

E. K. Watson,

Hyd. Propeller.

No. 107,573.

Patented Sept. 20. 1870.

Fig. 1

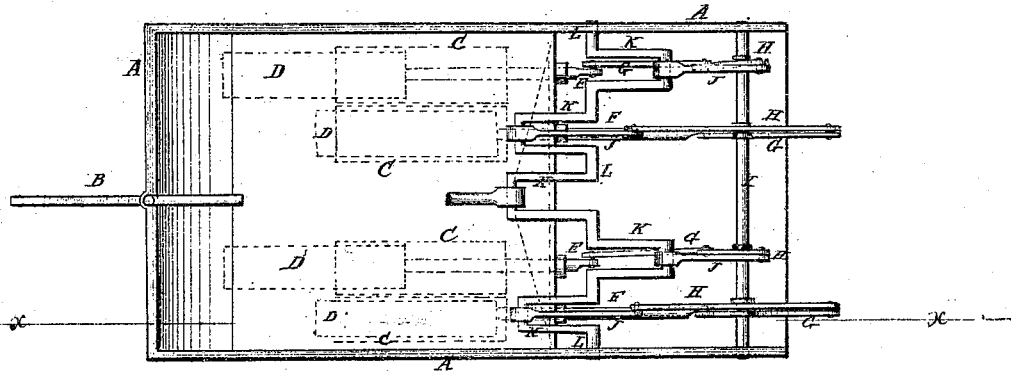
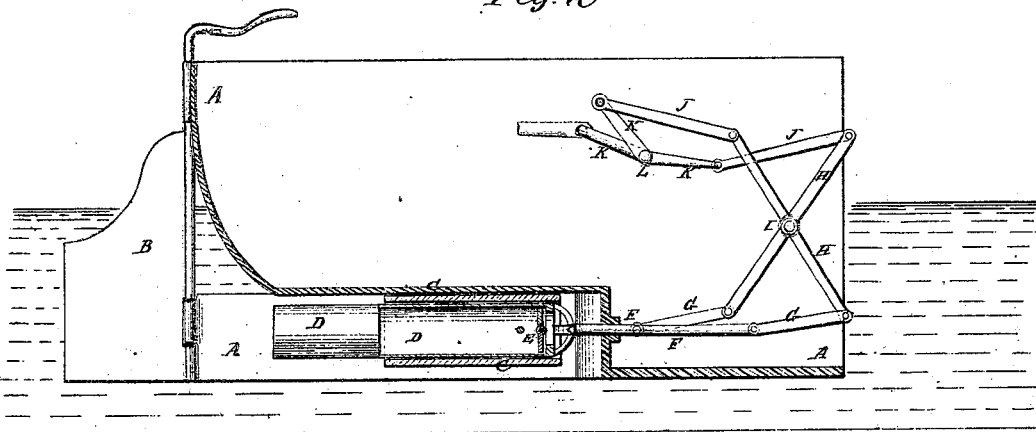


Fig. 2



Witnesses:

A. W. Hymowitz
L. J. Habel

Inventor:

E. K. Watson
PER *Munn & Co.*
Attorneys.

United States Patent Office.

EDWARD K. WATSON, OF SHOKAN, NEW YORK.

Letters Patent No. 107,573, dated September 20, 1870.

IMPROVEMENT IN PROPELLING CANAL-BOATS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, EDWARD K. WATSON, of Shokan, in the county of Ulster and State of New York, have invented a new and improved Device for Propelling Canal-Boats and other vessels; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a top view of the rear part of a canal-boat to which my improved device has been attached.

Figure 2 is a detail vertical longitudinal section of the same taken through the line *z z* of fig. 1.

Similar letters of reference indicate corresponding parts.

My invention relates to canal-boats, and my object is to improve the means of propelling them.

I will first describe my improvement in connection with all that is necessary to a full understanding thereof, and then clearly point it out in my claim.

A represents the rear part of the body or hull of the canal-boat or other vessel, the rear portion of the lower part of which, upon both sides of the keel, is cut away or recessed, to form spaces or recesses to receive the operating parts of the device.

In the recesses or spaces thus formed upon each side of the keel, and at such a distance in front of the rudder B as to be entirely out of the way of the working of said rudder, is secured one or more tubes, C, as shown in fig. 2, and indicated in dotted lines in fig. 1.

D are tubes, placed in the said stationary tubes C, and fitting and working within said tubes.

In the forward part of the tubes D are secured hinged valves, E, in such a way that, when the said inner tubes D are drawn forward, the said valves E may open, so as to present a very slight resistance to the water, and when the said tubes D are pushed rearward the said valves will open out, so as to present

the greatest possible resistance to the water, and thus drive the boat forward.

To the forward end of each of the movable tubes D is securely attached the rear end of a connecting-rod, F, the forward end of which is connected by a connecting-rod, G, with the lower arms of the bars or levers H, which are secured or pivoted to a shaft, I, the ends of which are connected with and supported by the frame-work of the vessel, or other suitable supports.

To the other or upper ends of the levers or arms H are pivoted the forward ends of the connecting-rods J, the rear ends of which are pivoted to the cranks K of the crank-shaft L, the ends of which work in bearings in the frame of the vessel, or in other suitable supports.

The cranks K, except the central one, to which the power is applied, are arranged in pairs, the cranks of each pair being upon the same side of the shaft L, exactly parallel with each other, and one upon each side of the keel, so that two of the valve-tubes, D E, one upon each side of the keel, may always be working at the same time, so as to propel the vessel straight forward.

By this arrangement the engine may be placed in the stern of the boat, so as to be as much as possible out of the way, the whole apparatus requiring but little space, and leaving the main body of the boat free to receive the loading.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

The combination of stationary guide-tubes C with movable valved tubes D E working within them, all relatively arranged and operating in a canal-boat, as and for the purpose described.

EDWARD K. WATSON.

Witnesses:

C. L. HOWK,
C. B. BISHOP.