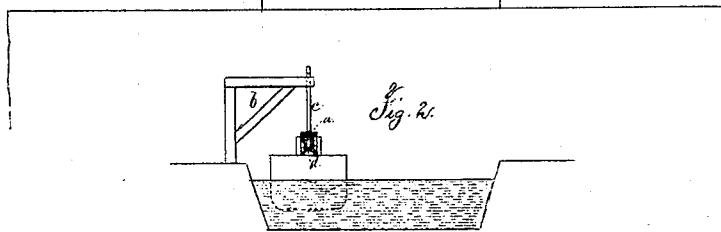
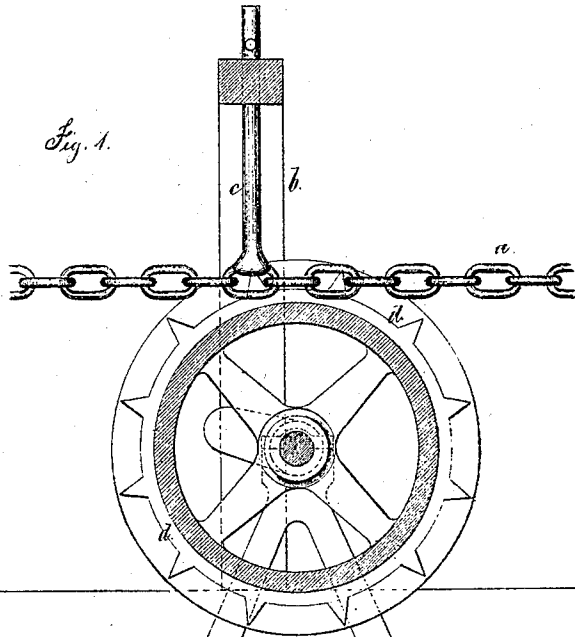


*J. Reid,*

*Towing.*

*No. 109248.*

*Patented Nov 15. 1870.*

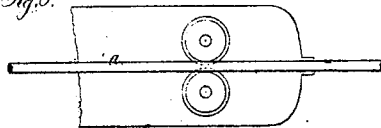


*Witnesses.*

*Chas. H. Smith*  
*Geo. S. Walker*

*James Reid*

*Fig. 3.*



# United States Patent Office.

JAMES REID, OF CATSKILL, NEW YORK.

Letters Patent No. 109,248, dated November 15, 1870; antedated November 3, 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, JAMES REID, of Catskill, in the county of Greene and State of New York, have invented and made a new and useful Improvement in Propelling Canal-Boats; and the following is declared to be a correct description thereof.

In propelling or towing canal-boats difficulty is experienced, when paddle-wheels or propellers are employed, because the action of the paddles causes the banks to be washed, there being commotion in the water by the passing boats, to which is added the agitation from the propelling mechanism.

Various efforts have been made to propel such boats by stationary power, but the same is expensive and difficult to keep in repair. A chain or wire rope has also been employed, the same being lifted from the bottom of the canal and then allowed to fall into the water. This latter device is difficult to operate, because either two chains have to be employed or else the chain has to be dropped by one of the tow-boats in passing another, and then picked up again, besides, being constantly exposed alternately to the atmosphere and to the water, it becomes rusty, and the mechanism is kept more or less wet from the chain.

My invention is designed to overcome all the difficulties that have heretofore been experienced, and consists in a chain suspended above the canal, as the resistance against which a wheel upon the canal-boat or tow-boat acts so as to give propulsion when the said wheel is rotated by competent power on the said boat.

In the drawing I have shown, in

Figure 1, a cross-section of the canal, illustrating the improvement, and in

Figure 2, a side view of the device I employ for moving the boat.

The chain *a* is suspended from the gallows-frame

or post *b* by means of a vertical rod, *c*, or chain, so that a limited amount of rising and falling movement may be allowed to the chain, in order that it may rest upon the chain-wheel *d*, and allow for variations in the height of such chain-wheel, according to the immersion or draught of the boat.

The wheel *d* is made with cavities in its periphery or projecting lugs adapted to taking the chain, so that when the wheel *d* is revolved by competent power, the canal or tow-boat is propelled by this means at whatever speed the power exerted will produce.

The support or suspending device *c* may be of any desired character that will allow of the necessary rise and fall of the chain as the wheel *d* passes along beneath the chain.

Where a wire rope is employed in place of a chain the same is to be grasped between two horizontal wheels upon vertical axles, and to one or both of these a yielding pressure is to be employed so as to grasp said rope, and the power is to be applied to revolve one or both of these wheels, as illustrated in the detached view, Figure 3.

I do not claim a chain or rope that is allowed to fall into the water and rest upon the bottom of the canal.

I claim as my invention—

A chain or wire rope suspended above the canal by suitable posts or supports, in substantially the manner specified, so that it may be acted upon by a wheel upon the canal-boat, and the suspending device will not prevent the action of such wheel on the chain or rope, as specified.

Signed by me this 23d day of March, A. D. 1870.

JAMES REID.

Witnesses:

CHAS. H. SMITH,  
GEO. T. PINCKNEY.