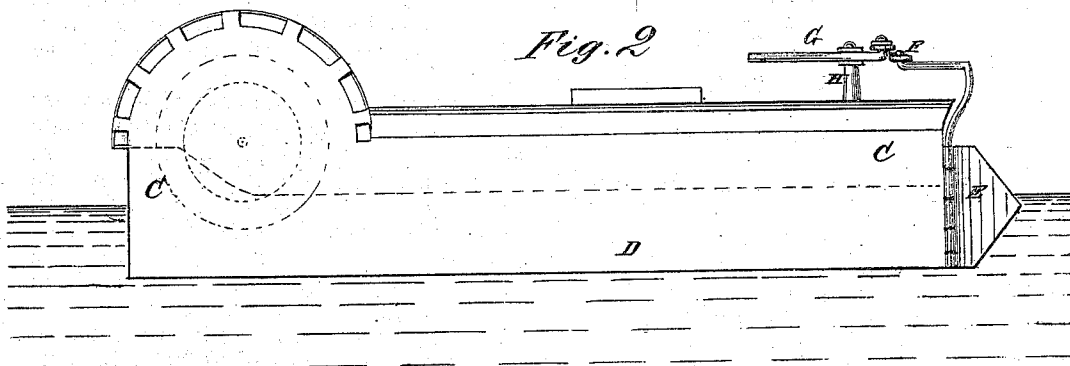
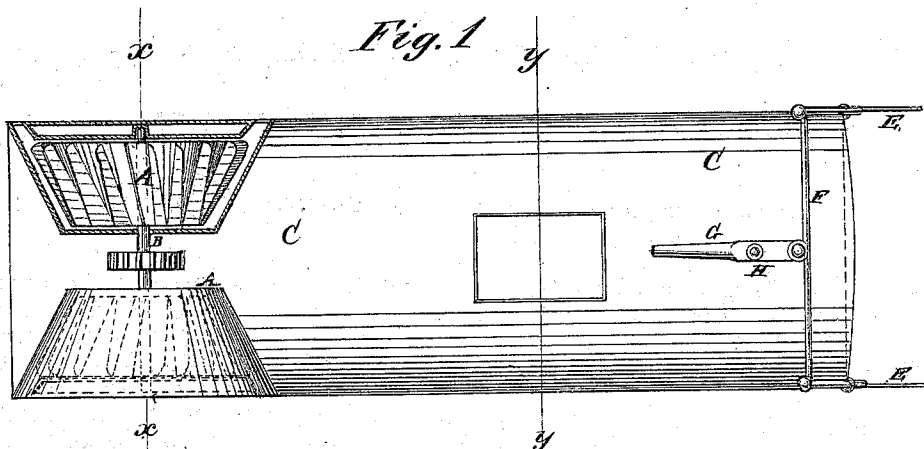


I. JOSEPH HILGERD.

Improvement in Canal-Boat Propulsion.

No. 126,701.

Patented May 14, 1872.



Witnesses:

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# UNITED STATES PATENT OFFICE.

I. JOSEPH HILGERD, OF NEW YORK, N. Y.

## IMPROVEMENT IN CANAL-BOAT PROPULSION.

Specification forming part of Letters Patent No. 126,701, dated May 14, 1872.

Specification describing a new and useful Improvement in Canal-Boats, invented by I. JOSEPH HILGERD, of the city, county, and State of New York.

Figure 1 is a top view of a canal-boat illustrating my invention, part being broken away to show the construction. Fig. 2 is a side view of the same. Fig. 3 is a detail cross-section of the same taken through through the line *x x*, Fig. 1. Fig. 4 is a detail cross-section of the same taken through the line *y y*, Fig. 1. Fig. 5 is a detail view of one of the wheels.

Similar letters of reference indicate corresponding parts.

My invention has for its object to improve the construction of canal-boats, so as to enable them to be propelled through the water with greater velocity and without injury to the banks; and it consists in the construction and combination of various parts of the boat, as hereinafter more fully described.

A are two wheels, made in the form of frustums of cones, placed apex to apex, and attached to the same shaft B to which the power is applied. The wheels A are made air and water tight, and have paddles or blades slightly inclined or spiral, attached to their conical surfaces, as shown in Figs. 1, 3, and 5. The walls of the forward part of the boat at the sides of the wheels A are made double, and air and water tight, to serve as floats to buoy up the bow of the boat. The boat C is made with two keels, D, one upon each side of its bottom, as shown in Fig. 4. The keels D are made air and water tight, to serve as buoys to assist in floating the boat. The keels D also form a channel or water-course along the center of the boat's bottom to receive the water from the wheels A to prevent the banks from being washed by the swell from the wheels.

The two keels D also prevent the boat from shaking in its movements. E are the rudders, two of which are used—one at the rear end of each keel D. The rudders E are made triangular in form to prevent them from stirring up the sand or mud in the bottom of the canal in shallow water, and are connected by a cross-bar, F, to the center of which the tiller G is pivoted. The tiller G is pivoted to the tiller-post H at the center of the rear part of the boat.

By this construction the boat will draw less water while carrying a heavier load than boats constructed in the ordinary manner, and at the same time the wheels A will cut down the water in front of the boat and force it inward and rearward through the channel in the bottom of the boat, so that it may lose its force before being discharged at the stern of the boat, and thus prevent the formation of a swell which might injure the banks, thus enabling the boat to be propelled faster than ordinary boats can be.

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

1. The two conical wheels A, made air and water tight, with sliding spiral buckets, and attached to the same shaft, substantially as herein shown and described, and for the purpose set forth.

2. The two side keels D, in combination with the hull C of the boat and with the two conical wheels A, substantially as herein shown and described, and for the purposes set forth.

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Witnesses:

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